Birriwa Solar and Battery Project

Modification Submissions Report

Prepared for ACEN Australia Pty Ltd

December 2025

Birriwa Solar and Battery Project

Modification Submissions Report

ACEN Australia Pty Ltd

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December 2025

Version	Date	Prepared by	Reviewed by	Comments
2	15 December 2025	R. Dodd	N. Armit	Final

Approved by

Nicole Armit
Executive Leader - Major Projects and Approvals
17 December 2025

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Executive Summary

ES1 Background

The Birriwa Solar and Battery Project is a large-scale, State significant permitted development that will deliver new, firmed clean energy generation into the National Electricity Market (NEM) within the next three years. By pairing and grid forming battery storage technology, the project will support system strength, reliability and security for the region, while ensuring the lowest-cost generation available (solar) can be captured and dispatched in line with demand.

The project (SSD-29508870) was approved by the NSW Independent Planning Commission (IPC) on 16 August 2024 with development consent conditions, and incorporates a large scale solar photovoltaic (PV) electricity generation facility along with battery storage and associated infrastructure, including the construction of a temporary accommodation facility (hereafter referred to as the 'approved project'). The approved project has an indicative capacity of around 600 megawatts (MW) and includes a centralised battery energy storage system (BESS) of up to 600 MW for a two-hour duration (1,200 MWh).

The project site is approximately 15 kilometres (km) south-east of Dunedoo, in the Central-West Orana (CWO) region and within the CWO Renewable Energy Zone (REZ) of New South Wales (NSW), in the localities of Birriwa and Merotherie. It is situated within the Mid-Western Regional Local Government Area (LGA). Part of the approved transport access route to the project site via the Castlereagh Highway is situated within the Warrumbungle Shire LGA.

ES2 Proposed modification

ACEN Australia Pty Ltd (ACEN) is seeking approval to modify development consent SSD-29508870 to include additional lots, an alternative access route and associated upgrade to part of the existing Birriwa Bus Route South (BBRS) Road, an increase in capacity of the approved temporary accommodation facility, and an increase in the storage capacity and duration of the battery energy storage system (BESS) (herein referred to as the modification, Mod 1).

An application to modify SSD-29508870 and an accompanying Modification Report (EMM 2025a) was submitted to the NSW Department of Planning, Housing and Infrastructure (DPHI). The Modification Report was subsequently publicly exhibited between 15 August 2025 and 29 August 2025.

ES3 Submissions received

DPHI received 68 public submissions on the proposed modification, including submissions from individuals and organisations. Thirteen government authorities also provided advice on the modification, including 11 from NSW regulatory agencies and two from the local councils: Mid-Western Regional Council and Warrumbungle Shire Council. This Modification Submissions Report has been prepared to respond to the matters raised in these submissions, in accordance with section 59(2) of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation).

Of the 68 public submissions received by DPHI, 57 were from individuals and 11 were from organisations. Of these, 16% were from the local community (within 5 km of the modification area), and a further 43% were from the regional area (within 100 km of the modification area). The remaining 41% of submissions received from individuals or organisations originated from the broader community (greater than 100 km from the modification area).

ES3.1 Summary of key submission themes

Analysis of submissions shows feedback clustered around four core themes:

1. land use, environment, and cumulative impacts
2. trust, transparency, and engagement
3. local community impacts and services
4. broader context and governance.

Within these themes, the top five key matters most raised in public submissions were:

- impacts to agricultural land and productivity (35% of submitters)
- cumulative impacts associated with the project and REZ (26% of submitters)
- issues beyond the scope of the project (broader concerns about renewables and REZs (25% of submitters)
- the level of engagement, consultation and transparency and social licence of the Applicant (25% of submitters)
- impacts to biodiversity (threatened species, habitat and general biodiversity concerns) (22% of submitters).

The analysis below summarises these key themes.

ES3.1.1 Land use, environment, and cumulative impact

The most frequently raised concerns related to land use and environmental outcomes. Submitters highlighted the importance of agricultural productivity and expressed concern about the cumulative effect of multiple projects within the REZ.

Environmental issues were also prominent, particularly in relation to biodiversity, contamination and visual impacts. These submissions reflect the community's strong expectation that renewable energy projects demonstrate coexistence with agriculture, minimise environmental disturbance, and provide credible evidence of mitigation.

ES3.1.2 Trust, transparency and engagement

A substantial proportion of submissions raised issues around engagement, consultation, and social licence, alongside dissatisfaction with the modification process and general objections to the approved project.

This feedback demonstrates that process and trust are central to community expectations. Submissions highlighted the need for clearer, earlier, and more consistent communication, and for greater transparency about the modification and its implications.

ES3.1.3 Impacts to local services and infrastructure

Concerns were also raised about how the project could affect local infrastructure and access to regional services. Submissions noted potential impacts on health and emergency services, community safety, road infrastructure, traffic and transport impacts.

ES3.1.4 Broader context and governance

Some submissions reflected issues beyond the scope of this modification, including rejection of renewable energy as a solution, concerns regarding the broader renewable energy transition and REZs, frustration with State and Federal regulatory and planning frameworks in general.

While these concerns extend beyond this individual project, they are important in shaping the broader context in which renewable energy projects are delivered.

In summary, the submissions indicate stakeholders are seeking assurance across land and environmental stewardship, trust and transparency, local service impacts, and broader policy oversight. ACEN acknowledges these concerns and views them as opportunities to strengthen delivery, enhance engagement, and contribute to the responsible development of renewable energy in the region.

ES4 Actions taken since exhibition

ES4.1 Stakeholder consultation

In parallel, and post exhibition of the Modification Report, ACEN has continued to engage with stakeholders, including local authorities, government agencies, the local community and neighbouring landholders. Engagement included newspaper and online updates, two community drop-in sessions and in person discussions with neighbours and representatives of the Central West Cycle Trail (CWCT). This engagement focused on explaining the proposed changes, listening to concerns, and feeding those issues into the technical studies and mitigation measures for the modification application.

Following public exhibition, ACEN has continued to engage with councils, agencies, local residents and community groups in response to the matters raised in submissions.

Engagement with government agencies has focused primarily on the content of the submissions provided during their review of the Modification Report. Specifically, these responses have been the subject of further engagement with DPHI, the Energy Corporation of NSW (EnergyCo), the Network Operator, Mid-Western Regional Council, Warrumbungle Shire Council, Central West Cycle Trail (CWCT) and the Conservation Programs, Heritage and Regulation Group (CPHR) of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW).

ES4.2 Further technical assessments and revisions

The Aboriginal Cultural Heritage Assessment Report (ACHAR) and the Historical Heritage Assessment Report (HHAR) for the modification has been revised in response to advice received from Heritage NSW and is included in Appendix C and Appendix D, respectively.

The Biodiversity Development Assessment Report (BDAR) has been revised in response to advice received within Conservation Programs, Heritage and Regulation's (CPHRs) submission, and is included in Appendix E. Following the revision of the BDAR, minor adjustments to the modification development footprint and modification area have been reflected across all BDAR figures and the figures within this report including Figure 1.2 (modification area).

ES5 Justification and conclusion

The approved Birriwa Solar and BESS Project will play an important part in achieving the objectives of the CWO REZ by contributing to the continued growth of renewable energy generation and storage capacity. The project will provide economic benefits for both the local economy within the Mid-Western Regional LGA and the Warrumbungle Shire LGA and more broadly, the regional economy within the Central West.

ACEN is seeking to modify SSD-29508870 under section 4.55(2) of the EP&A Act. The modification will enable flexibility in design and construction and optimisation of the solar array layout, increase the project's energy storage potential providing additional firming support and greater network system strength, increase employment opportunities during the peak construction period, allow sufficient space for maintenance, and provide an alternative access route to the project.

The proposed modification to the project is substantially the same development for which consent was originally granted under the NSW planning framework. Impacts to environmental and social values are comparable to those contemplated under the original development consent. Minor changes to these values as a result of the modification have been assessed and appropriate mitigation measures have been identified to address residual impacts. The modified project will comply with all relevant government legislation, plans, policies and guidelines.

Matters raised in submissions on the modification are addressed in this report, which demonstrates no changes to the modified project are required, and matters raised are addressed through identified mitigation measures (refer to Appendix B). The project description, along with its justification including evaluation and benefits as presented in the Modification Report (Chapter 6), therefore remain a true and accurate reflection of the modified project for which approval is sought.

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1 Introduction

1.1 Background

The Birriwa Solar and Battery Project is a large-scale, State significant permitted development that will deliver new, firmed clean energy generation into the National Electricity Market within the next three years. By pairing and grid forming battery storage technology, the project will support system strength, reliability and security for the region, while ensuring the lowest-cost generation available (solar) can be captured and dispatched in line with demand.

The project (SSD-29508870) was approved by the NSW Independent Planning Commission (IPC) on 16 August 2024 with development consent conditions and incorporates a large scale solar photovoltaic (PV) electricity generation facility, along with battery storage and associated infrastructure, including the construction of a temporary accommodation facility (hereafter referred to as the 'approved project'). The approved project has an indicative capacity of around 600 megawatts (MW) and includes a centralised battery energy storage system (BESS) of up to 600 MW for a two-hour duration (1,200 MWh).

The project site is approximately 15 kilometres (km) south-east of Dunedoo, in the Central-West Orana (CWO) region and within the CWO Renewable Energy Zone (REZ) of New South Wales (NSW), in the localities of Birriwa and Merotherie. It is situated within the Mid-Western Regional Local Government Area (LGA). Part of the approved transport access route to the project site via the Castlereagh Highway is situated within the Warrumbungle Shire LGA.

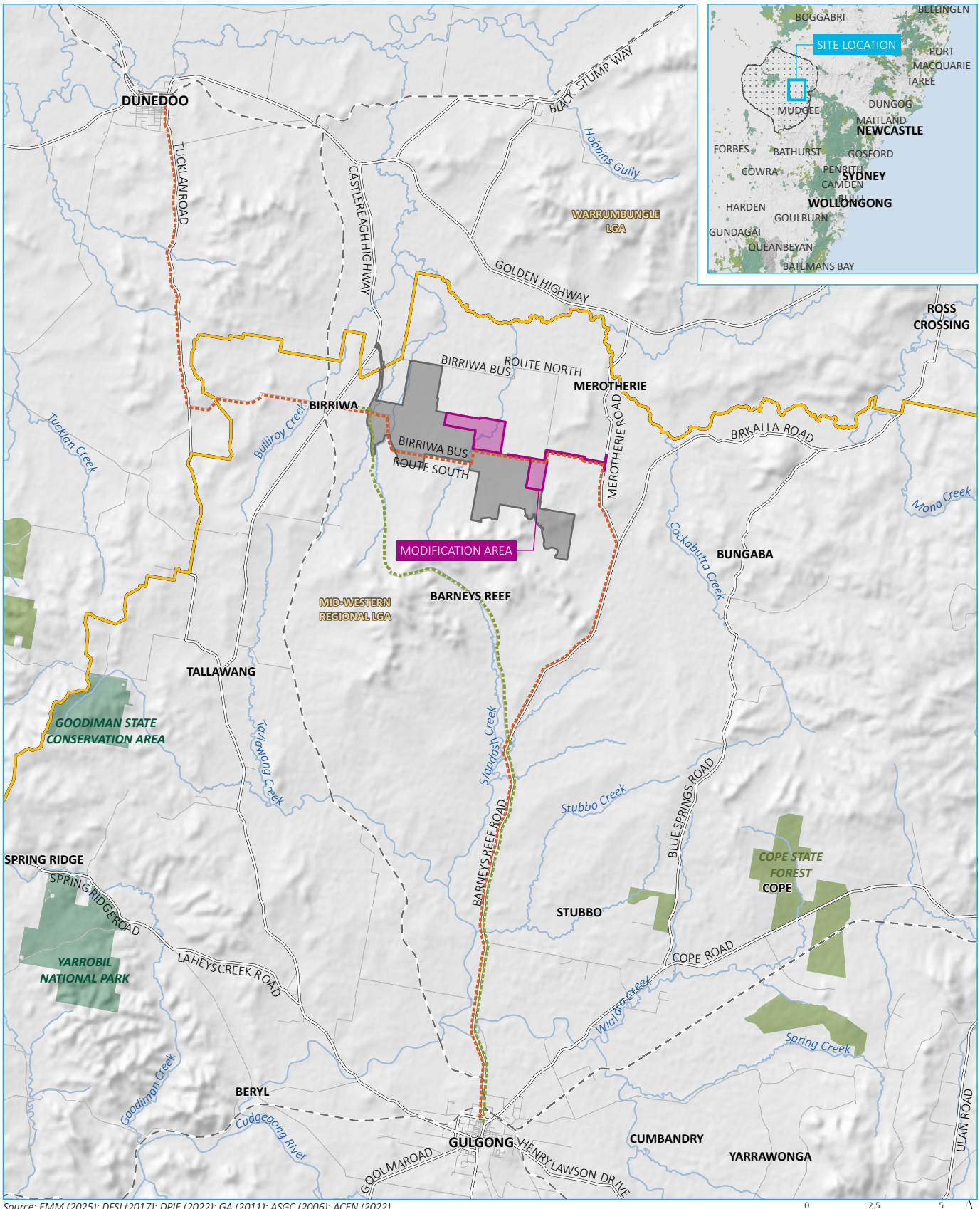
The REZ will initially unlock at least 4.5 gigawatts (GW) of new network capacity by the late-2020s, and around 6 GW by 2038. New transmission infrastructure will enable generators participating in the REZ to export electricity to the rest of the network. The key objective of the approved project is to deliver much needed renewable energy into NSW. In doing so, the project will play an important part in achieving the objectives of the CWO REZ. It will also provide significant economic stimulus to the region through employment opportunities and associated social and economic benefits.

ACEN Australia Pty Ltd (ACEN) is seeking approval to modify development consent SSD-29508870 to include additional lots, an alternative access route and associated upgrade to part of the existing BBRS, an increase in capacity of the approved temporary accommodation facility, and an increase in the storage capacity and duration of the BESS (herein referred to as the modification, Mod 1).

An application to modify SSD-29508870 and an accompanying Modification Report (EMM 2025a) was submitted to the NSW Department of Planning, Housing and Infrastructure (DPHI). The Modification Report was subsequently publicly exhibited between 15 August 2025 and 29 August 2025.

DPHI received 68 public submissions including submissions from individuals and organisations. Thirteen government authorities also provided advice on the project modification, including 11 from NSW regulatory agencies and two from the local councils.

This Modification Submissions Report has been prepared to respond to the matters raised in these submissions, in accordance with section 59(2) of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation).



Source: EMM (2025); DFSI (2017); DPIE (2022); GA (2011); ASGC (2006); ACEN (2022)

0 2.5 5 km
GDA 1994 MGA Zone 55

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KEY

- Modification area
- Approved project area

Existing environment

- Rail line
- Major road
- Minor road
- Named watercourse
- Local government area
- Central West Orana Renewable Energy Zone (refer to inset)
- NPWS reserve
- State forest

Central West Cycle (CWC) Trail

- CWC main route- Gulgong to Dunedoo
- CWC alternate route- Slap Dash Creek side trail

Regional context

Birriwa Solar and Battery Project- Modification
Submissions Report
Figure 1.1

EMM
creating opportunities

1.2 Modification overview

The key components of the proposed modification are summarised below, and the modification area is shown in Figure 1.2:

- Increase the project area and development footprint to include three additional lots (Lot 11/DP 750755, Lot 40/DP 750755, Lot 60/DP 750755) and the remaining part of Lot 34/DP 750755, allowing for additional land to be used for solar generation, BESS, and associated ancillary infrastructure, as needed. Modifying the project area and development footprint across additional neighbouring lots will enable flexibility in design and construction, optimisation of the solar array and BESS layout, and will allow sufficient space for maintenance.

- Increase the storage capacity and duration of the BESS from up to 600 MW for a two-hour duration up to 900 MW for a four-hour duration. The additional capacity will allow the project to increase its energy storage potential, providing additional firming support and greater network system strength.

- Increase the project area and development footprint to allow for an upgrade to part of the existing Birriwa Bus Route South Road from the Golden Highway via Merotherie Road, for use as an alternative access route. It also includes a public road crossing along Birriwa Bus Route South to allow construction and operation traffic to access different areas of the project with limited impacts on Birriwa Bus Route South. This upgrade will enable access to the project for the purpose of constructing and operating the approved temporary accommodation facility, as well as the BESS. Oversize over-mass vehicles will continue to access the project area via the approved primary access point (i.e. Castlereagh Highway-Barneys Reef Road-Birriwa Bus Route South). The Network Operator is currently upgrading parts of Merotherie Road between the Golden Highway and the Merotherie Hub as part of the approved CWO REZ Transmission Project (SSI-48323210). This upgrade presents an opportunity for the project to use the future upgraded road as an alternative access route to the project.

- Increase the approved project's accommodation facility capacity from 500 workers to 650 workers, within the approved accommodation footprint (up to an additional 150 workers will reside at the accommodation facility during peak construction periods). The anticipated period of construction for the accommodation facility will be over a period of approximately 3 to 7 months (10 to 28 weeks) within a four-year construction window for the project. Note, this construction period will be determined once a supplier and construction contractor has been selected and contracts executed.

- Amend the schedule of lands to include three additional neighbouring lots.

- Increase the total number of daily vehicle movements to and from the site during pre-construction and construction, from 120 to 156 'daily heavy vehicle trips', split between the approved access via Barneys Reef Road and the proposed alternative access via Merotherie Road.

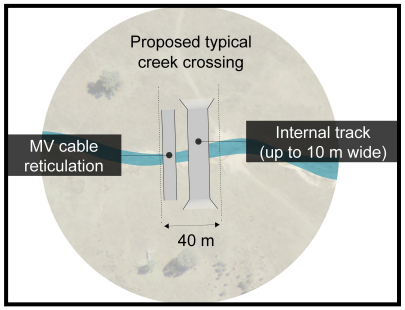
The detailed description of the modification is described in Chapter 3 and Appendix A of the Modification Report (EMM 2025).

KEY

- Modification area
- Modification development footprint
- Vegetation to be retained
- Indicative secondary access point
- Indicative internal access track
- Proposed extension for operational infrastructure area including substation, operational facility and BESS
- Aboriginal heritage site (to be avoided)
- Aboriginal heritage site (to be salvaged/ managed)
- Potential public road crossing location
- Potential creek crossing point (refer to inset below)

Existing environment

- Dwelling not associated with the project
- Dwelling associated with the project
- Dwelling not associated with the project (EnergyCo building)
- Major road
- Minor road
- Named watercourse
- Central West Cycle (CWC) Trail main route- Gulgong to Dunedoo
- Cadastral boundary



Modification area

Source: EMM (2025); DCSSS (2024); DFSI (2017, 2023, 2024); GA (2011); ACEN (2024); OzArk (2025)

0 0.5 1 km

GDA 1994 MGA Zone 55

N

Birriwa Solar and Battery Project - Modification Submissions Report
Figure 1.2

EMM creating opportunities

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1.3 Purpose of this report

ACEN received correspondence from DPHI on 4 September 2025 requiring responses to the matters raised in the submissions on the Modification Report (EMM 2025). Accordingly, this Modification Submissions Report has been prepared by EMM Consulting Pty Limited (EMM) in accordance with the *State significant development guidelines – preparing a submissions report* (DPHI 2024a) (Submissions Report Guidelines). The purpose of this report is to consider and respond to submissions made by government agencies, organisations, and the general public on the proposed modification.

Following lodgement of this Modification Submissions Report, DPHI will prepare its assessment report, considering the submissions received, and the applicant's response to these submissions. The Minister for Planning and Public Spaces is declared to be the consent authority for the modification under Section 4.5(a) of the EP&A Act by operation of section 2.7 (3) of the Planning Systems SEPP which states:

> (3) The Independent Planning Commission (IPC) is declared, under section 4.5(a) of the Act, to be the consent authority in respect of an application to modify a development consent that is made by a person who has disclosed a reportable political donation under section 10.4 of the Act in connection with the modification application.

The Applicant has not disclosed a reportable political donation and hence the Minister is declared to be the consent authority for the project modification.

2 Analysis of submissions

2.1 Summary of submissions

Following the public exhibition of the Modification Report in September 2025, 68 public submissions were received by DPHI, comprising 57 submissions from individuals and 11 submissions from organisations.

- Thirteen government authorities provided advice on the proposed modification, including 11 NSW regulatory agencies and two local councils.
- A submission register is provided in Appendix A of this report, which summarises all submissions received. Submissions are available to view on the NSW Government's Major Projects website at:

  Birriwa Solar - Modification 1 | Planning Portal - Department of Planning and Environment

A summary of submissions, including the total number of submissions who oppose, support, advised or commented on the modification, is provided in Table 2.1.

Table 2.1 Summary of submissions

Source	Object	Support	Comment/Advice	Total
Public submissions:				
Public – individual	56	1	-	57
Public - organisation	11			11
Sub-total	67	1		**68**
Government authorities:				
NSW government agencies	-	-	11	11
Local councils			2	2
Sub-total			13	**13**
Total	67	1	13	81

Note: The type of submission has been categorised by DPHI on the major project's website (i.e. object, support and comment).

The following organisations provided submissions on the modification:

1. Save our Surroundings Swan Hill
2. Save our Surroundings Redbank Plains
3. Save our Surroundings Lancefield
4. Save our Surroundings Hay
5. Save our Surroundings Murrumbidgee
6. Save our Surroundings Riverina
7. Save our Surroundings (SOS)

8. Uarbry Tongy Lane Alliance Inc

9. CWO REZist Inc.

10. Central West Cycle Trail Incorporated

11. National Rational Energy Network Inc.

The following State government agencies provided a submission on the modification offering advice:

1. Department of Primary Industries and Regional Development (DPIRD)

2. DPHI - Hazards

3. Department of Climate Change, Energy, the Environment and Water (DCCEEW) – Water NSW

4. DCCEEW – Heritage NSW

5. EnergyCo NSW

6. Conservation Programs, Heritage and Regulation Group (CPHR) of the DCCEEW

7. Transport for NSW (TfNSW)

All government agency submissions provided comments and/or advice on the project, with no objections received. The following agencies acknowledged the modification and did not provide further comment and or did not raise further matters, hence do not require further consideration within this report:

1. DPHI – Crown Lands

2. DPIRD – Fisheries

3. DPIRD - NSW Resources

4. Fire and Rescue NSW

The following councils provided a submission (comment) on the project:

1. Mid-Western Regional Council

2. Warrumbungle Shire Council

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 Submissions Report Guidelines (DPHI 2024a):

1. The project (such as the project study area, the physical layout and design, key uses and activities, timing).

2. Procedural matters (such as the level of quality of engagement, compliance with the Secretary's Environmental Assessment Requirements (SEARs), identification of relevant statutory requirements).

3. The environmental, social or economic impacts of the project (such as amenity, air quality, biodiversity, heritage).

4. The justification and evaluation of the project as a whole (such as consistency of the project with Government plans, policies or guidelines).

5. Issues that are beyond the scope of the project assessment (such as broader policy issues) or not relevant to the project.

Each of these categories have been divided into sub-categories (such as biodiversity, air quality, bushfire, cumulative impacts) and then key matters raised have been further identified within these sub-categories as outlined in Table 2.2.

2.3 Public submissions

2.3.1 Origin of public submissions

Public submissions were analysed by their locality and distance from the modification area. Public submissions (comprising both submissions from individuals and organisations) originated from 38 different locations. Of these 38 locations:

- 16% are from the local area (<5 km from the modification area)
- 43% are from the regional area (5 to 100 km from the modification area)
- 41% comprise broader community interest (>100 km from the modification area).

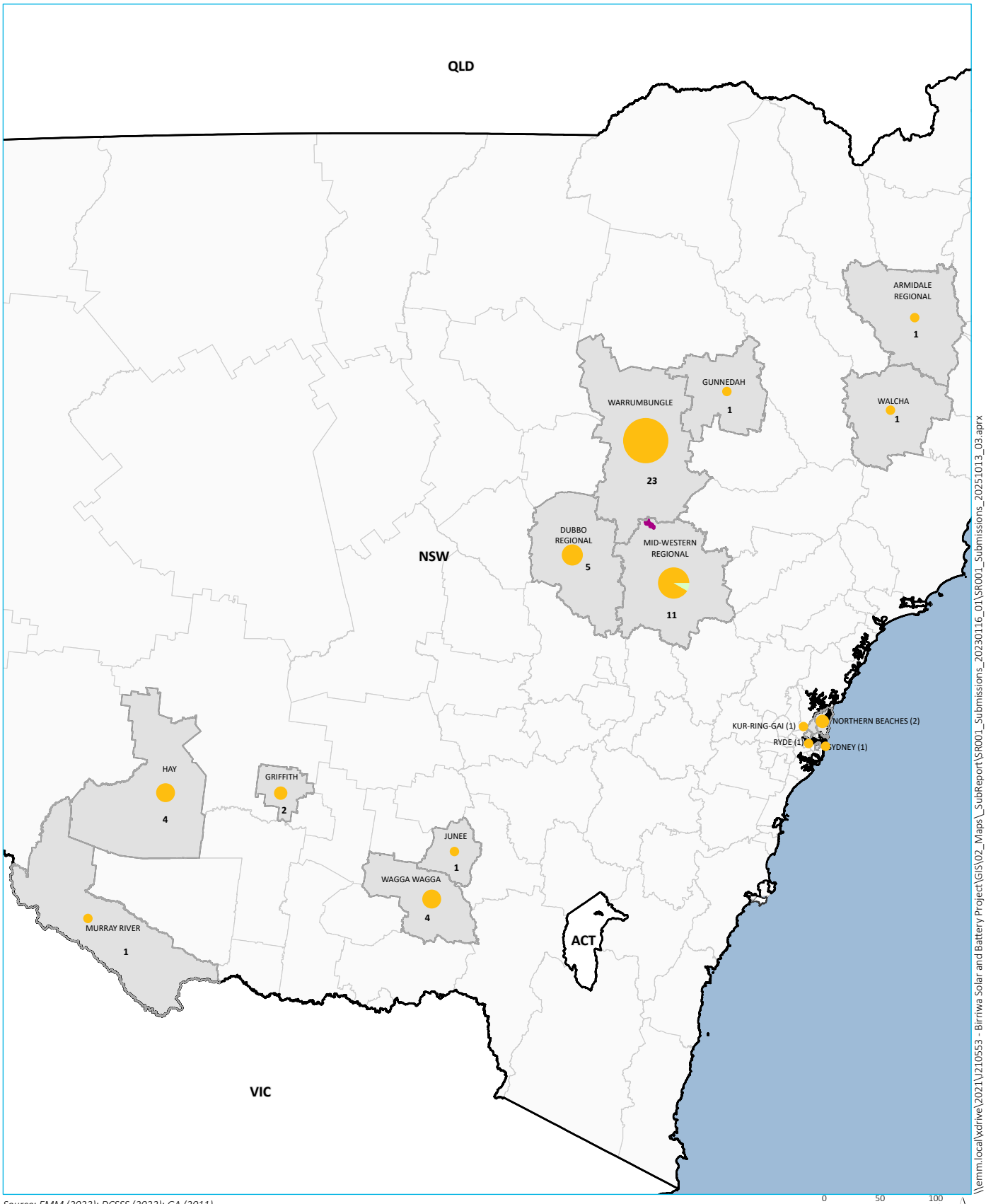
The origin of public submissions is shown in Figure 2.1.

Of the 57 submissions from individuals:

- 19% are from the local area (<5 km from the modification area)
- 42% are from the regional area (5 to 100 km from the modification area)
- 39% comprise broader community interest (>100 km from the modification area).

Of the 11 submissions from organisations:

- 45% are from the regional area (5 to 100 km from the modification area)
- 55% comprise broader community interest (>100 km from the modification area).



Source: EMM (2023); DCSSS (2022); GA (2011)

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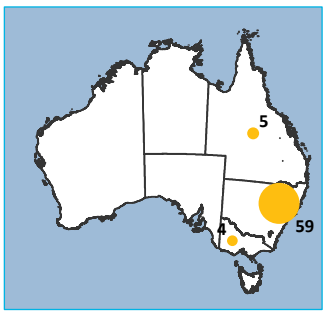


KEY

- Study area
- Local government area - submission provided
- Local government area - no submission provided

Submission type

6 Total number of submissions in area

- Comment
- Object

Origin of public submissions

Birriwa Solar and Battery Project - Modification
Submissions Report
Figure 2.1

EMM creating opportunities

2.3.2 Summary of matters raised in public submissions

A list of the matters raised within the public submissions and where they have been addressed in this report is provided in Table 2.2.

Analysis of submissions shows feedback clustered around four core themes:

1. Land use, environment, and cumulative impacts
2. Trust, transparency, and engagement
3. Local community impacts and services
4. Broader context and governance

Within these themes, the key matters most raised in public submissions include:

- impacts to agricultural land and productivity (35% of submitters)
- cumulative impacts associated with the project and REZ (26% of submitters)
- issues beyond the scope of this project (broader concerns about renewables and REZs (25% of submitters)
- the level of engagement, consultation and transparency, and social licence of the Applicant (25% of submitters)
- impacts to biodiversity (threatened species, habitat and general biodiversity concerns) (22% of submitters)
- contamination (22% of submitters)
- local community impacts (emergency services, mental health, safety, sense of community) (22% of submitters)
- calls for Federal intervention or consideration as a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (22% of submitters)
- general objections to the project and modification (22% of submitters)
- dissatisfaction with the modification process (19% of submitters)
- visual amenity impacts (18% of submitters)
- traffic and transport impacts (15% of submitters).

Table 2.2 List of matters raised in public submissions

Key matter	Sub-category	Number of individual submissions	Number of organisation submissions	Percentage of total submitters	Relevant section where submission is addressed
The project					
General objection	General	14	1	22%	5.2.1
Accommodation facility size	Project description	7	1	12%	5.2.2
Site security fencing	Project description	1	-	1%	5.2.5
Central West Cycle Trail	Alternatives	0	1	1%	5.2.4
Battery type	Alternatives	1	-	1%	5.2.3
General support	Support	1	-	1%	-
Procedural matters					
Engagement with the community	Engagement	14	3	25%	5.3.1
Federal assessment/EPBC Act	Assessment process	9	6	22%	5.3.2
Modification process	Assessment process	13	-	19%	5.3.3
The environmental, social, or economic impacts of the project					
Agricultural land and productivity	Land and soil	20	4	35%	5.1.1
Cumulative impacts	Cumulative	14	4	26%	5.1.2
Threatened species and habitat	Biodiversity	9	6	22%	5.1.3i
Contamination impacts	Hazards	13	2	22%	5.1.4i
Social and community impacts	Social	13	2	22%	5.1.5
Landscape and visual amenity	Visual	11	1	18%	5.1.6
Increase in traffic and associated impacts	Traffic and transport	9	1	15%	5.1.7i
Merotherie Road	Traffic and transport	9	-	13%	5.1.7ii
Property values, insurance, local economy	Economics	8	-	12%	5.1.8i
Hazards and risks	Hazards	6	2	12%	5.1.4ii
Waste	Waste	4	-	6%	5.1.9
Local waterways and dams	Water	2	1	4%	5.1.10
Tourism	Economic	2	1	4%	5.1.8ii
Biosecurity	Biodiversity	2	-	3%	5.1.3ii
Noise impacts	Noise and vibration	1	-	1%	5.1.11
Bushfire	Bushfire	1	-	1%	5.1.12
Central West Cycle Trail (CWCT)	CWCT	-	1	1%	5.1.13

Key matter	Sub-category	Number of individual submissions	Number of organisation submissions	Percentage of total submitters	Relevant section where submission is addressed
The justification and evaluation of the project as a whole					
General justification and evaluation of the project	Justification	7	2	13%	5.4
Issues that are beyond the scope of the project					
Broader concerns with renewable energy and REZs	Beyond the scope	13	4	25%	5.5

A graphical representation of the number of submissions received in relation to each key matter is provided in Figure 2.2.

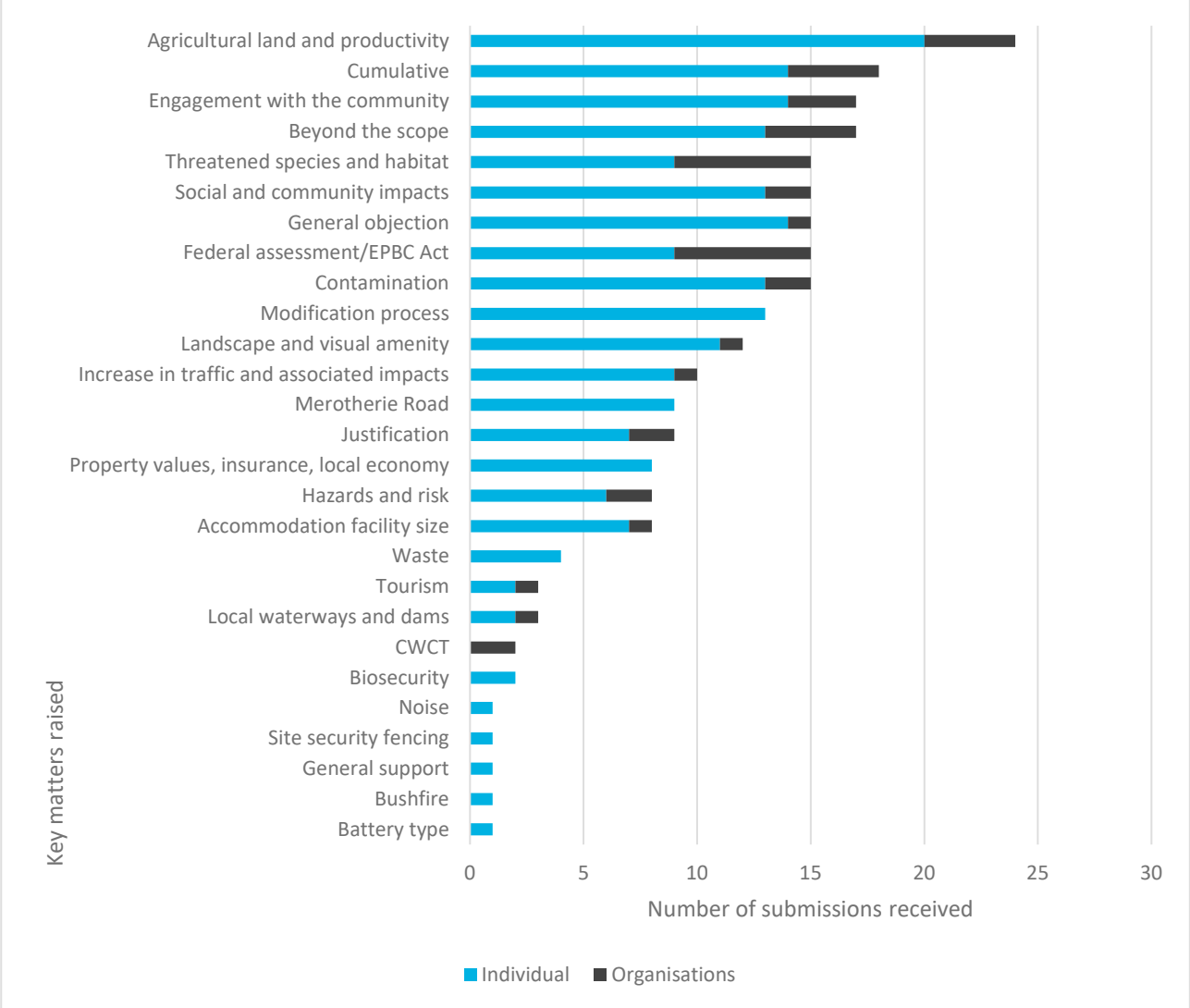


Figure 2.2 Key matters raised in public submissions

3 Actions taken since exhibition

3.1 Consultation

Since the exhibition of the Modification Report in August 2025, ACEN continues to engage with stakeholders including public authorities, government agencies, the local community and neighbouring landholders, in response to matters raised relating to the project.

An overview of the engagement activities carried out during and after the public exhibition of the Modification Report is provided in Table 3.1, with further detail in response to public submissions relating to community engagement in Section 5.3.1.

Table 3.1 Summary of engagement following submission of the Modification Report

Community member/group	Engagement method and date	Key aspects discussed	Response to key aspects including section where matter has been addressed in this report
Mid-Western Regional Council	In person meeting 10 September 2025 18 November (video conference) 28 November and 5 December 2025 (phone calls)	Timing of response to Council's submission, update on traffic matters including discussions with CWCT, discussions to facilitate funding for maintenance of Barneys Reef and Merotherie Roads to assist Warrumbungle Shire Council (WSC), and a voluntary planning agreement (VPA) sharing with WSC.	Not applicable
Network Operator	On-going (fortnightly trilateral meetings)	Discussion on Merotherie Road maintenance (wear and tear) activities and responsibilities.	Not applicable
EnergyCo	On-going (fortnightly trilateral meetings)	Project updates, including interaction of the project with works relating to the Merotherie Energy Hub.	Not applicable
DPHI	8 September 2025 and 13 September 2025 15 December (video conference)	Discussion regarding general submissions received and approach to delivery. Pre-lodgement meeting	Not applicable
Registered Aboriginal Parties (RAPs)	Email on 19 August 2025 In person meeting 10 December 2025	Notification of ACHAR being on public display with Modification Report. Birriwa update and Heritage Management Plan consultation	Not applicable
CWCT	27 August 2025 (in person) 19 September 2025 (in person) 10 December 2025 (in person) Multiple ongoing calls and emails	ACEN's commitment to address CWCT issues in line with the commitments of the modification.	Section 5.1.13

Community member/group	Engagement method and date	Key aspects discussed	Response to key aspects including section where matter has been addressed in this report
Non-associated residents	February 2024 to December 2025 (in person meetings, community information sessions, phone calls, emails and letters)	Project information, potential impacts, timing, assessment process & neighbour agreements.	Detailed engagement with non-associated residents has been provided separately to DPHI for privacy reasons
CPHR	3 April 2025 (meeting) 11 April 2025 (letter) 13 May 2025 (phone call) 18 November 2025 (meeting)	Meeting held on 2 April 2025 between EMM and CPHR to introduce the modification and agree on an approach to the BDAR. Letter to DPHI and CPHR regarding the format of the BDAR. Phone call with CPHR and EMM regarding expectations for the combined BDAR. Meeting held on 18 November 2025 between EMM, ACEN, DPHI and CPHR to discuss the approach to CPHRs key submission comments.	Section 4.10 and Appendix E
Heritage NSW	8 October 2025 (video conference) 18 November 2025 (email)	Discussed approach to submission advice. Shared updated ACHAR and associated documents.	Section 4.6
Warrumbungle Shire Council	3 November 2025 (video conference) 7 November 2025 (video conference) 28 November 2025 (video conference) 9 December (email + letter attachment) Multiple ongoing emails	Discussion on Merotherie Road and Barneys Reef Road design specifications, maintenance, wear and tear (including non-visible damage) and responsibilities.	Section 4.8

3.2 Further technical assessments and revisions

The Aboriginal Cultural Heritage Assessment Report (ACHAR) and the Historical Heritage Assessment Report (HHAR) for the modification have been revised in response to advice received from Heritage NSW and are included in Appendix C and Appendix D, respectively.

The Biodiversity Development Assessment Report (BDAR) has been revised in response to advice received within CPHR's submission, and is included in Appendix E. Following the revision of the BDAR, minor adjustments to the modification development footprint and modification area have been reflected across all BDAR figures and the figures within this report including Figure 1.2 (modification area). The changes include (refer to Figure 3.1):

1. a small increase to the footprint on the western side of Lot 11 DP 750755 and Lot 40 DP 750755 to encompass Crown Land

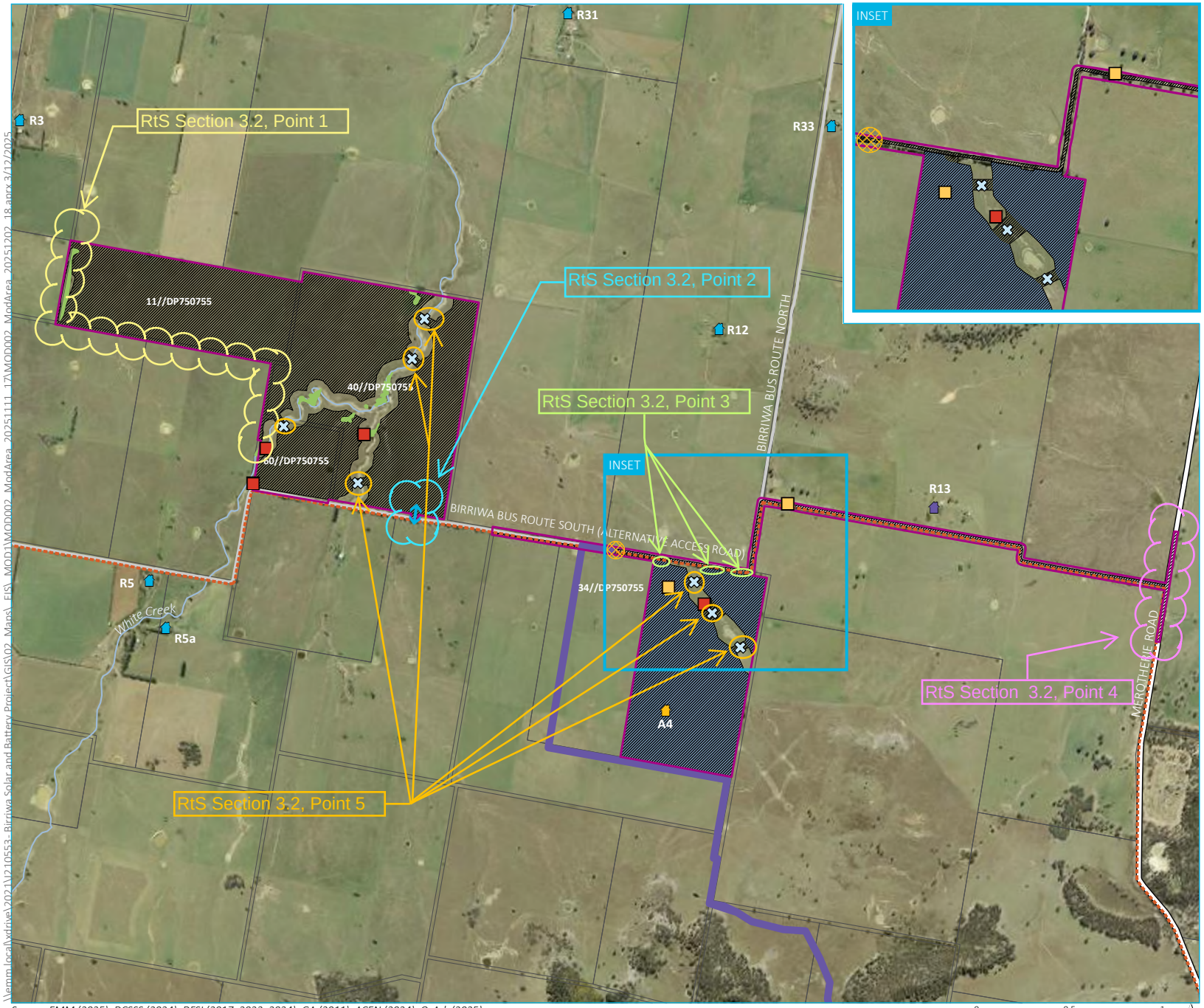
2. a potential public road crossing has been included in the development footprint at the south-eastern corner of Lot 40 DP 750755

3. a small area that lies south of the Birriwa Bus Route South Road (BBRS) within Lot 34 DP 750755 has been included in the development footprint

4. the Merotherie Road and BBRS intersection has been included within the development footprint, to account for required upgrade works

5. the potential creek crossing points have been included in the development footprint.

These areas have now been included and assessed within the BDAR (Section 4.10.10).

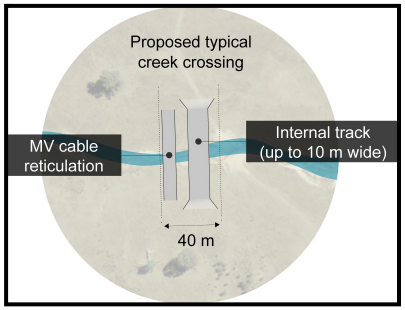


KEY

- Modification area
- Modification development footprint
- Vegetation to be retained
- Indicative secondary access point
- Indicative internal access track
- Proposed extension for operational infrastructure area including substation, operational facility and BESS
- Aboriginal heritage site (to be avoided)
- Aboriginal heritage site (to be salvaged/ managed)
- Potential public road crossing location
- Potential creek crossing point (refer to inset below)

Existing environment

- Dwelling not associated with the project
- Dwelling associated with the project
- Dwelling not associated with the project (EnergyCo building)
- Major road
- Minor road
- Named watercourse
- Central West Cycle (CWC) Trail main route- Gulgong to Dunedoo
- Cadastral boundary



Modification area - noted minor changes

Source: EMM (2025); DCSSS (2024); DFSI (2017, 2023, 2024); GA (2011); ACEN (2024); OzArk (2025)

0 0.5 1 km

GDA 1994 MGA Zone 55

N

Birriwa Solar and Battery Project - Modification Submissions Report
Figure 3.1

EMM creating opportunities

4 Response to agency and council advice

4.1 Introduction

Thirteen government authorities (comprising 11 NSW government agencies and two local councils) provided advice on the proposed modification. Each of the matters raised by government authorities are provided in grey boxes in the sub-sections below, followed by a response to the comment or advice.

The submissions received from these agencies and councils that required no further consideration are outlined in Table 4.1.

Table 4.1 Government agency submissions not requiring a response

Agency	Submission	Response
DPHI – Crown Lands	28 August 2025 (reference 25/07992#07) DPHI - Crown Lands noted that the areas added to the project footprint do not contain Crown land, roads or waterways. However, Crown roads adjoin the added Lots 11 and 40 DP750755 to the project site. While no direct impact is anticipated, DPHI - Crown Lands recommended that appropriate measures are taken to ensure no encroachment or unintended impacts occur on the adjoining Crown roads.	Crown Land's submission did not contain any matter for further consideration in this report. The items outlined in the submission are noted.
DPIRD – Fisheries	18 August 2025 (reference C25/686) DPIRD – Fisheries recommended the following conditions of consent: 1. The design of the potential creek crossings or proposed typical creek crossing (including internal tracks and MV cables) should be in accordance with the document *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries 2003)* and the *Policy and Guidelines for Fish Habitat Conservation and Management (Update 2013).* 2. DPIRD Fisheries policy advocates the use of terrestrial or riparian buffer zones as per the *Policy and Guidelines For Fish Habitat Conservation and Management* (Updated 2013) available on the Department's website.	The conditions recommended are included in the current conditions of development consent SSD 29508870 (condition B33(g)) and no further consideration is required in this report.
Fire and Rescue NSW (FRNSW)	26 August 2025 (reference D25/97100) FRNSW noted all recommendations made previously are still applicable to this facility. FRNSW submitted no additional comments or recommendations for consideration, nor any requirements beyond that specified by applicable legislation at this stage.	FRNSW's submission did not contain any matters for further consideration in this report.
DPIRD – NSW Resources	28 August 2025 (reference D25/84318) DPIRD – NSW Resources stated that it has no specific comments in relation to the *Mining Act 1992* considerations and raised no issues regarding the modification. NSW Resources advised the Proponent to actively monitor the MinView map viewer for mining title changes that may interact with this modification.	DPIRD – NSW Resource's comments are noted.

4.2 DPIRD – Agriculture and biosecurity

4.2.1 Mitigation measures – biosecurity management

Risks to agricultural production on the modified site and surrounding agricultural land due to the project are acknowledged as concerning the previously raised issues of biosecurity breach, groundcover management, soil erosion and land use conflict.

The matters raised in our previous correspondence on the project's EIS, Response to Submissions (OUT24/384) and Draft Conditions of Consent (OUT24/4652) are relevant to the modified project site.

Appendix C of the Modification Report mitigation measures relating to agricultural land resources….are supported.

The Department considers that the following specific matters should also be incorporated into the mitigation measures for the modified project for clarity:

- *Biosecurity management issues during and post construction must be assessed in relation to potential agricultural impacts (pests, weeds, and emergency animal disease) including a risk assessment outlining the likely plant, animal, and community risks. The preparation of a Biosecurity Management Plan is recommended as part of the Construction and Operations Environmental Management Plans (C/OMPs). Please refer to DPI's Biosecurity Risk Management in Land Use Planning and Development Guide.*

With reference to mitigation measure LR6 (Appendix B of the modification report), biosecurity management will be managed in accordance with a detailed protocol relating to biosecurity. Specific biodiversity, weed, pest impacts, and protocols relating to emergency animal disease will be included as part of the Biodiversity Management Plan to be prepared for the project, as required by Condition B21 of SSD 29508870. Clause B21(b)(viii) requires that this plan include measures that will be implemented for controlling weeds, feral pests and pathogens.

4.2.2 Mitigation measures – groundcover management

We recommend a Groundcover Management Plan to be prepared as part of the C/OMPs to detail the grazing and biosecurity approaches to the site including pasture establishment and management and weed and pest control measures specific to the suggested sheep grazing in the Modification Report. Further:

- *Groundcover should be maintained at a minimum of 70% to prevent soil erosion. The Groundcover Management Plan should detail the actions and management practices to re-establish pastures and grazing on the land post construction and during operation.*
- *Conversely, where the site will not be used for agricultural purposes, it is reiterated that a minimum of 70% groundcover is maintained to prevent soil erosion via actions described in the groundcover management plan.*

The recommended groundcover management plan, detailing the grazing and biosecurity approaches to the site including pasture establishment and management, weed and pest control measures specific to sheep grazing will be included as part of the project's Soil and Water Management Plan and the Biodiversity Management Plan.

Condition B34 of development consent SSD-29508870 requires the preparation of a Soil and Water Management Plan, which will include measures that could be implemented to retain groundcover and avoid causing any erosion on site (as per condition B33e). A Biodiversity Management Plan will also be prepared for the project, as required by Condition B21, which will describe measures for controlling weeds, feral pests and pathogens.

4.2.3 Mitigation measure – decommissioning depths

To enable continuation of agricultural activities at the end of the project life, the site should be decommissioned to a minimum depth of 500 mm. This will enable the land to return to full production including cropping if required.

ACEN notes the advice from DPIRD relating to decommissioning depths of 500 mm to enable the land to return to full production including cropping, if required.

4.2.4 Mitigation measure – subdivision and dwelling eligibilities

Any subdivision of the site is not to result in additional dwelling eligibilities.

Subdivision of any land within the modification area is not required.

4.3 DPHI – Hazards

4.3.1 Maximum energy storage capacity

The modification describes a 900 MW BESS with a four-hour 'sent out' capacity, implying a total energy storage capacity greater than 3,600 MWh. The Applicant has assumed 966 batteries of 4.6 MWh each, totalling 4,443.6 MWh.

The team acknowledges that round-trip losses and inefficiencies may require the actual energy storage capacity to exceed the 'sent out' value. The Applicant should clearly state the maximum energy that will be stored in the batteries, noting that a condition of consent may be based on this figure or the assumptions used in the area evaluation.

For clarification, ACEN is seeking to modify SSD-29508870 to increase the storage capacity and duration of the BESS from up to 600 MW for a two-hour duration, to up to 900 MW for a four-hour duration (3,600 MWh). The additional capacity will allow the project to increase its energy storage potential, providing additional firming support and greater network system strength.

The proposed registered capacity for the BESS at the point of connection within the modification is 900 MW/4 hours (3,600 MWh). To achieve this, the installed capacity would be oversized to allow for losses in the system and to account for degradation over the life of the project. Based on the battery system considered for concept design, the installed capacity would be 4,444 MWh (966 battery units x 4.6 MWh per unit). However, note this is pending final design and Original Equipment Manufacturer (OEM) selection and could increase by 5-10%.

ACEN therefore request that the condition of consent reflect the proposed registered capacity at the point of connection, rather than the installed capacity. The currently proposed installed capacity, based on the concept design, is 4,444 MWh; however, this is subject to final design selection and therefore likely to change.

4.3.2 Containerised enclosures

The Preliminary Hazard Analysis (PHA) prepared by Sherpa Consulting (Rev 1, 20 July 2022) included a demonstration of area requirements for containerised enclosures, outdoor standalone racks, and a purpose-built buildings. These configurations were therefore considered in the assessment of the originally approved development. However, the current modification report has only addressed the containerised solution and does not demonstrate that outdoor standalone racks or purpose-built buildings can be accommodated within the available area.

The Preliminary Hazards Assessment (PHA) (Sherpa 2022) prepared as part of the EIS assessed a centralised BESS with a capacity of up to 1,000 MW (one hour storage duration, or 1,000 MWh) with three potential battery enclose options (i.e. containerised, outdoor racks, indoor racks within building). For the modification, only the containerised battery enclosure option was considered and assessed within the PHA Addendum (Sherpa 2025) as this is the preferred option for the project.

4.3.3 Future use of associated dwellings

The team is satisfied with the level of analysis with the PHA addendum, noting that the separation distance to the nearest resident is 1,280 m. However, clarification is requested regarding the future use of associated dwellings A4 and A6, given their location is within or adjacent to the BESS area.

Dwelling A4 and A6 are currently uninhabited and are not intended to be habitable. ACEN may consider using the A4 dwelling as a temporary site office. If this is the case, siting of the A4 as site office will be informed with considerations of:

1. battery OEM specified safe stand-off distance and/or clearance requirements; and

2. consequence analysis of battery unit fire, for the final battery system selected for the project.

4.3.4 Land use impact

The DPHI Hazards team are satisfied that radiant heat and toxic products will not affect surrounding land uses, given the separation distances to residential areas. Please note, depending on the outcome of the RFI 2, the team may re-evaluate the land use impact to the surrounding land uses.

It is noted, that DPHI Hazards team are satisfied that radiant heat and toxic products will not affect surrounding land uses, given the separation distances to residential areas. As clarified above, the dwelling A4 and A6 are currently uninhabited and are not intended to be habitable. ACEN may consider using the A4 dwelling as a temporary site office. If this is the case, siting of A4 as a site office will be informed with considerations of:

1. battery OEM specified safe stand-off distance and/or clearance requirements; and

2. consequence analysis of battery unit fire, for the final battery system selected for the project.

4.3.5 Clarifications of the layout

The PHA addendum estimates that the area required for the modified development using containerised batteries is 22.4 ha. However, the PHA addendum does not clearly specify the separation distances used to derive this area estimate.

Furthermore, the DPHI hazards team is uncertain whether the Design Considerations Report was submitted to, or reviewed by, the Department.

The original PHA (Sherpa Consulting, July 2022) presented a concept design comprising 205 batteries spaced at 3.2 m, requiring 9.49 ha – this formed the basis of the original approval. Proportionally scaling this layout to accommodate 966 batteries would require approximately 44 ha, excluding supporting infrastructure. In contrast, the PHA addendum estimates only 22.4 ha. This significant reduction raises questions regarding potential changes to the layout and the separation distances currently being applied.

The DPHI hazards team notes that where the separation distance between battery enclosures is less than 3 m (front-facing), the layout is considered non-standard and requires further justification. It is important to highlight that a 3 m separation is referenced in NFPA 855 as a minimum benchmark. Therefore, any reduction in this distance should be supported by robust evidence, such as results from large-scale fire testing (e.g. conducted in the proposed configuration).

The DPHI hazards team recommends that the Applicant carefully assesses the proposed battery separation distances. In the absence of sufficient supporting evidence for reduced spacing, a conservative approach, particularly in evaluating area requirements, is advised.

The PHA Addendum (PHA 2025) has adequately assessed the proposed battery separation distances based on the current concept design and further clarification is provided below.

The number of battery units required for the proposed capacity (option 1: area B 900 MW/3,600 MWh) equates to 966. This was calculated based on the 1,072 battery units required for the 1,000 MW/4,000 MWh capacity by Entura, who prepared the concept design for the project (refer to Table 4.2 below), i.e. pro rata by a factor 0.9 for the 900 MW/3,600 MWh.

As the exact layout comprising the configuration and clearances between the BESS sub-units is yet to be determined in the detailed design phase for the modification, the required area for 900 MW/3,600 MWh is conservatively assumed to be that required for the 1,000 MW/4,000 MWh (i.e. 640 m x 350 m = 22.4 ha).

Note that the ratio of battery to PCU units is 4:1 for the 1,000 MW/4,000 MWh configuration. Scaling from 1,000 MWh/1,000 MWh is not directly proportionate.

Table 4.2 Summary of containerised BESS options

Power at PoC (MW)	Energy at PoC (MWh)	C-Rating	Footprint (LxW) m	Feeders (6 PCUs)	Feeders (5 PCUs)	BESS containers #	PCU skids #	Total # (PCU+BESS)
1000.04	1003.52	1	380 x 250	43	2	268	268	536
1000.04	2007.04	1	TBC	43	2	536	268	804
1000.04	4014.07	1	640 x 350	43	2	1072	268	1340
1091.40	4004.85	0.5	TBC	43	2	856	428	1284

The full BESS Concept Design Considerations Report (Entura 2022) was not appended to the PHA (Sherpa 2022) or the Addendum PHA (Sherpa 2025) as it was subject to detailed design development and considered confidential in nature. Instead, relevant information and assumptions from the concept design report were incorporated into the PHA and Addendum PHA.

4.3.6 Suitability of Area A

Additionally, the amended PHA evaluates area requirements for area B only and does not assess the suitability of area A for option 2 (600 MW/2,400 MWh).

Two options for the BESS were considered in the Modification Report:

- Option one (preferred): 900 MW (four-hour duration) BESS at lot 34/DP750755. The potential operational infrastructure area for this infrastructure is across the approved area B and into the adjacent modification area.
- Option two: 300 MW (four-hour duration) BESS at lot 34/DP750755 (within the approved area B and into the adjacent modification area) and 600 MW (two-hour duration) BESS at area A.

Option one is the preferred BESS location within area B to achieve 900 MW/3,600 MWh. It is noted that there is an error in the Modification Report (page 13 and 16) where it refers to option two including a 600 MW (*four-hour duration*) BESS at area A. This should read 600 MW (*two-hour duration*) BESS and as approved.

Area A was previously assessed within the PHA prepared for the EIS (Sherpa 2022) for 1,000 MW/1,000 MWh, including relevant hazard and risk considerations. The required area to accommodate the 600 MW/1,200 MWh BESS in area A was not re-assessed in the PHA Addendum (Sherpa 2025) as option one is preferred.

A review of the required area to accommodate 1200 MWh of battery storage in area A is as follows:

- The available land area for area A is 25 ha.
- The area required for 1,000 MWh is 9.5 ha (640 m x 250 m). Please refer to Table 4.2 above. This is a conservative basis (one battery container: one PCS unit ratio).
- It has been assumed that an extra 20% to the footprint area required for 1,000 MWh assessed in the PHA (Sherpa 2022) would be needed.
- Therefore, the area required for 1,200 MWh is approximately 11.4 ha, equivalent to about 45% of area A. Area A has adequate land to accommodate the proposed 1,200 MWh battery storage.

4.4 EnergyCo NSW

Energy Co appear to have reviewed the Amendment Submissions Report (EMM 2023) and supporting Addendum Traffic Impact Assessment (TIA) in Appendix D of the Amendment Submissions Report, instead of the Modification Report (EMM 2025) and the supporting TIA in Appendix H of the Modification Report. Notwithstanding, responses to EnergyCo's submission are provided below.

4.4.1 Cumulative traffic impacts

The Response to Submissions (Rts) and supporting Traffic Impact Assessment (TIA) identify upgrades to Birriwa Bus Route South (BBRS) and intersection works at Barneys Reef Road with the Golden and Castlereagh Highways. These are the same haulage routes and intersections that will be relied upon by the CWO Transmission Line Project.

- *The TIA models Birriwa traffic only, without incorporating concurrent construction traffic from the CWO transmission line and other REZ projects.*
- *Peak construction workforce and vehicle movements are assessed in isolation, creating a risk that congestion, safety issues, and community amenity impacts are understated.*
- *It is unclear if traffic associated with the Birriwa Solar and Battery Project will utilise the proposed alternative access before the intersection of Merotherie Road and the Golden Highway, and the section of Merotherie Road between the Golden Highway and Birriwa Bus Route South is fully upgraded by the Network Operator.*

We recommend an updated cumulative TIA that includes projected traffic volumes from the CWO transmission line and other major REZ developments, and considers traffic generated by the establishment of ancillary infrastructure, to effectively demonstrate the overall cumulative impacts.

A cumulative traffic assessment has been undertaken within the TIA (Section 4.4) and is summarised in Section 6.4.2 of the Modification Report.

As described, the construction of only one project is expected to coincide with the peak construction period of the project in 2029, which is the proposed Sandy Creek Solar Farm. Only the Golden Highway / Merotherie Road intersection has been assessed for cumulative traffic in 2029 with Sandy Creek Solar Farm as there is no other concurrent development traffic anticipated along Merotherie Road or BBRS.

With reference to the CWO REZ Transmission Project (Merotherie Hub), the Traffic and Transport Management Plan (Rev 041) released in May 2025 (ACEREZ 2025) for that project provides a detailed timeline of construction for the Merotherie Energy Hub and Merotherie workforce accommodation facility, which are adjacent to the Birriwa Solar and Battery Project. The construction of the Merotherie workforce accommodation facility is anticipated to fall between the period of October 2025 and 2028 (ACEREZ 2025). At the time of preparing this report, construction of the CWO REZ Transmission Project has commenced as scheduled. As of October 2025, the Network Operator has initiated upgrades to Merotherie Road, which, according to publicly available information, are expected to take approximately 10 months to complete. In addition, it is understood EnergyCo's Merotherie workforce accommodation facility is nearing completion. If the construction timeframe of the Merotherie workforce accommodation facility and Merotherie Energy Hub was to extend, there is a possibility that the peak construction period of the Birriwa Solar and Battery Project may overlap with the Merotherie Energy Hub and workforce accommodation facility development.

In relation to potential cumulative traffic impacts with the CWO REZ Transmission Project, there are three aspects to consider: the Merotherie Road / BBRS intersection, the Golden Highway / Merotherie Road intersection, and the required upgrades along Merotherie Road between the Golden Highway and BBRS.

As discussed in Section 4.4 of the TIA (Appendix H), given that the Network Operator will have completed its activities along BBRS by the time road upgrades are commenced for the Birriwa Solar and BESS Project, there will be no cumulative traffic or impact associated with Merotherie Road/BBRS intersection between the Birriwa Solar and Battery Project and the CWO REZ Transmission Project (Merotherie Energy Hub and Merotherie workforce accommodation facility).

The Golden Highway / Merotherie Road intersection is currently being upgraded by the Network Operator as per the Traffic Management Plan (ACEREZ 2025). Upgrades are expected to be completed in late October 2025[1].

[1] https://media.caapp.com.au/pdf/6KNaIOEP0yAL/c57d1ee4-7fa1-4e2a-9cfe-72bcb4b42b82/Work%20notification%20-%20Merotherie%20Road%20upgrade.pdf

Channelised left and right turn bays will be provided on the Golden Highway. This is the maximum order of turn treatment as per Austroads. Therefore, if construction traffic movements related to the Birriwa Solar and Battery Project were to coincide with construction of the CWO REZ Transmission Project, given this intersection is being upgraded to the highest level of treatment, no further upgrade would be required.

Similarly, in relation to the upgrade of Merotherie Road (between the Golden Highway and BBRS), a 9 m sealed width (3.5 m wide travel lanes and 1 m sealed shoulders on both sides) is proposed to be provided by the Network Operator. This would be sufficient for up to 3,000 daily vehicle volumes according to Austroads road width requirements. Since there will be less than 3,000 daily vehicle volumes when the background traffic, Birriwa Solar and Battery Project traffic and the CWO REZ Transmission Project traffic are considered, no additional upgrade would be required beyond that being undertaken by the Network Operator.

Traffic associated with the project will utilise the proposed alternative access along BBRS during the construction of the accommodation facility, which is anticipated to be in approximately Q2 of 2026 (refer to Section 3.7 of the Modification Report). Hence, this will occur after the intersection of Merotherie Road and Golden Highway, and the section of Merotherie Road between the Golden Highway and BBRS is fully upgraded by the Network Operator. Work is expected to be completed in August 2026[2].

4.4.2 Road upgrade responsibilities

The RtS indicates sealing and widening of BBRS and intersection upgrades as mitigation. However, we would like to request clarification on whether these are to be delivered solely by the Birriwa Solar and Battery Project or whether reliance is assumed on works by EnergyCo or others.

As detailed in Section 6.4.2 vi (road upgrades) of the Modification Report, as part of the modified project ACEN will undertake the following:

- Upgrade the Merotherie Road/BBRS intersection, as per the requirements of Mid-Western Regional Council.
- Upgrade BBRS between Merotherie Road and the alternative site access, as per the requirements of Mid-Western Regional Council.
- Implement mitigation measures to ensure cyclist safety along BBRS.
- Prepare and implement a construction TMP including a Driver Code of Conduct in accordance with the project.

4.4.3 Social impacts and workforce accommodation

The social impact assessment (SIA) highlights the benefits of the expanded workforce accommodation facility (up to 1,000 workers), reducing housing pressure and commuting trips. While this is positive, the SIA does not consider cumulative workforce numbers across concurrent REZ projects. Without a coordinated approach, there remains potential strain on local services (health, policing, emergency responses) and reputational risks if communities perceive a single wave of disruption from multiple projects.

We recommend the inclusion of cumulative social impacts in the SIA, particularly workforce accommodation, local services, and amenities along shared haulage routes.

The social impact assessment (SIA) is appended to the modification report at Appendix K. The SIA considers cumulative impacts associated with the increase in workforce numbers across concurrent REZ projects (refer to

[2] https://media.caapp.com.au/pdf/6KNaIOEP0yAL/c57d1ee4-7fa1-4e2a-9cfe-72bcb4b42b82/Work%20notification%20-%20Merotherie%20Road%20upgrade.pdf

Chapter 8 and Attachment B of the SIA). In addition, during ongoing project progress meetings ACEN and EnergyCo have discussed cumulative impacts and have worked together to address some of these impacts including health and safety, while coordinating neighbour responses.

4.4.4 Coordination and governance

The RtS demonstrates that multiple REZ projects will use overlapping infrastructure, workforce accommodation, and local services. Without coordinated planning, there is a risk of duplicated works, community distrust, and gaps in emergency responses.

Recommendation: Consider the establishment of a joint working group between ACEN, EnergyCo, and other REZ proponents, focused on:

- *Traffic and haulage scheduling*
- *Workforce accommodation and service demand management*

Cumulative emergency evacuation planning

ACEN acknowledges this recommendation and as indicated in Chapter 8 of the SIA and Table 6.17 of the Modification Report, ACEN recognises the NSW Government and other proponents present in the area play a role in effectively managing cumulative impacts on communities. ACEN has been working with EnergyCo and other key stakeholders and is keen to continue taking a central role in coordinating these discussions with all key stakeholders.

4.5 DCCEEW – Water

4.5.1 Quantification of maximum water take

Recommendation:

The DPHI should seek from the proponent quantification of the maximum water take during construction and operation, and demonstration sufficient entitlement can be obtained to account for the take or identify an exemption which applies.

Explanation:

The proposal states that water will be sourced from a variety of sources, including third party suppliers, farm dams, existing bores, new bores or from the Cudgegong River, however it does not include assessment of any water supply infrastructure or an indication of any water supply agreements. The proponent also suggests that take from the Cudgegong River downstream of Windemere Dam is a possible water supply option, however water take is not quantified.

i Water demand

The maximum water demand for construction and operation of the project is provided in Section 4.5.1 of the Amendment Submissions Report (EMM 2023) for the approved project and in Section A.3.3 of the Modification Report for the proposed modification. A summary of approved and proposed water demand is provided in Table 4.3.

The increased project area and capacity at the accommodation facility is expected to result in a 21% increase in the total water demand during construction to approximately 392 ML. No change in operational water demand is expected as a result of the proposed modification.

Table 4.3 Summary of water demands for approved project and proposed modification

Water use	Approved project		Proposed modification	
	Construction (28 month period)	Operations (30 year period)	Construction (28 month period)	Operations (30 year period)
Accommodation facility	105 ML	–	137 ML	–
Solar and BESS	218 ML	225 ML	255 ML	225 ML
Total	**323 ML 138 ML/year**	**225 ML 8 ML/year**	**392 ML 168 ML/year**	**225 ML 8 ML/year**

ii Water supply options

As detailed in Section 6.6.3 of the Modification Report, the water supply options being investigated that are available to the project to meet the required demand include the those listed below. Other options may be investigated/become available.

1. Purchase water from commercial suppliers of treated wastewater, trucked to the site.
2. Source the water from the regulated Cudgegong River (downstream Windemere Dam) – a water access licence (WAL) would need to be established, and permanent water entitlement or temporary allocation purchased from the market. In addition, a water supply works approval would need to be granted to install the necessary pump/pipe and infrastructure.
3. Source water from the existing farm dams within the study area for non-potable construction purposes, to minimise the use of imported water and in accordance with the harvestable rights provisions. There is likely to be limited water supply and security of supply associated with this option.
4. Use recycled water where practicable from other industrial facilities, such as concrete batching plants in the region.
5. Source water from existing groundwater bores via purchasing WAL entitlement or allocation available on the market or entering into an agreement with relevant licence holders. In addition, a new or amended existing water supply work approval would need to be granted to take water from an existing groundwater bore.
6. Install new groundwater bores within or near to the project site and purchase a WAL entitlement or allocation from the market to use this water for the project. In addition, a new water supply work approval would need to be granted to install a new groundwater bore.
7. A combination of the above options.

Further investigation into the feasibility of each of the potential water sources, such as water quality and volume requirements for specific uses and locations, will be undertaken during continued development of the detailed project design and detailed construction planning, in consultation with suppliers, licence holders, as well as with Mid-Western Regional Council for opportunities regarding Gulgong Water Treatment Facility.

Should any WAL's be required, these will be secured by the appropriate party, post approval.

A summary of the existing tradeable entitlement within the surface water and groundwater sources in the vicinity of the project that may potentially be targeted for water supply, sourced from the *NSW Water Register* (WaterNSW 2025), are presented in Table 4.4. The maximum water demand of around 170 ML/year during construction represents between 0.2% and 3% of the total share component available in each water source,

which indicates there is sufficient depth in the water market to account for the likely volume required for water supply.

Table 4.4 Summary of existing water entitlement available

Water sharing plan	Water source	Access licence category [1]	Number of licences	Total share component [2]
Macquarie and Cudgegong Regulated Rivers Water Source 2016	Macquarie and Cudgegong Regulated Rivers Water Source [3]	Regulated river (general security)	128	18,520 unit shares
		Regulated river (high security)	83	17,913 unit shares
NSW Murray Darling Basin Fractured Rock Groundwater Sources 2020	Lachlan Fold Belt MDB Groundwater Source	Aquifer	1,069	74,204.7 unit shares
NSW Murray Darling Basin Porous Rock Groundwater Sources 2020	Sydney Basin MDB Groundwater Source	Aquifer	39	11,088 unit shares
Macquarie-Castlereagh Groundwater Sources 2020	Talbragar Alluvial Groundwater Source	Aquifer	21	5,355 unit shares

1. Only access licence categories relevant to the project have been shown.
2. Where entitlement is expressed as 'unit shares', it represents shares in the water made available to that licence category. Water made available is a function of the state of the water resource and is climate dependent. Generally, in any given year, not more than 1 ML/unit share will be made available.
3. Entitlement shown is for the Cudgegong River (water management zone known as "That Part of the Water Source Upstream of the Upper Limit of Lake Burrendong")

4.5.2 Review of the dams/structures

Recommendation:

The DPHI should seek from the proponent a review of the dams/structures proposed that will capture runoff.

Explanation:

The proposal states that water may be sourced from dams on site, but has not listed which existing dams or provided locations, capacities or an assessment against any exclusions or exemptions from water licensing requirements. To meet an exemption, they need to be sized consistent with best practice for the purpose of the dam e.g. a dam to capture runoff from an upstream disturbed area needs to be sized according to industry standards. Where a dam is capturing runoff from an undisturbed catchment it will not meet an exclusion.

The dam capacity of dams/structures on minor streams (first and second order streams) need to be considered for whether they are within the Maximum Harvestable Rights Dam Capacity (MHRDC) or satisfy an exemption. Water holding structures on minor streams that are sized larger than the industry standards for the runoff capture need to be either:

1. *constructed to prevent runoff capture such as a turkeys nest dam*
2. *need to be considered within the MHRDC or*
3. *considered for licensing.*

Dams/structures constructed on third order or higher order streams are subject to licensing requirements for the water take (not the dam size). Where water is captured in these dams licensing needs to be considered whether it is later pumped out and back into the system.

The review of dams/structures proposed that will capture runoff will be established during detailed design and as part of the water management strategy for the project. Any runoff captured by dams that do not meet an applicable exemption from water licensing requirements under the Water Management (General) Regulation

2025 (WM Regulation) or are not considered under harvestable rights provisions will require licensing. If required, surface water take will be authorised under a WAL held in the relevant unregulated river water source and any relevant water supply work approvals required.

4.5.3 Water access licence

Recommendation:

The DPHI should ensure the proponent acquires a water access licence (WAL) to account for the maximum predicted water take for construction and operation activities unless an exemption applies under the Water Management (General) Regulation 2018.

Explanation:

Under the Water Management Act 2000, if groundwater is intercepted a WAL must be obtained prior to any water take occurring unless an exemption under the Water Management (General) Regulation 2018 applies. An exemption may where the groundwater take during construction or operation is less than or equal to 3 ML per water year (cl 7, sch 4 of WM Reg). To claim this exemption certain requirements must be met, such as:

- *The person claiming the exemption keeps a record of the water take under the exemption and provides this to the Minister within 28 days of the end of the water year; and*
- *The records are kept for 5 years.*

As part of the water supply investigations being undertaken by ACEN, should any WALS be required, these will be secured by the appropriate party, post approval. Alternatively, ACEN will apply for a zero share WAL in each applicable water source and acquire permanent entitlement or temporary allocation via the water trading market to account for the maximum predicted water take requirements for construction and operation of the project. Alternatively, ACEN will apply for a zero share WAL in each applicable water source and acquire permanent entitlement or temporary allocation via the water trading market to account for the maximum predicted water take requirements for construction and operation of the project.

As discussed in Section 6.6.3 of the Modification Report, no incidental groundwater interception is expected to occur during construction of the project as the deepest infrastructure proposed to be installed is likely to be above the regional groundwater system. Any localised interception of groundwater will be monitored, recorded and reported appropriately in accordance with the requirements of the WM Regulation. Where groundwater take exceeds 3 ML/year, the groundwater take will be authorised under a WAL held in the relevant groundwater source.

4.5.4 Potable water requirements

Recommendation:

The DPHI should request the proponent to quantify potable water requirements for construction and operation and identify a viable supply is available.

Explanation:

Quantification and source of potable water have not yet been identified. Confirmation of a viable supply of potable water is required pre-determination, not post approval as suggested by the proponent. Supply of potable water should not be assumed available due to the location of the project and limited potable water supply options in the area. The proponent should contract potential suppliers and confirm availability.

As per the Modification Report (Section A.3.3), it is estimated that the accommodation facility will require approximately 250 L of potable water per person per day. Based on a workforce of 650 people, this equates to up to 162,500 L/day or 137 ML in total over the 28-month construction phase. Potable water requirements during operation would be primarily associated with amenities and will be minimal in volume.

ACEN acknowledges that there are limited potable water supply options in the region. The water supply options being investigated that are available to the project to meet the required demand are discussed in Section 4.5.1 of

this report. Water will be treated on-site and stored in tanks that are connected to the units and communal infrastructure. A rainwater tank/s will be installed to capture water that can be used for non-potable functions such as toilet flushing, laundry, vehicle washing or landscape irrigation.

ACEN is also currently engaging in discussions with Mid-Western Regional Council for opportunities regarding Gulgong Water Treatment Facility.

4.5.5 Activities on waterfront land

Recommendation:

The DPHI should ensure works within waterfront land are in accordance with the Guidelines for Controlled Activities on Waterfront Land.

Explanation:

The proposal states that cable installation, watercourse crossings and fencing are proposed on waterfront land. These works must consider the Guidelines for Controlled Activities on Waterfront Land.

As noted in the modification report (Appendix C), mitigation measure FL05 and the current conditions of consent (SSD-29508870 – B33), the design and construction of waterway tracks and cable crossings and all internal tracks crossing watercourses within the development footprint will be generally in accordance with the *Guidelines for controlled activities on waterfront land – riparian corridors* (Natural Resources Access Regulator 2018), *Guidelines for watercourse crossings on waterfront land* (Department of Primary Industries, Office of Water 2012) and *Guidelines for laying pipes and cables in watercourses on waterfront land* (NSW Office of Water 2012).

4.6 DCCEEW – Heritage NSW

4.6.1 Aboriginal cultural heritage

Parts of the Aboriginal Cultural Heritage Assessment Report (ACHAR) have been updated as indicated below to reflect DCCEEW – Heritage NSW comments. The revised ACHAR is included in Appendix C of this report.

i Aboriginal Cultural Heritage Management Plan

Heritage NSW note that as per condition of consent B30 of approval SSD-29508870, an Aboriginal Cultural Heritage Management Plan (ACHMP) is required to be prepared prior to the commencement of construction activities. To date, an ACHMP has not been issued to Heritage NSW for review.

An Aboriginal Cultural Heritage Management Plan (ACHMP) will be prepared prior to commencement of construction activities. Construction activities have not yet commenced.

ii Aboriginal community consultation

Heritage NSW requests the following additional information:

- *Please provide the unredacted Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared for the modification, including evidence of emails issued to the Registered Aboriginal Parties (RAPs)*
- *Please provide discussion around the comments from Warrabinga Native Title Claimants Aboriginal Corporation noted in Appendix 1 Figure 13 of the ACHAR regarding trust and accountability. Please provide details of any response from ACEN to Warrabinga Native Title Claimants Aboriginal Corporation addressing this concern.*

All correspondence (unredacted) with Registered Aboriginal Parties (RAPs) will be provided separately to Heritage NSW on lodgement of this report.

ACEN has managed communication with Warrabinga Native Title Claimants Aboriginal Corporation on this matter, noted in Appendix 1 Figure 13 of the ACHAR. Documentation of this correspondence has been provided to Heritage NSW by ACEN as DOC25/874432.

iii Archaeological assessment

Heritage NSW requests the following additional information:

- *Heritage NSW note that the survey tracks shown in Figure 6.2 of the ACHAR do not provide full coverage of the project area. In accordance with Requirement 5 of the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010) full survey coverage is required unless clear justification is provided. In consideration of this, additional survey is required to cover currently unsurveyed areas. Please update the ACHAR to include additional survey tracks, discussion of additional survey areas and any updates to the predictive model and conclusions.*

The flat and gently sloping landforms (survey unit 2 and 3) presented across the modification area were comprehensively sampled during the survey in accordance with Requirement 5a of the Code of Practice and therefore no additional survey was required. Requirement 5a states sampling must:

> include all landforms that will potentially be impacted. Where there is more than one instance of similar or the same landforms that have the potential to be impacted each individual landform must be sampled (DECCW 2010: 12)

The survey undertaken achieves this as all individual landforms have been sampled.

The assessment methodology developed for the survey also identified that these landforms would be subject to sample survey. This is the same level of assessment that was undertaken for these landforms across the approved Birriwa Solar and Battery Project (SSD-29508870), which was determined and approved on 16 August 2024.

The results of the assessment across the modification area supported the prediction that survey units 2 and 3 had low archaeological potential.

The ACHAR has been updated to reflect the above within Section 6.1 and the revised ACHAR has been provided as Appendix C of this report.

Please provide further discussion regarding potential harm to scarred trees AHIMS # 36-3-3918 (Birriwa Bus Route South ST-1). The potential indirect impact to the site via road build-up within the drip line should be assessed by an arborist. We note that in-situ conservation is the preferred approach of both Heritage NSW and project RAPs (Section 3.2.4, Appendix 1 Figure 13 of the ACHAR).

The full nature and location of impacts near AHIMS # 36-3-3918 (Birriwa Bus Route South ST-1) will not be known until detailed design is completed prior to construction. A recommendation has been included in the ACHAR that advice from an arborist must be sought once impacts are known. Advice from the arborist will be incorporated into the ACHMP to mitigate harm to the site, where possible.

The ACHAR has been updated to reflect the above within the Executive Summary, Section 8.2, Section 9.2.2 and Section 10, as well as Appendix B (AH2) of this report. The revised ACHAR has been provided as Appendix C of this report.

4.6.2 Historical heritage

Parts of the Historical Heritage Assessment Report (HHAR) have been updated as indicated below to reflect DCCEEW – Heritage NSW comments. The HHAR is included in Appendix D of this report.

i Historical assessment

Please provide further information and discussion regarding the history of sites Birriwa Historic Site-01: Shearers Shed and Birriwa Historic Site-02: Dilapidated Residence.

Section 4.2 of the HHAR (Appendix D of this report) has been updated to address the requested information and also included below.

a Site 01 Shearers Shed

The shearers shed and associated tools and machinery are in a state of disrepair, with sections of the shed having collapsed, or missing sections of wall and ceiling (Figure 4.4, image 1 of the HHRA, Appendix D). Most of the large timber structural components and roof trusses consist of rounds rather than dressed wood, indicating that the shed was built from bush timber, which would have been available on the property. This building technique indicates that the shearing shed was possibly constructed in the late 19th or early 20th century. It is likely however that the shed was erected almost contemporaneous to the residence situated on the adjacent watercourse creek flat.

No makers marks were apparent on the corrugated iron exterior with some portions, particularly the gabled roof, having been replaced with modern galvanised sheets.

A timber wool press remains inside the shed and associated farm machinery and tools are situated in and around the structure. Several pieces of machinery are lined up to the east of the shed within the site extent, also in various states of disrepair and missing any indication as to the manufacturer. However, rubber tyres were observed on the tractor which were adopted throughout NSW from the 1930's, replacing earlier steel wheels.

Thin topsoils were present across the area indicating limited soil accumulation which may have been deposited over any associated ancillary structure footings. Further, there was no indication of any wells or potential archaeological resources present. As such, there is low potential for any subsurface historic elements associated to the shed to be present.

b Site 02 Dilapidated Residence

The dilapidated residence is in a state of disrepair. What is left of the residence has collapsed, leaving only a regrouted brick chimney with a corbelled chimney stack and corbelled crown (Figure 4-5, image 1 of the HHRA, Appendix D), in addition to an adjacent metal chimney which was possibly associated with an external kitchen. The site also contains collapsed corrugated iron and timber structures likely associated with animal enclosures and an array of farm paraphernalia.

A significant number of glass bottles were present near to the residence including a 1927 clear vinegar bottle, Bonnington's Irish Moss' cough syrup medicine bottle (1920-1940) and numerous 1970's-2020's coca cola bottles.

There are two vintage cars in the yard area, one of which appears to date to the late 19th early 20th century, featuring a split-screen windscreen and one possibly dating to the mid-20th century although the make and model badges are missing.

Due to the very deteriorated state of the residence, the approximate date of construction cannot be determined from the architecture of what remains. However, the surrounding objects associated to the building indicates that the structure was erected near to the turn of the 20th century, prior to 1930, indicating that the residence may be associated to B.H.B Adams who purchased the property in 1917.

Thin topsoils were present across the area indicating limited soil accumulation which may have been deposited over any associated ancillary structure footings. Further, there was no indication of any wells or potential archaeological resources present. As such, there is low potential for any subsurface historic elements associated to the residence to be present.

Please provide additional detail in Section 5.2 of the Historical Heritage Assessment Report (HHAR) discussing why the three identified historical sites don't meet the thresholds of significance.

Section 5.2 of the HHRA (Appendix D) has been updated to further clarify why the three identified items do not meet the thresholds of significance and also included in Table 4.5, Table 4.6 and Table 4.7.

Table 4.5 Assessment of heritage significance – Birriwa Historic Site 01 Shearers shed

Criterion	Comments	Significance
a	An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)	While the shed reflects a phase of Birriwa's agricultural history, the shed is not associated with any significant historical events or form part of a cultural landscape. It does not reflect an important pattern of NSW's agricultural history. No historical significance
b	An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)	The shed has no specific association with any historical people or figures of importance to Birriwa or NSW. No historical significance
c	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)	The shed and associated items are in a dilapidated condition and exhibit no unique aesthetic characteristics or technical achievement. Further the shed is not a landmark in the surrounding area. No historical significance
d	An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons	The community of Birriwa has no strong association or connection to the shed. No historical significance
e	An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)	The poor state of the shed and associated items means there is little further understanding of Birriwa's agricultural history that can be garnered. No historical significance
f	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)	The shed has no elements or items that are uncommon or considered as 'rare'. Sheds of similar construction are common throughout NSW with examples in better condition. No historical significance
g	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).	The shed is a poor representative example of class due to the lack of intactness and is not a pivotal example of the local area. No historical significance

Table 4.6 Assessment of heritage significance – Birriwa Historic Site 02 Dilapidated residence

Criterion	Comments	Significance
a	An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)	While the residence reflects a phase of Birriwa's agricultural history, the residence is not associated with any significant historical events or form part of a cultural landscape. It does not reflect an important pattern of NSW's agricultural history. No historical significance
b	An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area).	The residence has no specific association with any historical people or figures of importance to Birriwa or NSW. No historical significance
C	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)	The residence and associated items are in a dilapidated condition and exhibit no unique aesthetic characteristics or technical achievement. Further the residence is not a landmark in the surrounding area. No historical significance
d	An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons	The community of Birriwa has no strong association or connection to the residence. No historical significance
e	An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)	The poor state of the residence and associated items means there is little further understanding of Birriwa's agricultural history that can be garnered. No historical significance
f	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)	The residence has no elements or items that are uncommon or considered as 'rare'. Residences of similar construction are common throughout NSW with examples in better condition. No historical significance
g	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).	The residence is a poor representative example of class due to the lack of intactness and is not a pivotal example of the local area. No historical significance

Table 4.7 Assessment of heritage significance – Birriwa Historic Site 03 20th Century homestead

Criterion	Comments	Significance
a	An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)	While the homestead reflects a phase of Birriwa's agricultural history, the homestead is not associated with any significant historical events or form part of a cultural landscape. It does not reflect an important pattern of NSW's agricultural history. No historical significance
b	An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)	The homestead has no specific association with any historical people or figures of importance to Birriwa or NSW. No historical significance
c	An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)	The homestead exhibits no unique aesthetic characteristics or technical achievement. Further the homestead is not a landmark in the surrounding area. No historical significance
d	An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons	The community of Birriwa has no strong association or connection to the homestead. No historical significance
e	An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)	The homestead is of modern construction is unable to further the understanding of Birriwa's agricultural history. No historical significance
f	An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)	The homestead has no elements or items that are uncommon or considered as 'rare'. Homesteads of similar construction are common throughout NSW with examples in better condition. No historical significance
g	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).	The homestead is not distinctive in its class, does not encapsulate a key evolutionary stage of Birriwa's agricultural development and is not a pivotal example of the local area. No historical significance

ii Archaeological assessment

Please update the assessment to include a consideration for the potential for archaeological relics in association with the three identified historical sites.

Section 4.2 and Section 5.3 of the HHRA (Appendix D) has been updated to address the requested information regarding archaeological potential. Section 5.3 of the HHRA is summarised below and Section 4.2 of the HHRA has been summarised in Section 4.6.2i of this report.

Three items of potential historic heritage were identified within the modification area, Birriwa Historic Site-01: Shearer's shed; Birriwa Historic Site-02: Dilapidated residence; and Birriwa Historic Site-03: 20th century homestead. All sites have been assessed as having no historic heritage significance under the current Heritage NSW guidelines and the Burra Charter. It is noted that this result reflects the current thresholds and principles of

the assessment criteria that rightly emphasise items with collective, aesthetic, technological and/or natural significance.

The modification area is generally undulating to flat, which is traversed by the non-perennial waterway, White Creek. Historical aerial imagery (Figure 2-2 of the HHRA, Appendix D) from 1963 indicates that the area has been significantly cleared for pastoral and agricultural purposes. There is no evidence to suggest that there were previous substantial structures within the Modification Area outside those assessed in this report. Therefore, there is low potential for archaeological features or deposits relating to former structures.

4.7 Mid-Western Regional Council

4.7.1 Traffic and transport

i Alternative access route supported

Council acknowledges the modification introduces a secondary access route along Merotherie Road and BBRS to the site entry. Consultation with Council on this option has been ongoing and the alternative access is generally supported, subject to:

- *Suitable road upgrades being delivered as described in the Modification Report.*
- *Acknowledgement that sections of BBRS contain substandard curves that may require property acquisition to achieve compliance with Austroads Guidelines.*

ACEN notes Council's support of the secondary access route along Merotherie Road and BBRS to the site entry, subject to:

- suitable road upgrades being delivered as described in the Modification Report
- acknowledgement that sections of BBRS contain substandard curves that may require property acquisition to achieve compliance with Austroads Guidelines.

ii Condition of consent inclusions

- *To ensure safe and consistent outcomes:*
  - *Appendix 5 of the project consent must be amended to capture the additional road upgrades to Council's satisfaction*
  - *The section of BBRS between Merotherie Road and the site entry should be constructed in accordance with Austroads Guidelines and Appendix 5 upgrade requirements, except where Council agrees to vary the design to preserve biodiversity, while maintaining road safety standards.*
- *Council recommends the following condition be included:*

  "Resurfacing and widening of Birriwa Bus Route South to a minimum width of 9.2 m, which includes 7.2 m seal and 2 m unsealed shoulders (2x3.1 m travel lanes + 0.5 m sealed shoulders both sides + 1 m unsealed shoulders both sides) except where agreement has been reached with the roads authority to vary this standard."

As outlined in Section 6.4.2 of the Modification Report, the required road upgrades along BBRS will be undertaken to the satisfaction of Council as the relevant road authority. This is consistent with the existing conditions of consent and specifically condition B6.

iii Heavy vehicle and workforce traffic assumptions

Further, heavy vehicle and workforce traffic assumptions in the modified TIA require review to ensure consistency. The assumption that camp-based workers will generate minimal off-site travel is unlikely and risks underestimating traffic impacts during non-shift hours. Council reiterates its request for:

a. A revised TIA with consistent workforce assumptions.

b. Assessment of cumulative impacts with other energy projects and accommodation facilities.

c. Maximum hourly vehicle movement caps.

d. *Dilapidation survey reports provided to the relevant road authorities before and after construction.*

a Workforce assumptions

The TIA has assessed heavy vehicle and light vehicle traffic daily trips/movements and peak hour trips/movements.

'Off-site' travel includes non-shift trips such as trips associated with medical, recreational, and arrival/departure before/after shift work. These trips will generate minimal peak hourly traffic trips and therefore are not required to be included in the peak hour assessment. Non-shift trips will be ad-hoc and cannot be reasonably accounted for within the traffic assumptions.

It is important to note that the drivers code of conduct addresses the fatigue policy, which will be outlined in the Traffic Management Plan, and will prevent shift workers from travelling long distances before/after shift work and during peak hour.

b Assessment of cumulative impacts

A cumulative traffic assessment has been undertaken within the TIA (Section 4.4) and is summarised in Section 6.4.2 of the Modification Report. Further detail is provided in response to EnergyCo NSW (refer to Section 4.4.1 of this report).

c Maximum hourly vehicle movement caps

The conditions of consent (condition B1) include a maximum daily and hourly vehicle movement cap. As detailed in Section 3.9 of the Modification Report, it is anticipated that this condition will be updated to reflect the modification, increasing the allowable total number of daily vehicle movements to and from the site during pre-construction and construction from 120 to 156 daily heavy vehicle movements, split between the access via Barneys Reef Road and the alternative access via Merotherie Road. Up to 90 of the 156 heavy vehicle movements will access the site per day along Merotherie Road and BBRS (88 peak hourly AM and PM trips).

d Dilapidation surveys

ACEN acknowledges Council's request for a dilapidation survey report provided to the relevant road authorities before and after construction. This is a requirement of condition B9 (b) of SSD 29508870.

4.7.2 Workforce accommodation and social impacts

Council acknowledges the inclusion of an accommodation camp is a positive step in reducing pressure on Mudgee and Gulgong housing markets. However:

a) Sewage disposal arrangements remain undefined.

b) Water supply options are listed, but feasibility and security of supply are not demonstrated.

c) The scale of the accommodation (650, with infrastructure expandable to 1,000) increases the importance of resolving these issues prior to determination.

d) *Council cannot support reliance on Council's water and sewer facilities without major funded upgrades by the proponent.*

a Sewage disposal

This modification is seeking to increase the temporary accommodation facility from 500 construction staff to 650 construction staff and is proposed to be accessed via the alternative access route. Additional heavy vehicle movements associated with the delivery of water and fuel, and the collection of sewage and waste have been included in the assessment.

Proposed sewage management is described in Section A.3.3 of the Modification Report.

There is no existing water, sewerage or electricity infrastructure at the proposed site. ACEN will continue to consult with Mid-Western Regional Council during detailed design and prior to construction of the accommodation facility commencing, to identify opportunities to avoid or reduce reliance on Council water supply and sewage treatment facilities in the region. Potential options have been detailed in Section A.3.3 of the Modification Report relating to the accommodation facility sewage management:

> It is estimated that the accommodation facility will produce approximately 250 litres (L) of sewage per person per day. The accommodation facility will be serviced by a pump-out sewerage system. A septic holding tank will be connected to the units and communal infrastructure and sewage will be removed by truck to a treatment facility which has the required capacity, at least weekly.
>
> There may also be an opportunity to install an on-site sewage treatment plant that will produce treated wastewater that can be used during construction of the project. It may also be appropriate to use treated water to supplement rainwater captured for non-potable functions such as toilet flushing. If an on-site system were to be used, the capacity is expected to be approximately 250 L per person per day, or a total of up 163 kL per day, when the facility is up to the maximum capacity of 650 people. This processing capacity is below the threshold specified in section 36 of Schedule 1 of the POEO Act, and therefore an environment protection licence (EPL) would not be required if an on-site sewage treatment facility was to be installed.
>
> ACEN will continue to consult with Mid-Western Regional Council to determine an appropriate mechanism for treating and disposing of sewage prior to the finalisation of detailed design and construction of the accommodation facility commencing.

ACEN will continue to consult with the councils in the region, including Mid-Western Regional Council, to determine an appropriate mechanism for treating and disposing of sewage prior to the finalisation of detailed design and construction of the accommodation facility commencing.

Dubbo Regional Council (DRC), Water Supply and Sewerage division were contacted on 27 February 2024 to determine the capacity and acceptance of the project sewage. DDRC advised that the project is located within the MWRC LGA and DRC's current policy and trade waste approval does not allow septic or septage waste collection outside of their LGA to be discharged at DRC's septage receival stations. However, at a meeting on 6 March, DRC

confirmed they would be open to revising their policy to enable receiving sewage waste from outside their LGA if a contribution was made to upgrading their STP.

b Water supply options

As detailed in Section 6.6.3 of the Modification Report, the water supply options being investigated that are available to the project to meet the required demand include the following:

1. Purchase water from commercial suppliers of treated wastewater, trucked to the site.

2. Source the water from the regulated Cudgegong River (downstream Windemere Dam) – a water access licence (WAL) would need to be established and permanent water entitlement or temporary allocation purchased from the market. In addition, a water supply works approval would need to be granted to install the necessary pump/pipe and infrastructure.

3. Source water from the existing farm dams within the study area for non-potable construction purposes, to minimise the use of imported water and in accordance with the harvestable rights provisions. There is likely to be limited water supply and security of supply associated with this option.

4. Use recycled water where practicable from other industrial facilities, such as concrete batching plants in the region.

5. Source water from existing groundwater bores via purchasing WAL entitlement or allocation available on the market or entering into an agreement with relevant licence holders. In addition, a new or amended existing water supply work approval would need to be granted to take water from an existing groundwater bore.

6. Install new groundwater bores within or near to the project site and purchase a WAL entitlement or allocation from the market to use this water for the project. In addition, a new water supply work approval would need to be granted to install a new groundwater bore.

7. A combination of the above options.

Further investigation into the feasibility of each of the potential water sources, such as water quality and volume requirements for specific uses and locations, will be undertaken during continued development of the project design and detailed construction planning, in consultation with suppliers, licence holders, as well as with Mid-Western Regional Council for opportunities regarding Gulgong Water Treatment Facility.

A summary of the existing tradeable entitlement within the surface water and groundwater sources in the vicinity of the project that may potentially be targeted for water supply, sourced from the *NSW Water Register* (WaterNSW 2025) are presented in Table 4.8. The maximum water demand of around 170 ML/year during construction represents between 0.2% and 3% of the total share component available in each water source, which indicates there is sufficient depth in the water market to account for the likely volume required for water supply.

Table 4.8 Summary of existing water entitlement available

Water sharing plan	Water source	Access licence category [1]	Number of licences	Total share component [2]
Macquarie and Cudgegong Regulated Rivers Water Source 2016	Macquarie and Cudgegong Regulated Rivers Water Source [3]	Regulated river (general security)	128	18,520 unit shares
		Regulated river (high security)	83	17,913 unit shares
NSW Murray Darling Basin Fractured Rock Groundwater Sources 2020	Lachlan Fold Belt MDB Groundwater Source	Aquifer	1,069	74,204.7 unit shares
NSW Murray Darling Basin Porous Rock Groundwater Sources 2020	Sydney Basin MDB Groundwater Source	Aquifer	39	11,088 unit shares
Macquarie-Castlereagh Groundwater Sources 2020	Talbragar Alluvial Groundwater Source	Aquifer	21	5,355 unit shares

4. Only access licence categories relevant to the project have been shown.
5. Where entitlement is expressed as 'unit shares', it represents shares in the water made available to that licence category. Water made available is a function of the state of the water resource and is climate dependent. Generally, in any given year, not more than 1 ML/unit share will be made available.
6. Entitlement shown is for the Cudgegong River (water management zone known as "That Part of the Water Source Upstream of the Upper Limit of Lake Burrendong")

4.7.3 Biodiversity and environmental matters

The Biodiversity Development Assessment Report (page 35) notes the likely emergence of Acasia Ausfeldii, a threatened species, following soil disturbance along BBRS. Council advises that any future road maintenance or upgrades in this area will require additional environmental assessments and species impact statements.

In addition, koala scats have been identified within close proximity of works and are known to occur within high-value vegetation communities (PCT 281, 277). Council maintains its position that vegetation removal should be kept to the minimum extent possible and further site-specific koala studies undertaken prior to clearing.

Acacia ausfelldi's was identified as a candidate species, surveyed for and not found within the modification area. Any future road maintenance or upgrades that fall outside the scope of the modification would constitute a separate activity and subject to its own biodiversity assessment. As per the EP&A Act (section 5.4) and the *Biodiversity Conservation Act 2016*, a Species Impact Statement is only required where an activity is likely to significantly affect threatened species or ecological communities.

ACEN acknowledges Council maintains its position that vegetation removal should be kept to the minimum extent possible. Further site-specific koala studies will not be undertaken prior to clearing. However, as outlined in mitigation measure BIO3 (Appendix A of the Modification Report), pre-clearance surveys will be conducted prior to removal of hollow bearing trees to mitigate injury to potential fauna species inhabiting hollows. As well as this a biodiversity management plan (refer to BIO1 mitigation measure, Appendix A of the Modification Report) will be prepared for the project and will document the measures to avoid and minimise direct and indirect impacts to ecological values and natural assets.

4.7.4 Waste management

Construction and domestic waste volumes associated with up to 650 workers and large-scale construction remain a concern. Council facilities do not have the capacity to accommodate project waste. A Waste Management Plan identifying disposal/recycling routes and facilities must be provided, ensuring no reliance on Council facilities without significant upgrades funded by the proponent.

A review of waste management facilities in the region was conducted as part of the Amendment Submissions Report, which identified a number of facilities within the adjacent Upper Hunter Shire Council and Dubbo Regional Council areas. In response to the Department's request for further information, additional consultation was conducted with these councils to identify whether they are capable of taking waste from the project.

The outcome of the consultation confirms that Dubbo Regional Council is able and willing to accept the majority of waste streams expected from the project and have provided contact details for licensed facilities and contractors that can handle the remaining waste.

In addition to the consultation with nearby councils, ACEN met with Central Waste Station, a private resource recovery and waste management operator with facilities in Cessnock, Muswellbrook and Newcastle local government areas. Potential options for waste management solutions were discussed, in particular the recovery of packaging waste. The viability of this option will be explored further and would complement the solution provided by Dubbo Regional Council.

Further, the conditions of consent (condition B43 of SSD-29508870) require the preparation of an Accommodation Camp Management Plan, which includes requirements relating to waste management.

4.7.5 Construction hours

The modification seeks to extend Saturday working hours and allow inaudible activities outside standard hours. Council does not support this change, as extended hours will negatively impact the amenity of nearby residents through increased dust, noise, and traffic. Standard construction hours should apply.

The Modification does not seek to change the construction hours already approved.

4.7.6 Decommissioning and rehabilitation

Council reiterates its position that a robust Decommissioning and Rehabilitation Plan must be prepared and conditioned to include:

- *A costed estimate of decommissioning works, with allowance for inflation.*
- *An engineer-certified physical plan demonstrating land can be returned to agricultural use.*
- *Financial security to cover decommissioning costs.*
- *Periodic upgrades (every 5-7 years).*

The preparation of a decommissioning and rehabilitation plan is a requirement of the condition of consent B47 SSD 29508870.

4.8 Warrumbungle Shire Council

4.8.1 Impacts summary

In terms of potential impacts on Council's assets and interests, Council understands the proposal seeks to modify the existing approval by:

- *Increasing the capacity of the purpose-built temporary workforce accommodation by 150 workers, an increase of 30% (to 650 beds)*
- *Increasing the peak heavy vehicle (HV) movement limits by 36 truckloads daily, an increase of 30% (to 156 loads per day)*
- *Adding a new road route for access to the site, namely Merotherie Road, while keeping the existing approved route via Barneys Reef Road. Both routes include road segments owned and maintained by Council.*

The transport changes are material from Council's perspective. Unless mitigated, increases in project traffic by an estimate of 15-30 % will reduce safe travel outcomes for all traffic on said public roads, as well as place a long-term maintenance burden (costs) for Council, arising from road deterioration under heavy project traffic.

The Modification Report and the TIA (EMM 2025) have not quantified the total increase in haulage materials or traffic volumes over the life of the project (construction, operation and decommissioning). Notwithstanding, based on our detailed technical analysis, there will be a substantial, additional impact arising from heavy vehicle movements.

As outlined in Section 3.6 of the Modification Report, additional mitigation measures have been proposed as part of the modification, as follows:

- The project traffic will not use Golden Highway / Merotherie Road intersection or Merotherie Road for construction traffic until these have been upgraded as part of EnergyCo CWO Renewable Energy Zone Transmission project (Merotherie Energy Hub).
- ACEN proposes to undertake the Merotherie Road / BBRS intersection upgrade, and upgrade to BBRS, to the satisfaction of Mid-Western Regional Council and in consultation with the Network Operator.
- A traffic management plan (TMP) and Driver Code of Conduct will be prepared for the project with a focus on safety for current users, including users of the CWCT. The TMP will take into consideration the Network Operator's traffic management plan where relevant.

Table 6.12 of the Modification Report provides estimated daily and peak hourly vehicle movement/trips for the project, broken down into peak stages of the lifecycle of the project. As outlined in the Modification Report (Table 6.12), the modification seeks to increase the total number of project related heavy vehicles by up to 30% (i.e. a total of 156 daily heavy vehicle movements; that is, 156 vehicles travelling into site and 156 travelling out). It is anticipated that daily heavy vehicle movements will be split between the approved access via Barneys Reef Road and the proposed alternative access via Merotherie Road.

It is anticipated that up to 90 daily heavy vehicle movements of the 156 heavy vehicle movements will access the site per day via the alternative Merotherie Road access during peak periods. These peak movements via the alternative access will not coincide with the peak movements along the approved access route via Barneys Reef Road, such that the combined total heavy vehicle movements travelling to and from the site on any given day during pre-construction and construction will not exceed 156 movements (where movements is defined as per the development consent as 'one vehicle entering and leaving the site').

No changes are proposed to the approved volume of heavy vehicles that may access the site via the approved access route off Barneys Reef Road (120 heavy vehicles in and out of the site).

Details of traffic, including timing of peak traffic along Merotherie Road and BBRS will be provided in the Traffic Management Plan prior to construction commencement.

The likely traffic distribution in terms of site access during the various stages of the modified project is described as follows:

- Alternative access: Golden Highway – Merotherie Road - BBRS route:
  - construction of the accommodation facility - light and heavy vehicles
  - BESS construction - heavy vehicles (excluding heavy vehicles requiring an escort)
  - solar and BESS construction - light vehicles
  - operation of the accommodation facility - light and heavy vehicles.
- Approved access: Castlereagh Road – Barneys Beef Road – BBRS:
  - solar and BESS construction – light and heavy vehicles (including heavy vehicles requiring an escort).

4.8.2 Road user agreement

The workforce and heavy vehicle loads are each expected to be increased by 15-30% and will increase the impact on Council's roads. Thus, Council proposes agreement to be reached between the parties to secure a Road User Agreement that acknowledges the financial impacts associated with road wear and tear, so such costs are not carried by our ratepayers. The key terms of such an agreement would need to be secured prior to granting approval.

Council therefore seeks the modified conditions of consent to require a Road Users Agreement to be entered into between Council and the developer for roads impacted by the development within Warrumbungle Shire Council.

The proposed modification area, which includes upgrades to BBRS, and the BBRS/Merotherie Road intersection, lies within the Mid-Western Regional LGA. Part of the approved transport access route to the approved project site is via the Castlereagh Highway which is located within the Warrumbungle Shire LGA.

Additionally, it is acknowledged that the traffic route to the alternative access (modification area) includes the Golden Highway and a small section of Merotherie Road, which falls within the Warrumbungle Shire LGA (refer to Figure 1.1).

Following three consultation meetings between Council and ACEN, and with reference to Council's advice on pavement strengthening, ACEN acknowledges Councils' concern regarding protecting both Council and taxpayers from potential costs relating to the depletion of pavement life over time.

The Golden Highway/Merotherie Road intersection and the section of Merotherie Road between the Golden Highway and BBRS are currently being upgraded by the Network Operator as part of the approved EnergyCo CWO REZ Transmission Project. The Merotherie Road works are outside the Birriwa Project development footprint, and as ACEN is not the proponent, it cannot undertake upgrades on Merotherie Road. Accordingly, the assessment for the modification assumes that the Network Operator will deliver the upgrades in accordance with their existing conditions of consent, including to Austroads standards and to the satisfaction of the relevant road authorities. ACEN's commitments are limited to ensuring that the geometric design is suitable for forecasted traffic volumes, with pavement and structural design to be determined by the Network Operator.

While construction traffic may impact pavement life and require maintenance at a cost, Merotherie Road must also accommodate the Network Operator's construction traffic, and upgrading the pavement to a higher specification prior to the construction of the Birriwa Solar and BESS Project is not feasible as the Network Operator requires full use of the road for its own construction program. Post-construction, the higher pavement specification would not be necessary for ongoing operational and local traffic.

To address Council's concerns regarding long term costs and unseen pavement wear, ACEN understands that Mid-Western Regional Council has agreed in principle to manage and repair Merotherie and Barneys Reef Roads, including sections within the Warrumbungle Shire LGA, with costs addressed through financial contributions from ACEN. This approach allows any project-related damage to be identified and rectified by Mid-Western Regional Council, and avoids duplication of the Network Operator's upgrade works, and ensures the roads are maintained to an appropriate standard reflecting anticipated traffic volumes, while balancing the interest of Warrumbungle Shire Council, Mid-Western Regional Council, the Network Operator and ACEN in providing a safe and durable road asset for the community.

Correspondence between ACEN and Warrumbungle Shire Council regarding the above discussion and approach is included in Appendix F.5.

4.8.3 Roads consent conditions

If the modification were to be approved by DPHI, to ensure that the infrastructure and resources of the Council are 'no worse off' in the long term as a result of the proposed modification, Council recommends the following amendments to the SSD consent conditions (refer to WSC submission for further detail) including amendments to condition of consent B1, B3, B9, and Appendix 5.

Section 3.9 of the Modification Report describes the required updates to the conditions of consent to reflect the modification. Further commentary in response to Council's submission is provided below.

i Amendment to condition of consent B1

ACEN acknowledges DPHIs definition of a vehicle movement (in and out). As discussed previously in Section 4.9.3 of this Modification Submissions Report, to allow for the increase in the total number of daily vehicle movements (30%) and the split between access points, the condition (B1) should be updated as follows:

The Applicant must ensure that the:

(a) Development does not generate more than:

(i) 156 heavy vehicle movements a day, that is, 156 vehicles traveling into site and 156 travelling out.

ii Amendment to condition of consent B3 and B4

ACEN acknowledges and agrees with Council's request for the inclusion of the suggested amendment of conditions B3 and B4. This amendment provides further clarification between heavy vehicles using all access points and heavy vehicles requiring escort via Barneys Reef Road – BBRS route.

Hence, Section 3.9 of the Modification Report describes the required update to the conditions of consent to reflect the above:

- Condition B3 of Schedule 2 – amend to allow heavy vehicles travelling to site to use Merotherie Road and Birriwa Bus Route South.
- Condition B4 of Schedule 2 – amend to allow vehicles travelling to site to use Merotherie Road and Birriwa Bus Route South.

iii Amendment to condition of consent B9

ACEN acknowledges Council's request for the inclusion of the suggested amendment to B9, and as detailed in Section 3.9 of the Modification Report, Condition B9 (a)(i) and (ii) of Schedule 2 should be amended to include the section of Birriwa Bus Route South associated with the alternative access to Merotherie Road.

ACEN accepts Council's request to amend B9 dilapidation surveys by adding new points (a)(iii) and a(iv) to ensure that a Merotherie Road – Birriwa Bus Route South route dilapidation survey must be completed before and after construction upgrading and decommissioning and the affected Councils will receive copies of those dilapidation reports.

In relation to Council's request to amend B9(c) to insert reference to the Merotherie Road - BBRS route so Council will be entitled to repairs if damages are identified between the pre-and post-activity surveys, this is discussed in detail in Section 4.8.2 of this Modification Submissions Report.

iv Amendment to condition of consent Appendix 5

ACEN acknowledges the requirements regarding pavement strengthening upgrades. This is discussed in detail in Section 4.8.2 of the Modification Submissions Report.

4.9 Transport for New South Wales

4.9.1 Birriwa workforce accommodation facility optional use for other projects

Section 3.5 of the Modification Report prepared by EMM Consulting (July 2025) acknowledges that "the expansion of the accommodation facility capacity would be potentially provide opportunities for sharing of accommodation with other ACEN projects i.e Valley of the Winds".

TfNSW request clarification from the applicant on how the increased vehicle volumes will be considered and assessed and additionally how the use of the camp by other projects will be assessed.

A revised TIA and RTS response should be provided to understand the traffic increases associated with the proposed camp increase and detail how, when and in which approval or modification the impacts will be assessed. The TIA should consider, assumptions, traffic volumes, distributions for the proposed and consider the Birriwa workforce and other major project workforce.

If the intent is to capture the revisions to other projects' traffic assumptions as part of the Birriwa Solar Farm modification, then further traffic assessment is required to address the following:

e) Any overlapping project traffic volumes and timelines associated with the sharing of accommodation facilities with other projects as part of a revised turn warrant assessments for the intersections with the state road network for the relevant intersections for Birriwa and other projects that will share the accommodation facilities.

f) *Point 1, reassessment of the traffic assumptions, routes and conservative turn warrants scenarios must occur for each separate project that chooses to use the Birriwa Solar Farm workforce accommodation facility and identify how any changes to the mitigation measures will be captured either as part of the Birriwa Solar Farm modification 1 or other approval pathways.*

Section 1.3 of the Amendment Report (EMM 2023) prepared for the approved project stated that *the accommodation facility will have the potential to expand, enabling capacity for up to 1,000 people subject to future approvals, to accommodate a workforce from future ACEN developments within the CWO REZ, if deemed required and subject to future accommodation needs.*

As noted by TfNSW, the Modification Report notes that the capacity increase from 500 to 650 beds will *enable opportunities for potential sharing of the accommodation with other ACEN projects in the CWO REZ, in particular the recently approved Valley of the Winds Project.* The potential use of the accommodation facility by other projects, subject to future approvals, is consistent with what was described for the approved project.

Further, the proposed modification assesses traffic routes and movements specific to the modified project. Any potential opportunities for use of the workforce accommodation facility with other ACEN projects in the CWO REZ will be subject to further assessment, where required.

ACEN will schedule and manage traffic movements associated with the Birriwa Solar and Battery Project through a detailed Traffic Management Plan (TMP), which will be prepared prior to commencement of road upgrades and project construction. As detailed in the Modification Report (refer to Section 3.6), the TMP will incorporate traffic measures to be implemented throughout the project's construction period and timing of peak traffic along Merotherie Road and BBRS.

4.9.2 Traffic reassessment and clarification requirements

Clarifications have been provided below in relation to the TIA for the Birriwa Solar and Battery Project Modification, which demonstrates that the TIA does not require updating.

i Vehicle movements worst-case

The traffic assessment provided as part of the EMM Consulting TIA for Birriwa Solar Farm Mod 1 requires the following clarifications and revisions as part of a revised TIA:

The vehicle movements identified in Table 4.1 of the TIA are not considered the worst-case scenario, as the project peak hour vehicle movement numbers have not been applied to the background network peak hour.

Note – This is not applicable If the vehicle movements for the construction of the Birriwa Solar Farm and BESS are restricted to only occur during the project's peak hour (6-7 am and 5-6 pm), with no vehicle movements occurring during the network peak hour for the Golden Highway or Castlereagh Highway. This also needs to be accompanied by systems to monitor and enforce all site users only utilising the network during the construction peak.

The project's peak hour vehicle movement numbers have been applied to the background network peak hour, as discussed in Section 4.1 of the TIA (Appendix H of the Modification Report, EMM 2025). Therefore, the TIA considers the worst-case scenario for most preconstruction and all construction movements.

It is acknowledged that there are some pre-construction movements that will not occur during the network peak hour. As discussed at the end of Table 4.1 (as a note) of the TIA, the majority of these pre-construction movements are related to the delivery of accommodation modules and only occur over a few days. Therefore, there are not anticipated to be any major impacts to the adjoining road network.

ii Cumulative traffic volumes associated with the CWO REZ Transmission Project

The traffic assessment has not captured the cumulative traffic volumes associated with the construction of the CWO REZ Transmission Line at the Merotherie Road and Golden Highway intersection. To understand the traffic implications with both projects the traffic assessment must be revised to include the background and turning traffic volumes associated with the Merotherie Road/Golden Highway intersection that are attributed to the CWO REZ Transmission Line.

Nearby developments for cumulative traffic impacts have been assessed, and this is described in Section 6.4.2 (iii) of the Modification Report and Section 4.4 of the TIA (Appendix H of the Modification Report).

As described, the construction of only one project is expected to coincide with the peak construction period of the project in 2029, which is the proposed Sandy Creek Solar Farm. Only the Golden Highway / Merotherie Road intersection has been assessed for cumulative traffic in 2029 with Sandy Creek Solar Farm as there is no other concurrent development traffic anticipated along Merotherie Road or BBRS.

With reference to the CWO REZ Transmission Project (Merotherie Hub), the Traffic and Transport Management Plan (Rev 041) released in May 2025 (ACEREZ 2025) for that project provides a detailed timeline of construction for the Merotherie Energy Hub and Merotherie workforce accommodation facility, which are adjacent to the Birriwa Solar and Battery Project. The construction of the Merotherie workforce accommodation facility is anticipated to fall between the period of October 2025 and 2028 (ACEREZ 2025), and at the time of writing this

report, the construction of the CWO REZ Transmission Project has commenced as planned. If the construction timeframe of the Merotherie workforce accommodation facility and Merotherie Energy Hub was to extend, there is a possibility that the peak construction period of the Birriwa Solar and Battery Project may overlap with the Merotherie Energy Hub and workforce accommodation facility development.

In relation to potential cumulative traffic impacts with the CWO REZ Transmission Project, there are three aspects to consider: the Merotherie Road / BBRS intersection, the Golden Highway / Merotherie Road intersection, and the required upgrades along Merotherie Road between the Golden Highway and BBRS.

As discussed in Section 4.4 of the TIA (Appendix H), given that the Network Operator will have completed its activities along BBRS by the time road upgrades are commenced for the Birriwa Solar and Battery Project, there will be no cumulative traffic or impact associated with Merotherie Road/BBRS intersection between the Birriwa Solar and Battery Project and the CWO REZ Transmission Project (Merotherie Energy Hub and Merotherie workforce accommodation facility).

The Golden Highway / Merotherie Road intersection is currently being upgraded by the Network Operator as per the Traffic Management Plan (ACEREZ 2025). Upgrades are expected to be completed in late October 2025[3]. Channelised left and right turn bays will be provided on the Golden Highway. This is the maximum order of turn treatment as per Austroads. Therefore, if construction traffic movements related to the Birriwa Solar and Battery Project were to coincide with construction of the CWO REZ Transmission Project, given this intersection is being upgraded to the highest level of treatment, no further upgrade would be required.

Similarly, in relation to the upgrade of Merotherie Road (between the Golden Highway and BBRS), a 9 m sealed width (3.5 m wide travel lanes and 1 m sealed shoulders on both sides) is proposed to be provided by the Network Operator. This would be sufficient for up to 3,000 daily vehicle volumes according to Austroads road width requirements. Since there will be less than 3,000 daily vehicle volumes when the background traffic, Birriwa Solar and Battery Project traffic and the CWO REZ Transmission Project traffic are considered, no additional upgrade would be required beyond that being undertaken by the Network Operator.

Traffic associated with the project will utilise the proposed alternative access along BBRS during the construction of the accommodation facility, which is anticipated to be in approximately Q2 of 2026 (refer to Section 3.7 of the Modification Report). Hence, this will occur after the intersection of Merotherie Road and Golden Highway, and the section of Merotherie Road between the Golden Highway and BBRS is fully upgraded by the Network Operator. Work is expected to be completed in August 2026[4].

iii Pre-construction timeframes

Confirm the timeframes for the pre-construction minor works and if there will be an overlap of the pre-construction minor works period with the construction period. If the overlap of the pre-construction and construction works period is representative of the worst-case scenario then the turn warrants assessment must be revised to assess the cumulative traffic volumes associated with the overlap of these periods.

The preconstruction and construction periods do not overlap with each other. Even if there were to be a minor overlap, the pre-construction will only occur over a few days and all traffic movements associated with the pre-construction will be restricted to occur during the off-peak traffic hours to minimise any traffic impact during the peak hours. Therefore, the turn warrants assessment already represents the worst-case scenario.

[3] https://media.caapp.com.au/pdf/6KNaIOEP0yAL/c57d1ee4-7fa1-4e2a-9cfe-72bcb4b42b82/Work%20notification%20-%20Merotherie%20Road%20upgrade.pdf

[4] https://media.caapp.com.au/pdf/6KNaIOEP0yAL/c57d1ee4-7fa1-4e2a-9cfe-72bcb4b42b82/Work%20notification%20-%20Merotherie%20Road%20upgrade.pdf

4.9.3 Vehicle movement terminology

The Instrument of Consent for Birriwa Solar Farm SSD-29508870 states the definition of a vehicle movement to be 'One vehicle entering and leaving the site'. This aligns with the definition typically used by DPHI. Thus, changing the meaning from 'movements' to 'trips' would be incorrect.

ACEN acknowledges DPHIs definition of a vehicle movement (in and out). An extract of condition B1 (August 16 2024) is provided below.

PART B ENVIRONMENTAL CONDITIONS

TRANSPORT

Heavy Vehicles Requiring Escort and Heavy Vehicle Restrictions

B1. The Applicant must ensure that the:

(a) development does not generate more than:

(i) 120 heavy vehicle movements a day (a maximum of 27 heavy vehicle movements per hour) during construction, upgrading, or decommissioning;

(ii) a total of 6 movements of heavy vehicles requiring escort during construction, upgrading, and decommissioning;

(b) length of any vehicles (excluding heavy vehicles requiring escort) used for the development does not exceed 26 metres,

unless the Planning Secretary agrees otherwise.

B2. The Applicant must keep accurate records of the number of heavy vehicles requiring escort and heavy vehicles entering or leaving the site each day for the duration of the project.

To allow for the increase in the total number of daily vehicle movements (30%) and the split between access points, the condition (B1) should be updated as follows:

The Applicant must ensure that the:

(a) Development does not generate more than:

(i) 156 heavy vehicle movements a day, that is, 156 vehicles traveling into site and 156 travelling out.

4.9.4 Traffic Management Plan

Communication and mitigation measures between the Applicant and bus operators impacted by the use of the proposed additional route is to be included within the post-consent Traffic Management Plan.

ACEN acknowledge TfNSW's advisory note relating to communication between ACEN and the bus operator, and that mitigation measures relating to the alternative access are to be included within the TMP.

4.10 Conservation Programs, Heritage and Regulation Group

The Biodiversity Development Assessment Report (BDAR) has been revised in response to advice and comments received within CPHRs submission (25 September 2025) and is included as Appendix E to this report.

Comments from CPHR (25 September 2025) and where they have been addressed within the revised BDAR and this report are provided in Table A.3 of Appendix A.

4.10.1 BC Act certification and submission requirements including consistent credit summaries

i BC Act certification and supporting data

The revised BDAR must meet BC Act certification and submission requirements. Ensure certification and data provision meet BAM requirements, and credits in the BDAR and BAM-C cases match. The BDAR must be certified by the accredited assessor within 14 days of submission of the application, and submitted within 14 days of the date shown on the finalised credit report generated from the BAM calculator (CAM-C) case. All supporting data listed in Tables 24 and 25 of Appendix K of the BAM must be supplied at the time of BDAR submission to enable CPHR review. The EMM BDAR incorporates an earlier un-certified ELA BDAR for Birriwa Bus Route South (BBRS). We have not reviewed this draft version of the ELA BDAR.

The Birriwa Solar and Battery Project Modification Report including the Biodiversity Development Assessment Report was submitted to DPHI on Friday 6 June 2025 (certified) and exhibited from 15 August 2025 to 29 August 2025. ACEN received submissions from DPHI on 4 September 2025 and the CPHR submission on 29 September 2025.The BAM calculator (BAM-C) was finalised and submitted on 20 August 2025. The BDAR was re-certified on 4 September and a draft version of ELAs (2024) BDAR was incorrectly appended. Nevertheless, it is noted CPHR reviewed ELAs (2025) certified BDAR version.

The ELA BDAR has been revised and consolidated into the revised BDAR, attached to this report (Appendix E). The following has been revised, re-certified and sent to DPHI and CPHR:

- the BDAR
- credit reports
- BAM-C
- spatial data
- field plot data sheets

ii Consistent credit summaries

Credit summaries within both BDARs submitted do not match the final BAM-C case for the BBRS stage of the modification. Spatial data was supplied to CPHR in stages, and outstanding spatial data is referenced in the relevant section of this response. We do not have access to the required plot data sheets supporting the BBRS assessment.

It is acknowledged that the credit summarises within both BDARs submitted did not match the final BAM-C case for the Birriwa Bus Route South (BBRS). This has been updated in the revised BDAR.

All spatial data relating to the additional lots and BBRS has been uploaded to the BAMC, including BBRS field plot data sheets.

4.10.2 Review key assessment information and BAM-C cases to ensure consistency and correct application of the BAM

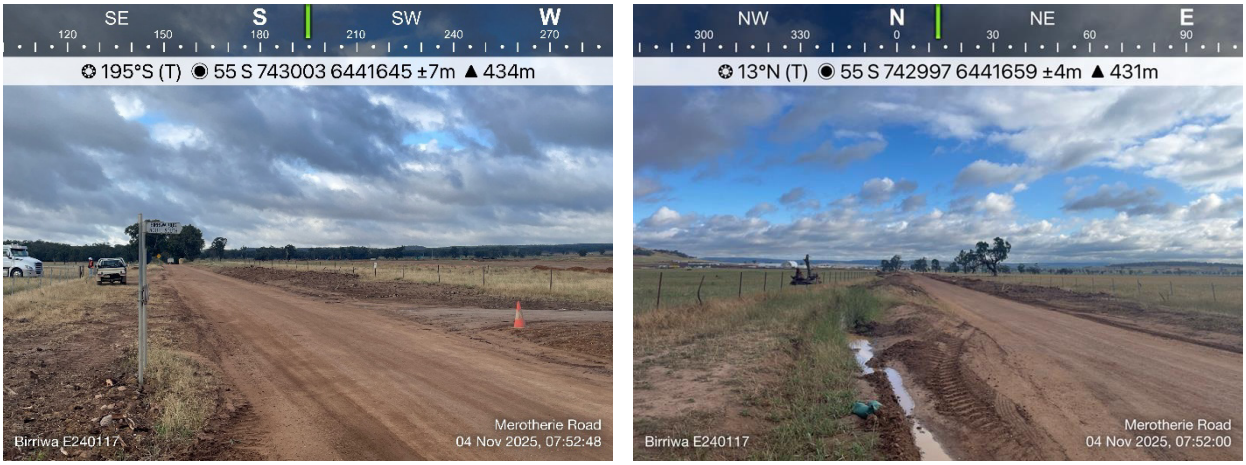
i Merotherie Road/BBRS intersection

CPHR are unable to confirm whether the BAM has been applied to the entire area being directly impacted by the modification. Additional direct impact areas are suggested within the Modification Report and Appendix H (Traffic Impact Assessment), outside the development footprint depicted within the BDAR. Some impacts are indicated for areas stated to be avoided.

The Modification Report and TIA state that the proponent will be upgrading the Merotherie Road/BBRS intersection, in addition to the proposed upgrade of BBRS. Both reports indicate this work forms part of the proposed modification and is subject to final design to the satisfaction of Mid-Western Regional Council. The Modification Report and TIA indicate potential impacts associated with the road intersection upgrade, which are not addressed in either BDARs provided. As outlined in the TIA:

The site distances on Merotherie Road from BBRS have been estimated based on the line of sight, as shown in Figure 6.4 of the TIA. Based on the sight distance analysis, a number of mature trees may require removal on the western side of Merotherie Road as circuled in Figure 6.4 of the TIA, as per the final design to the satisfaction of Mid-Western Regional Council.

An additional site visit was conducted on 3-4 November 2025 to assess the additional areas identified in the Modification Report and Appendix H (Traffic Impact Assessment). During the field survey, it was observed that the vegetation that required clearing for line of sight at the Merotherie Road/BBRS intersection had been cleared for works associated with the Central West Orana (CWO) Renewable Energy Zone (REZ) Transmission Project (SSI-48323210) (see Photograph 4.1).



Photograph 4.1 Cleared vegetation at Merotherie Road intersection facing south (left image) and north (right image)

Accordingly, the modification area and modification development footprint has been updated on all figures in the revised BDAR to account for the Merotherie Road/BBRS intersection upgrade. However, no native vegetation has been mapped in the intersection, with a justification for a departure from the previous mapping and aerial photography provided in the BDAR.

ii Creek crossings

Figure 1.2 of the EMM BDAR marks proposed locations for creek crossings. Figure 1.3 of the Modification Report indicates creek crossings would include electrical cabling and 10 m wide access track, to a combined width of 40 m. The proposed crossing locations are all on land outside of the disturbance footprint assessed under the BAM.

The modification development footprint has been amended on all BDAR figures (and modification submission report figures) to include an approximate 40 m wide track where creek crossings would be installed. The areas of native vegetation intersected by these creek crossings have been included in the vegetation zones, considered in the impact assessments and included in the revised BAM calculations.

iii Paddock trees

Page 50 of the BDAR states 'Although woodland areas outside of the additional lots are to be retained, isolated paddock trees within the additional lots may be removed to facilitate the project'. This is the only reference to removal of trees from the additional lots and no trees are represented in BAM plot data from those lots. It is not clear if this is a reference to impacts from the creek crossings marked outside of the mapped development footprint.

The paddock trees in the additional lots have been delineated on the PCT map (Figure 4.1 of the revised BDAR) from pasture and have been included in PCT 281 woodland vegetation zone. The PCT description for 281 woodland (Section 4.3 of revised BDAR) has been updated in the BDAR to reflect the paddock tree species encountered and their inclusion justified. These trees are part of the revised modification development footprint and as such are assumed to be cleared

4.10.3 Review native vegetation cover percentage

i Additional lots

The native vegetation cover percentage may have been under-estimated for both project stages. If reassessment of the native vegetation percent cover within the buffer area for either project stage results in an increase in the applicable cover class (i.e. the estimated percent cover increases to >10%), there may be a chance to the predicted threatened species list within the relevant BAM-C case. The BDAR must align with any revisions within the BAM-C cases.

EMM calculated native vegetation cover of 8.8% (0-10 cover class) within the 1,500 m assessment area buffer for the additional lots. There are several areas that appear to contain woody native vegetation that have not been included in the native vegetation cover class mapping.

The woody vegetation excluded by EMM as non-native appears to include the native vegetation mapped by ELA within the BBRS disturbance footprint.

Also, the EMM-mapped extent of non-woody native vegetation excludes without explanation, some areas mapped as native by EMM in data supplied with the BDAR for the approved Birriwa Solar project. Regardless of any adjacent project approvals, if native vegetation is currently present it should be included in the native vegetation percent cover calculations.

EMM has revised the native vegetation extent layer for the 1,500 m assessment area relating to the additional lots. This now includes all native vegetation mapped in the subject land by EMM in the additional lots and all vegetation mapped by ELA along BBRS. Native vegetation recently cleared at the Merotherie Road/BBRS intersection for the CWO REZ Transmission Project (see Section 4.10.2) has been excluded from the native vegetation extent layer, for the purposes of recalculating the native vegetation cover percentage.

The revised native vegetation cover percentage for the 1500 m assessment area relating to the additional lots is 12%. This has been updated in Section 3.2.1 and Figure 3.1 of the revised BDAR, and in the revised BAM calculator.

ii BBRS

ELA calculated a native vegetation cover percentage of 3%, with EMM reporting a cover percentage of 5% (0-10 cover class). The ELA BDAR does not explain the approach taken for estimating native vegetation extent within this assessment area.

We do not have the spatial data to verify these calculations. However, comparison with aerial imagery and the EMM vegetation mapping for the additional lots indicates it is likely that ELA have also underestimated the native vegetation percent coverage for the BBRS stage.

EMM has revised the native vegetation extent layer for the 500 m assessment area relating to BBRS. This now includes all native vegetation mapped in the subject land by EMM in the additional lots and all vegetation mapped by ELA in the BBRS. Native vegetation recently cleared at the Merotherie Road/BBRS intersection for the CWO REZ Transmission Project (see Section 4.10.2) has been excluded from the native vegetation extent layer, for the purposes of recalculating the native vegetation cover percentage.

The revised native vegetation cover percentage for the 500 m assessment area relating to BBRS is 11%. This has been updated in Section 3.2.1 and Figure 3.1 of the BDAR, and in the BAM calculator.

4.10.4 Review the patch size calculation

i Patch size calculation method

The patch size calculation is used within the BAM-C to filter predicted threatened species. Patch size may extend onto adjoining land that is not part of the development site. The EMM BDAR estimates a patch size of 99 hectares for the additional lots stage, and the ELA patch size for the BBRS stage is 5 hectares.

Neither BDAR explains how these patch sizes were determined for the vegetation zones assessed, and the required patch size map is not provided. The patch size estimate for the BBRS may not have accounted for the adjacent derived native vegetation mapped on the southern additional lot by EMM.

In the revised BAM calculations and BDAR, EMM has assigned a patch size of 101 ha, which is the maximum patch size allowable in the BAM. This conservative approach is taken to ensure all candidate species associated with the PCTs are generated, and discounted either by geographic constraint, absence of microhabitat or targeted survey. The largest patch size of connected native vegetation represents the combined native vegetation of the south-eastern additional lot and BBRS. As the maximum patch size class was selected, this was not shown on the figures in the BDAR.

4.10.5 Review vegetation zone mapping, plot allocation and BAM-C data entry

i Additional lots stage – vegetation zone delineation

It is unclear how areas considered to meet the BAM s.4.1.2 measure of 'not native' (i.e. no native vegetation present) have been distinguished from the single vegetation zone 'PCT 281 DNG' in the additional lots BAM-C case. Rapid plot data points are not available for comparison with the BAM plot data for the mapped vegetation zone.

Page ES.5 of the EMM BDAR also indicates a VI score was generated for the 'exotic' that was below the offsetting threshold, however no evidence is provided and no BAM plots are indicated for the 'exotic' area.

EMM Plot 1 on the additional lot north of the BBRS is used to represent the zone PCT 281 DNG but appears to be partly located on land mapped as 'exotic' and excluded from credit calculations.

Three plots (Plots 9, 10 and 11) were undertaken in pasture on the additional lots on 3 and 4 November 2026 which are shown on Figure 4.1 and provided in Appendix C of the BDAR. These plots were undertaken to record the floristics, quantify the vegetation integrity score and justify its mapping as non-native vegetation.

The vegetation integrity (VI) score for pasture was found to be 3 (see Plate 4.1), which is well below the threshold for offsetting.

IMPORT SITE Vegetation zones (Current vegetation integrity score)

#	Import	PCT code	Condition class *	Vegetation zone name	Patch Size*	Area (ha)*	Location *	Composition condition score	Structure condition score	Function condition score	Current vegetation integrity score	Management zones	Delete
1		281 - W	DNG	281_DNG	101	66.2		36.9	55.2	2.9	18		
2		281 - W	Poor	281_Poor	101	3.5		48.9	88	16.7	41.6		
3		281 - W	Pasture	281_Pasture	101	4		28.1	0.1	0	3		

Plate 4.1 Excerpt from the BAM-C for additional lots showing low VI score for pasture

The land within this vegetation zone has experienced many forms of agricultural utilisation, including canola and barley cropping, as well as cropping/sowing of pasture-improving Ryegrass species in areas currently grazed by cattle. Due to past and ongoing disturbance, there is a high exotic species cover in areas, which have been cropped and in adjacent areas. Little to no native seedbank exists within these areas with native cover recorded

as less than 5% across all pasture BAM plots. The majority of groundcover was dominated by exotic species with an average of 88.6% across all pasture plots.

Exotic species found in high abundance include Wimmera Ryegrass (*Lolium rigidum*), Soft Brome (*Bromus hordaceus*), *Avena sativa* (Oats), Canola (*Brassica napus*), Wall Fescue (*Vulpia muralis*), Catsear (*Hypochaeris radicata*), Purpletop (*Verbena bonariensis*), Flaxleaf Fleabane (*Conyza bonariensis*), Lamb's Tongues (*Plantago lanceolata*) and Subterranean Clover (*Trifolium subterraneum*). The pasture vegetation zone also had a number of high threat exotics prevalent including African Lovegrass (*Eragrostis curvula*), St Johns Wort (*Hypericum perforatum*), Paspalum (*Paspalum dilatatum*) and Saffron Thistle (*Carthamus lanatus*). Nearly 10% of exotic coverage was comprised of high threat exotics within the pasture plots.

ii BBRS – allocation of BAM plots to vegetation zones

The plot allocation to vegetation zones between the GIS data, BDARs and the BAM-C case for the BBRS is presented in Table 3 of the CPHR submission.

The EMM BDAR does not detail the allocation of BAM plots to the BBRS vegetation zones, deferring instead to the ELA BDAR. However, the plot allocation to zones set out in the ELA BDAR differs from the plots entered for each zone in the BAM-C case for this stage. The BDAR should confirm whether this is an error, or whether EMM have made alternative decisions on the representativeness of plots and vegetation zone delineation to those made by ELA.

A single ELA BAM plot (Plot 6) has not been used in the BAM-C, with the ELA BDAR noting that it spanned two vegetation zones. However, there are two other plots used in the assessment, which may also pass through other vegetation zones. No explanation is provided.

During revision of the BDAR, plot allocation was clarified by ELA with regards to BBRS. ELA modified the dimensions of some plots to fit within the road reserve, comprising:

- Plot 7 start and finish was located in DNG. (modified 10 x 100 m plot).
- Plot 3 start and finish was located in Woodland (20 x 50 m plot).
- Plot 5 start and finish was located in Woodland (modified 10 x 100 m plot).

Plot 6 started in woodland and finished in DNG (modified 10 x 100 m plot) and therefore was removed from credit calculations.

During EMM's further consolidation of the two BDARs, it was found that Plot 7 at BBRS was inconsistent with the vegetation mapping of 281 woodland and was in fact 277 DNG (acknowledged on the ELA plot datasheet and shown in Photograph 4.2). The vegetation mapping for BBRS was adjusted accordingly during revision of the BDAR. Plot 3 at BBRS had also been incorrectly assigned to 277 woodland in the BAM-C and has now been correctly assigned to 281 woodland in the BAMC, consistent with ELA's vegetation mapping for BBRS.

Photograph 18: Plot 7 - Start

Photograph 19: Plot 7 - End

Photograph 4.2 Excerpt of Plot 7 start and end photographs from ELA BDAR

iii BBRS – hollow bearing trees are not represented in the plots used in the assessment

The ELA BDAR states that 53 hollow bearing trees (HBTs) were identified in the BBRS footprint and there will be a reduction in HBTs. Whilst unclear, the EMM BDAR implies that all hollow bearing trees have been avoided. None of the plots in the BAM-C contain HBTs. The only BAM plot which recorded a HBT was Plot 6, which, as noted above, has not been used within the BAM-C case. Accurately recording the presence of HBTs is important to ensure the credit profile for ecosystem credits records this for offsetting requirements.

For the purposes of the revised BDAR and BAM calculations, the 53 HBTs identified in the BBRS footprint are assumed to be impacted. Notwithstanding, ACEN will continue discussions with Mid-Western Regional Council

that commenced on 17 April 2025 (see Appendix C of the revised BDAR) and look for opportunities to further avoid impacts to hollow-bearing trees through the final road design.

To address CPHR requirements, EMM has included the presence of HBTs into the BAM-C for plots in woodland vegetation zones to accurately reflect the number of ecosystem credits required.

4.10.6 Undertake comprehensive review of the candidate species assessment

i Issues identified in the candidate species assessment

Revision of BDAR tables, supported by spatial data, will be required to clarify and confirm relevant candidate species, habitat suitability assessment and adequacy of survey effort.

CPHR has deferred full review of survey effort until the requested clarifications and revisions have been made. However, additional species polygons may be required for two bat species. It appears that only four predicted threatened species are completely removed from the assessment for the modification due to absent or degraded habitat or microhabitat. The remainder of species exclusions appear to only relate to the additional lots stage of the modification. Table 4 of CPHR submission highlights issues currently identified for several species.

The issues identified by CPHR within the candidate species assessment are provided in Table 4.9 and have been clarified accordingly.

Table 4.9 Candidate species assessment clarifications

Species	Issues identified by CPHR	Clarification
Bluegrass (*Dichanthium setosum)*	The Threatened Biodiversity Data Collection (TBDC) survey window is November-May three to four weeks after effective rainfall. Confirm in the BDAR whether surveys were undertaken during suitable survey conditions to maximise detection of this species. Also, confirm the suitability of the 'exotic pasture' as habitat in addition to the currently mapped vegetation zones.	Surveys were undertaken on 20-22 May 2024 for the BDAR. Above average local rainfall occurred in March prior to survey. *Dichanthium sericeum* was noted to be abundant during the survey, with actively growing tussocks, suggesting that site and weather conditions at the time of survey were optimal for detecting *Dichanthium sp*. Accordingly, surveys were undertaken during suitable conditions to maximise detection of the species. *Dichanthium sericieum* was recorded in Plot 1 and Plot 3 of the additional lots, however no Bluegrass was recorded. Exotic pasture (Plots 9 to 11 in the additional lots, provided in Appendix A of the revised BDAR) did not represent habitat for Bluegrass, and contained very defined rows of crops, as shown in Photograph 4.3.

Species	Issues identified by CPHR	Clarification
Pomaderris cotoneaster	BDAR Table 5.2 indicates this species was included as a candidate species for further assessment, however Table 5.5 of the BDAR does not include this species as a species that had targeted surveys completed. The relevant BAM-C case retains this species as a candidate species and further excludes it based on surveys completed in October. Review this species to ensure the BDAR and BAM-C case are consistent with any surveys undertaken.	For consistency with Table 5.2 of the BDAR, the BAM-C case for the additional lots has been updated to exclude *Pomaderris cotoneaster* from the candidate species assessment based on the geographic constraint.
Large-eared Pied Bat (foraging and breeding) (*Chalinobolus dwyeri)*	There is confusion in the assessment for this species. Both BAM-C cases say that this species was not recorded in the ELA surveys but the spatial data and ELA Table 4.11 report the species was positively identified from Anabat results. Spatial data supporting the conclusions of the EMM BDAR and ELA BDAR regarding the presence or absence of the habitat constraint for this species within 2km of the development footprint is not provided. Whilst an EMM shapefile for a species polygon for this species is provided, no species credits have been calculated. The EMM BDAR indicates these credits are not required because they consider the DNG to not provide foraging habitat. This is incorrect. Where this species is recorded or assumed present, prepare a species polygon taking in all associated PCTs within a 2km buffer of the identified habitat constraint.	The Large-eared Pied Bat was recorded by ELA in BBRS. In accordance with 'Species credit' threatened bats and their habitats, a topographic map and aerial image has been used to map potential breeding habitats in Barney's Reef Rock Formation, which will not be impacted by the project. As the species has been recorded, A 2 km buffer has been placed around the breeding habitat to define the species polygon, which represents foraging habitat. A portion of the native PCTs in the additional lots intersects the 2 km buffer. The BDAR and BAMC cases for the additional lots has been updated. Native vegetation in BBRS does not fall within the 2 km buffer.
Eastern Cave Bat (*Vespadelus troughtoni*)	The ELA BDAR Table 4-11 and EMM BDAR Table 5.8 state that this species was potentially recorded in the ELA Anabat results for BBRS. Figure 4-1 of the ELA BDAR shows other recordings of the species within a 10km radius of the site. The ELA BDAR concludes that a species polygon is not required because the development footprint is not located within 2km from 'caves and cliffs' and 'any cave or cliff line features used by these species'. The EMM BDAR (Table 6.1) notes that a small building providing a potential roosting site for microbats 'from time to time' will be demolished on the additional lots. Neither the BDAR nor the BAM-C cases include this species as a predicted or candidate species. Further justification is required to explain the lack of s species polygon for this species.	The Eastern Cave Bat was recorded by ELA in BBRS. In accordance with 'Species credit' threatened bats and their habitats, a topographic map and aerial image has been used to map potential breeding habitats in Barney's Reef Rock Formation, which will not be impacted by the project. As the species has been recorded, A 2 km buffer has been placed around the breeding habitat to define the species polygon, which represents foraging habitat. A portion of the native PCTs in the additional lots intersects the 2 km buffer. The BDAR and BAMC cases for the additional lots has been updated. Native vegetation in BBRS does not fall within the 2 km buffer.
Southern Myotis (*Myotis macropus*)	This species was carried forward as a candidate species in the additional lots BAM-C case but excluded as a candidate species in Table 5.2 of the EMM BDAR. Farm dams are present and a potential detection of this species is noted in the ELA BDAR along BBRS. Ensure the BDARs and BAM-C cases are consistent.	Table 5.2 of the revised BDAR has been updated to reflect that Southern Myotis is included as a candidate species, consistent with the additional lots BAM-C case.

Species	Issues identified by CPHR	Clarification
Keys matchstick grasshopper (*Keyacris scurra*)	The ELA BDAR indicates September surveys for this species. The BAM-C case for the BRRS records surveys for this species being undertaken in January, March, April, July and November. Clarify survey timing and ensure the BDAR and BAM-C are consistent.	The BAM-C case and candidate species assessment in the BDAR for BBRS has been updated to reflect the September surveys for this species.

Photograph 4.3 Exotic pasture

4.10.7 Clarify and confirm avoidance measures, indirect and prescribed impacts and mitigation measure

i Clarification of avoidance measures

Sections 7.1 and 7.2 of the BAM require consideration of strategies and actions that may be taken to avoid or minimise impacts on biodiversity values.

Whilst unclear, the modification report suggests final road upgrade design endorsement by Mid-Western Regional Council is still pending. The ELA BDAR states that the road upgrade footprint has been refined based on consultation with the council. ELA report that the BBRS footprint has been modified to avoid the removal of as many trees as possible, resulting in avoidance of 3.45 ha of native vegetation (page 65). The original and revised footprint extent are not provided for comparison. It is not clear whether this avoidance accounts for the difference in the extent of the *'subject land (modification development footprint)'* and the '*Study area (modification area)'/ 'Birriwa Bus Route South (Assessed by ELA)'* mapped along BBRS in Figure 1.2 of the EMM BDAR (excerpt in Figure 3 under Issue 2 above).

The ELA BDAR (page 66) also states that alternative locations and routes were assessed, however those alternatives, the relative biodiversity impacts, and reasons for rejection are not indicated in the BDARs or modification report.

Section 6.3 of the revised BDAR clarifies the avoidance, minimisation and mitigation strategy for the modification.

ELA surveyed the BBRS "study area" shown on Figure 1.2 of the revised BDAR to determine a placement that best avoided/minimised direct impacts on White Box Yellow Box Blakely's Red Gum Woodland and hollow-bearing trees. The study area for BBRS contains a total of 6.32 ha of native woodland and DNG zones of PCT 277 and 281, 2.85 ha of which will be directly impacted by BBRS, and 3.47 ha which will be avoided/minimised (Table 4.10).

Accordingly, this avoidance accounts for the difference in the extent of the *'subject land (modification development footprint)'* and the '*Study area (modification area)'/ 'Birriwa Bus Route South (Assessed by ELA)'* mapped along BBRS in Figure 1.2 of the EMM BDAR.

Table 4.10 Avoidance for BBRS

Condition	PCT	Study area (ha)	Impacted (ha)	Avoidance (ha)
DNG	277	1.51	0.55	0.96
Woodland	277	1.00	0.57	0.44
DNG	281	0.59	0.35	0.24
Woodland	281	3.22	1.38	1.84
Total		**6.32**	**2.85**	**3.47**

All trees within the study area for BBRS were geo-referenced by a surveyor to ensure the road design avoids removing trees where possible. Accordingly, the 3.47 ha avoided prioritises protection of large *Eucalyptus blakelyi* with good quality hollows conforming to listed critically endangered ecological community of White Box – Yellow Box – Blakely's Red Gum Grassy Woodland and Derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions and foraging habitat for the Masked Owl and Southern Myotis.

Engagement with Mid-Western Regional Council has informed design considerations that avoid impacts on some hollow bearing trees (HBTs) along the BBRS. The current design and layout will impact less native vegetation than

the original concept plan for the road design. The original design cannot be shown for privacy reasons, however correspondence with MWRC is attached at (see Appendix C of the revised BDAR).

For the purposes of the revised BDAR, it is conservatively assumed that 2.85 ha of native vegetation within the subject land would be impacted. Notwithstanding, ACEN will continue discussions with Mid-Western Regional Council that commenced on 17 April 2025 and look for opportunities to further avoid impacts to native vegetation and hollow-bearing trees through the final road design.

4.10.8 Revision of the indirect and prescribed impact assessments and proposed mitigation measures required to address inconsistencies and meet BAM requirements

i Indirect impact assessment

The assessment of indirect impacts, prescribed impacts and identification of mitigation measures does not meet BAM requirements. Inconsistencies and incomplete integration exist between the two BDARs.

An assessment of indirect impacts for the BBRS stage is presented in Table 8-4 of the ELA BDAR. The EMM BDAR does not provide an equivalent assessment covering the entire modification. The EMM BDAR provides a high-level list of indirect impacts on page 59 and also notes some indirect impacts within a table of suggested avoidance and minimisation strategies (Table 6.2). Most references within that table appear focussed on the additional lots stage.

Section 6.3 and Table 6.3 of the revised BDAR provides a detailed assessment of indirect impacts for the entire subject land, comprising measures relating to the additional lots and BBRS.

ii Prescribed impact assessment

The prescribed impact assessment requires consolidation and review against BAM requirements.

The EMM BDAR indicates the prescribed impacts of the project include vehicle strikes and acknowledges there will be increased traffic during construction activities, but the 'description and location' and the associated threatened species stated to be 'N/A'. The ELA BDAR acknowledges an expected increase in traffic in both construction and operational phases of the project and specifically identifies the masked owl as a threatened species at risk of vehicle strike.

Neither assessment acknowledges the actual extent and degree of traffic increase, presented in Table 4.1 of the Traffic Impact Assessment. It is not clear from either BDAR whether the full extent of traffic increase under the modification has been considered within the prescribed impact assessment, or only that specifically associated with the section of BBRS proposed for upgrade.

Mitigation measures are proposed to address vehicle strike risks – for the construction phase only in the EMM BDAR, and for the construction and operation phases in the ELA BDAR. Neither assessment identifies the residual impact post implementation of proposed mitigation measures.

Section 3.1 of the Traffic Impact Assessment (TIA) notes that *"As per Transport for NSW's (TfNSW) advice on the approved Birriwa Solar and Battery project, the traffic assessment has been undertaken based on the background traffic volumes during the network peak times while applying the project's traffic volumes during the site peak times. This means this traffic assessment is very conservative (worst case scenario)."*

Section 3.3 of the Traffic Impact Assessment notes that *"…the Golden Highway/Merotherie Road intersection carried under 100 vehicles in both the peak hours with a slightly eastbound dominant flow in the AM peak and vice versa in the PM peak. The existing traffic volume at Merotherie Road/Birriwa Bus Route South is very low, with less than five vehicles in both the AM and PM peak hours*". Section 4.3.1 of the TIA also notes that *"The construction of the accommodation facility will occur prior to construction of the BESS component of the project. As such, traffic associated with the construction of the accommodation facility is not included in the analysis for the modification".*

Accordingly, the increase in traffic impacts and potential vehicle strike on fauna has only been considered relevant to the construction impacts of Table 4.1 in the TIA.

Key assumptions for traffic movements in the TIA comprise:

- for the construction of the BESS and solar infrastructure - 20% of daily heavy vehicles generating during the peak hours
- for the operation of the accommodation facility - 50% of daily heavy vehicles generating during the peak hours
- for the construction of the BESS and solar, light vehicles generation AM peak inbound and PM peak outbound - all movements generating during the AM and PM peak hours.

There is potential for increased fauna vehicle strikes during construction and operation along BBRS, Castlereagh Hwy/Barneys Reef Rd intersection, Rd/Birriwa Bus Route South intersection given the expected increase in heavy and light vehicle movements.

During weekdays, the construction hours are 7am to 6pm, meaning that construction workers will arrive between 5-6am before the 7am start. There will be increased traffic movements during the early morning and evening.

Threatened species recorded during surveys for the proposed modification were all nocturnal (Masked Owl, Eastern Cave Bat, Large-eared Pied Bat, Southern Myotis, Large Bent-winged Bat, Yellow-bellied Sheathtail Bat). There is potential for increased wildlife collisions during the winter months when daylight hours are shorter. However, as bats are typically in torpor during the winter months, this would limit potential collisions to the Masked Owl.

The prescribed impact assessment in Section 6.2 of the revised BDAR has been updated to acknowledge vehicle strike impacts related to construction of the solar and BESS and operation of the accommodation facility during the construction phase of the solar and BESS. A Traffic Management Plan would be developed for the modification including speed limits, reductions to driving at night, and wildlife awareness training to mitigate the risk of vehicle strike on threatened species and other native fauna. The residual risk remains of potential collisions with the Masked Owl if present in the area during the winter months.

Mitigation measures have been provided for both the construction and operational phases for both the additional lots and BBRS and the residual impact post-implementation of the proposed mitigation measures. The residual impact post-implementation of proposed vehicle strike mitigation measures is provided in Table 6.2 of the revised BDAR.

iii Mitigation measures

The proposed mitigation measures require review and consolidation to ensure clarity, consistency and compliance with the BAM.

ELA present a list of specific mitigation measures for the BBRS upgrade (page 74 and Table 8-5). Table 6.2 of the EMM BDAR presents 'minimisation measures'. Not all of the ELA proposed mitigation measures are represented in the EMM BDAR, which was to cover both stages of the proposed modification. For example, EMM Table 6.2 does not specifically address tree removal as the additional lots stage only impacts groundcover. In contrast ELA propose staged tree removal and 2:1 replacement of hollows removed with nest boxes. Nest boxes are not mentioned in the EMM BDAR. Similarly, the EMM BDAR Table 6-3 'Adaptive Management Strategy' only proposes protective fencing for 'PCT 281_poor' to be retained on the additional lots and monitoring this Box- Gum Woodland CEEC condition against a baseline assessment.

It is unclear in the EMM BDAR if exclusion of some ELA proposed mitigation measures is in error, or the exclusions indicate those ELA measures are not proposed for implementation by the proponent. Similarly, it is unclear if measures only referencing the additional lots will also be implemented for BBRS.

Table 6.2 and Table 6.3 of the BDAR have been consolidated to include ELAs proposed mitigation measures. These changes are shown in bold. Appendix B and Table 4.3 includes amended mitigation measures as a result of the modification and ELAs inclusions, shown in bold. It is intended that the below measures would cover both project components (i.e. additional lots and BBRS) and be included in the construction Biodiversity Management Plan (BMP) for the project. The adaptive management strategy in Table 6.3 of the BDAR as well as Table 4.11 below has also be revised to cover both project components.

Table 4.11 Summary of mitigation measures

ID	Mitigation measures
Biodiversity	
BIO1	A biodiversity management plan (BMP) will be prepared for the project. The BMP will document the measures to avoid and minimise direct and indirect impacts to ecological values and natural assets. **The BMP will identify management of remnant vegetation that will be retained within the BBRS study area. The BMP will include adaptive management strategies to monitor and respond to prescribed and uncertain biodiversity impacts including indirect impacts on retained Box Gum Woodland, impacts on potential roosting habitat in buildings or threatened microbats, as well as potential impacts to unexpected finds, particularly threatened species.**
BIO2	Following construction, species consistent with PCT **277** and PCT 281 will be included in landscaping to increase the floristic and structural diversity of the land.
BIO3	Pre-clearance surveys will be conducted prior to removal of **potential fauna habitat including** hollow bearing trees, **with a suitably qualified ecologist/fauna spotter-catcher present during hollow-bearing tree felling** to mitigate injury to potential fauna species inhabiting hollows.
BIO4	**Clearing works will be timed, where practicable, to avoid critical life cycle events for fauna species, including but not limited to breeding and nursing of young.** **Timing clearing works to avoid critical life cycle events such as breeding or nursing or when migratory species are absent from the site– active breeding or nesting identified during pre-clearance surveys will be avoided in August, September and October, which is the breeding/nesting period for most fauna species.**
BIO5	**Where practicable, noise barriers will be implemented and/or works will be timed to limit the impact of noise from construction and operational activities.**
BIO6	**Where practicable, light shields will be implemented and/or construction works will be conducted during the day to limit the impact of light spill. No night lights will be used.** **Lights associated with operation will be positioned to avoid light spill into surrounding habitat, or adjacent retained vegetation, where possible.**

ID	Mitigation measures
BIO7	**Hollows from felled trees and hollow logs will be salvaged where possible for later re-use in rehabilitation.**
BIO8	**Prior to clearing, a hollow-bearing tree survey will be completed to determine the number and type of hollows to be impacted by the detailed design and nest boxes will be installed adjacent to the construction area at a 2:1 ratio to compensate for hollows lost to clearing.**
BIO9	Exclusion fencing ('no go' zones) will be used to avoid indirect impact to retained native vegetation. This includes temporary fencing, bunting tape or similar and signage to protect or avoid habitats to be retained. This will be maintained and checked daily through construction.
BIO10	All workers will be made aware of ecologically sensitive areas and the need to avoid impacts including adjacent native vegetation. **All personnel working on the project will undertake an environmental induction as part of their site familiarisation including site environmental procedures (vegetation management, sediment and erosion control, exclusion fencing and noxious weed management) as well as protocols in case of environmental emergencies (e.g. chemical spills, fire, injured fauna).**
BIO11	**Clearing protocols will be developed that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance (e.g. removal of native vegetation by chainsaw instead of heavy machinery where only partial clearing is proposed).**
BIO12	Chemicals and fuel will be managed in accordance with Safe Work Australia guidelines (e.g. employ use of barriers, inspecting tanks and containers, etc).
BIO13	Appropriate spill containment materials (or spill kits) will be used to clean-up spills if they occur. This will avoid unintentional impacts to Box Gum woodland, Grey Box woodland and native vegetation due to chemical or fuel runoff.
BIO14	Sediment controls, including fencing and sediments traps, will be installed in any areas where works will occur in proximity to waterways to avoid increased sedimentation and erosion of watercourses.
BIO15	**Appropriate controls will be implemented to manage exposed soil surfaces and stockpiles to prevent sediment discharge into waterways. All works within proximity to the drainage lines will have adequate sediment and erosion controls (e.g. sediment barriers, sedimentation ponds). Revegetation will also commence as soon as is practicable to minimise risks of erosion. Suitable species will be used as ground cover in any revegetation areas.**
BIO16	**Priority** weeds will be removed prior to clearing. Weeds will be stockpiled appropriately prior to removal from the study area to avoid the spread/introduction of seed and other propagules.
BIO17	Weed hygiene protocols will be put in in place prior to entering the site including wash-down procedures to all plant and machinery. This will avoid weed introduction from outside of the site.
BIO18	Coolatai Grass (*Hyparrhenia hirta*), and St. Johns Wort (*Hypericum perforatum*) are to be managed as per the *Biosecurity Act 2015* and their regional recommended measures (Section 7.3 of BDAR). If any other priority weeds of NSW are identified in the study area during construction, they will be removed from the site.
BIO19	Dust levels will be monitored and dust suppression strategies implemented where required, i.e. wetting down dirt roads or reducing vehicle speeds.
BIO20	**Revegetation will also be commenced as soon as practicable to minimise areas likely to create dust. Suitable species will be used as ground cover species in any revegetation areas.**
BIO21	**Regular inspection of waterway crossings for accumulation of debris which block fish passage, and removal of such debris if present.**
BIO22	**1. Implement structural features to dissipate high energy flow. These could include rock baffles or riparian areas prone to erosion.** 2. **Monitor banks and bed for signs of erosion.**
BIO23	**Install replacement habitats for fauna in adjacent retained vegetation and habitat or human made structures to replace the habitat resource lost relating to the loss of hollow bearing trees (HBTs) and encourage animals to move from the impacted site, e.g. nest boxes.**

ID	Mitigation measures
BIO24	A Traffic Management Plan will be developed for the modification including speed limits, reductions to driving at night, and wildlife awareness training to minimise risk of vehicle strike during the construction of the solar and BESS and operation of the accommodation facility during the construction phase of the solar and BESS when there is expected to be an increase in traffic movements.
BIO25	Weekly carcass monitoring will be conducted in road reserves within the project area for Masked Owl. Monitoring will be conducted during construction of the BESS and solar and operation of the accommodation facility.
BIO26	The adaptive management strategy in Section 6.3.2 of the BDAR will be included in the BMP.

Table 4.12 Suggested impact avoidance and minimisation strategy

Impact	Action	Intended outcome	Timing	Responsibility
Reduction in habitat critical to the survival of Box Gum Woodland	Project designed to avoid canopied areas of Box Gum Woodland	Prioritise retention of better-quality Box Gum Woodland and minimise impact on TEC resulting from modification **and continue discussions with MWRC to avoid and minimise impacts on BBRS through detailed design.**	Design	The Applicant
	Following construction, include species of **PCT 277 and** 281 into landscaping.	Increase the floristic and structural diversity present in the subject land to be consistent with **PCT 277** and 281.	Post-construction	Site manager Project ecologist Bush regeneration team leader
Reduction in or disturbance of potential habitat for threatened fauna	Project designed to avoid canopied areas of Box Gum Woodland **and hollow-bearing trees**.	Prioritise retention of better-quality fauna habitat and minimise impacts resulting from the modification.	Design	The Applicant
	Pre-clearance surveys, by a suitably qualified ecologist to be conducted prior to removal of potential fauna habitat e.g. demolition of buildings and hollow-bearing tree clearing, with ecologist or fauna-spotter catcher present during demolition and hollow-bearing tree clearing.	**Mitigate injury to potential fauna species inhabiting man-made structures.** **Any fauna utilising within the BBRS study areas will be identified and managed to ensure clearing works minimise the likelihood of injuring resident fauna** **Any healthy fauna captured during clearing would be released at a suitable location by the ecologist, with any injured or juvenile fauna taken to a wildlife carer.**	**Pre-construction**	**Site manager** **Project ecologist**

Impact	Action	Intended outcome	Timing	Responsibility
	Clearing works will be timed, where practicable, to avoid critical life cycle events for fauna species, including but not limited to breeding and nursing of young. **Timing clearing works to avoid critical life cycle events such as breeding or nursing or when migratory species are absent from the site– active breeding or nesting identified during pre-clearance surveys will be avoided in August, September and October, which is the breeding/nesting period for most fauna species.**	**Mitigate indirect impacts to fauna inhabiting retained and/or adjacent habitat.** **Impacts to fauna during nesting/nursing avoided.**	**Pre-construction**	**Site manager** **Project ecologist**
	Where practicable, noise barriers will be implemented and/or works will be timed to limit the impact of noise from construction and operational activities.	Minimise indirect impacts to fauna inhabiting retained and/or adjacent habitat.	Construction	Site manager Project ecologist
	Where practicable, light shields will be implemented and/or construction works will be conducted during the day to limit the impact of light spill. No night lights will be used. Lights associated with operation will be positioned to avoid light spill into surrounding habitat, or adjacent retained vegetation, where possible.	Minimise indirect impacts to fauna inhabiting retained and/or adjacent habitat. Light impacts of construction will be avoided as all works will occur during daylight hours. Light spill into adjacent vegetation is reduced.	Construction Operation	Site manager Project ecologist
	Hollows from felled trees and hollow logs will be salvaged where possible for later re-use in rehabilitation. **Prior to clearing, a hollow-bearing tree survey will be completed to determine the number and type of hollows to be impacted by the detailed design.** **Prior to clearing, nest boxes will be installed adjacent to the construction area at a 2:1 ratio to compensate for hollows lost to clearing.**	**Reduction in loss of natural hollows from the study area.** **Fauna have alternate hollows to occupy prior to clearing.**	**Pre-construction**	**Site manager**

Impact	Action	Intended outcome	Timing	Responsibility
Reduction in potential habitat for threatened flora	Project designed to avoid canopied areas of Box Gum Woodland	Minimise impact on potential threatened flora habitat resulting from the project.	Design	The Applicant
Removal of logs and debris from the subject land	**Retain hollow logs and debris to be used in rehabilitation, post construction.**	**Retain and improve potential fauna habitat within the retained vegetation in the subject land and adjacent study area.**	**Pre-construction** **Post-construction**	**Site manager** **Project ecologist**
Loss of riparian habitat and connectivity within the locality	Avoidance of riparian corridor of third order tributary of White Creek in lot 34.	Minimise impact on riparian and aquatic connectivity resulting from the project.	Design	The Applicant
Indirect impacts on native vegetation to be retained including Box Gum Woodland to be retained	All workers to be made aware of ecologically sensitive areas and the need to avoid impacts. This includes adjacent native vegetation. Clearing protocols will be developed that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance (e.g. removal of native vegetation by chainsaw instead of heavy machinery where only partial clearing is proposed). Exclusion fencing ('no go' zones) will be used to avoid indirect impact to retained native vegetation. This includes temporary fencing, bunting tape or similar and signage to protect or avoid habitats to be retained. This will be maintained and checked daily through construction.	Avoid unintentional impacts to Box Gum Woodland and other native vegetation. Vegetation to be retained outside of the modification development footprint will not be disturbed	Pre-construction Construction	The Applicant Site manager
	Temporary fencing to protect significant environmental features such as riparian zones – all potential waterway crossings will be designed in accordance with *Policy and Guidelines for Fish Friendly Waterway Crossing*, where appropriate.	Crossing constructed with negligible impacts to aquatic habitats.	Detailed design	Site manager

Impact	Action	Intended outcome	Timing	Responsibility
	All workers will be made aware of ecologically sensitive areas and the need to avoid impacts including adjacent native vegetation. **All personnel working on the project will undertake an environmental induction as part of their site familiarisation including site environmental procedures (vegetation management, sediment and erosion control, exclusion fencing and noxious weed management) as well as protocols in case of environmental emergencies (e.g. chemical spills, fire, injured fauna).**	Staff trained and aware of environmental issues and responsibilities on site	Construction	Site manager
	Chemicals and fuel will be managed in accordance with Safe Work Australia guidelines (e.g. employ use of barriers, inspecting tanks and containers etc.) use of appropriate spill containment materials (or spill kits) to clean-up spills if they occur.	Avoid unintentional impacts to Box Gum Woodland and native vegetation due to chemical or fuel runoff.	Construction	The Applicant Site manager
Erosion and sedimentation	Sediment controls, including fencing and sediments traps, should be installed in any areas where works will occur in proximity to waterways.	Avoid increased sedimentation and erosion of watercourses within the subject land.	Pre-construction	The Applicant Site manager
	Appropriate controls will be implemented to manage exposed soil surfaces and stockpiles to prevent sediment discharge into waterways. **All works within proximity to the drainage lines will have adequate sediment and erosion controls (e.g. sediment barriers, sedimentation ponds). Revegetation will also commence as soon as is practicable to minimise risks of erosion.** **Suitable species will be used as ground cover in any revegetation areas.**	**Erosion and sedimentation will be controlled**	Construction and decommissioning	Site manager

Impact	Action	Intended outcome	Timing	Responsibility
Weed introduction and spread	**Priority** weeds will be removed prior to clearing. Weeds will be stockpiled appropriately prior to removal from the study area to avoid the spread/introduction of seed and other propagules.	**Avoid introduction and spread of priority and environmental weeds within the subject land.** **Adjacent habitat protected**	**Pre-construction** **Construction**	**The Applicant** **Site manager**
	Weed hygiene protocols are in place prior to entering the subject land. This includes wash-down procedures to all plant and machinery.			
	Coolatai Grass (*Hyparrhenia hirta)* and St. Johns Wort (*Hypericum perforatum*) are to be managed as per the *Biosecurity Act 2015* and their regional recommended measures (Section 7.3). If any other priority weeds of NSW are identified in the subject land during construction, they must be removed from the subject land. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practical.			
Dust disturbance	Monitor dust levels and implement suppression strategies where required such as wetting down dirt roads or reducing vehicles speeds. Revegetation will also be commenced as soon as practicable to minimise areas likely to create dust. Suitable species will be used as ground cover species in any revegetation areas.	Reduce dust settlement on native vegetation and habitat for native species. Mitigation dust created during construction activities.	Construction Decommissioning	The Applicant Site manager

Impact	Action	Intended outcome	Timing	Responsibility
Vehicle strike on fauna	A Traffic Management Plan will be developed for the modification including speed limits, reductions to driving at night, and wildlife awareness training to minimise risk of vehicle strike during the construction of the solar and BESS and operation of the accommodation facility during the construction phase of the solar and BESS when there is expected to be an increase in traffic movements. Weekly carcass monitoring will be conducted in road reserves in project area for Masked Owl.	Mitigate risk of prescribed impact of vehicle strike on threatened species and other native fauna	Construction of the solar and BESS and operation of the accommodation facility during the construction phase of the solar and BESS	The Applicant Site manager

4.10.9 Update the evaluation of the SAII risk

i SAII risk

> There are several recommendations made in this submission which must be addressed before CPHR can complete an evaluation of SAII. We request a consolidated presentation of the required SAII information for the entire modification in relation to any impacts to entities at risk of SAII
>
> The EMM BDAR states that as the SAII information requirements for Box Gum Woodland CEEC were independently addressed by the two consultancies for the separate stages, they have not been combined and are presented in separate tables. Addressing the SAII information requirements separately for each stage has resulted in inconsistencies and omissions. Provision of the required information should be based on the cumulative impact to Box Gum woodland CEEC.

The SAII assessment has been fully consolidated for the additional lots and BBRS and is provided in Section 6.4 of the revised BDAR. SAII assessments have been completed for White Box Yellow Box Blakely's Red Gum Woodland.

Although Eastern Cave Bat and Large-eared Pied Bat are SAII entities, they are listed under SAII Criterion 4 – unlikely to respond to measures to improve its habitat and vegetation integrity and therefore its members are not replaceable. With respect to these bat species, Criterion 4 has been applied to protect their breeding habitat. As their breeding habitat (caves in Barneys Reef Rock Formation) would not be impacted by the proposed modification, a SAII assessment was not completed for the bat species.

4.10.10 Minor footprint revisions

As discussed in Section 3.2 of this Modification Submissions Report, ACEN has made some minor changes to the subject land (including the modification development footprint and the modification area) in relation to the additional lots, that has slightly increased the footprint.

The footprint has increased on the western edge of the additional lot (Lot 11 DP 750755 and Lot 40 DP 750755) that lies north of BBRS (Figure 4.1 of the BDAR). Exotic pasture will be cleared in this area, and the patch of PCT 281 woodland representing White Box Yellow Box Blakely's Red Gum Woodland will be retained in its entirety.

The potential public road crossing has been included within the study area (and development footprint), this crossing is located on the south-eastern corner of Lot 40 DP 750755, which contains an existing driveway, exotic pasture, and will affect a small area (0.01 ha) PCT 281 woodland.

A third area has been included within the study area (and development footprint) to the additional lot (Lot 34 DP 750755) that lies south of BBRS. This area is entirely comprised of exotic pasture. The BAMC and BDAR have been updated to reflect these minor changes.

The potential creek crossing points have been included in the study area (and development footprint) as well as Merotherie Road and BBRS intersection in response to CPHRs comments.

5 Response to public submissions

Responses to key matters raised from public submissions, as summarised in Section 2.3.2, are provided in the relevant sections below.

5.1 Environmental, social and economic impacts

5.1.1 Land and soil

i Agricultural land and productivity

24 submitters (35%) raised concerns about impacts to agricultural land and productivity. Many raised concerns that the modification would impact agricultural land and food production and stated that solar farms should not be located on farmland. Degradation of agricultural enterprise and decommissioning bonds to rehabilitate land to former production was also mentioned.

The modification will be undertaken on an area of up to 257 hectares (ha) of land that is currently subject to agricultural land use. ACEN will continue to explore opportunities with landholders to support co-location of livestock grazing with the solar project operation.

A Soil, Land and Agriculture Impact Assessment was prepared by Minesoils (2025) for the modification and was included as Appendix J of the Modification Report and summarised in Section 6.7 of the report. As identified in Minesoils (2025), and consistent with the approved project, the modification area is not biophysical strategic agricultural land (BSAL). The modification area has been verified as Land Soil Capability (LSC) classes 4 and 5, representing land with moderate capability (37 ha) to moderately-low capability (220 ha), as per the NSW government eSPADE database.

Minesoils (2025) found that the modification will result in the removal of potential primary productivity of up to $85,033 per year for the life of the operating project. This is considered a negligible impact in the context of the agricultural industry gross value of the Mid-Western Regional LGA, which, based on the latest ABS data in 2020/2021, was $98.7 million. The loss of productivity of up to $85,033 per year in the modification area represents less than 0.1% of that gross value of the LGA. Cumulatively, for the approved project and modification, this would equate to a removal of potential primary productivity of up to $403,201 per year over the life of the development. Further, it is anticipated that agricultural land use will be re-established over the entire modification area at the time of decommissioning and rehabilitation (unless otherwise agreed with the landowner and/or regulatory authorities). There will be no permanent decrease in land available for agriculture use.

Current agricultural land use around the project and modification area, and in the broader project locality, will not change as a result of the proposed modification, and there will be no fragmentation or displacement of existing agricultural industries.

A project decommissioning and rehabilitation plan will be prepared prior to the end of the project's operational life and will feature rehabilitation objectives and strategies for returning the development footprint to agricultural production.

5.1.2 Cumulative impacts

18 submitters (26%) raised concerns about the cumulative impacts of the project and modification with many indicating that cumulative impacts have not been properly addressed and a REZ-wide cumulative impact assessment was required. Particular concerns raised regarding cumulative impacts related to accommodation facilities throughout the region, intensity of development in the region, impacts to agricultural land, biodiversity, water resources and rural character.

EnergyCo is the infrastructure planner for the CWO REZ, responsible for coordinating private sector investment from solar, wind and storage projects as well as planning new transmission infrastructure in the REZ. In this capacity, EnergyCo is taking a leading role in the coordination of impacts and benefits to communities who will be hosting renewable generation and transmission infrastructure. EnergyCo published *The Central-West Orana REZ – Coordinating community impacts and benefits in the REZ report* (EnergyCo 2023). The report summarises key findings for the CWO REZ in terms of the following:

- Road upgrades: investigations have been carried out to understand the scope of road upgrades required to facilitate construction of projects in the REZ. Potential road upgrades may include road widening for heavy vehicle movements, intersection upgrades and installing site access roads.
- Housing and accommodation: studies have been carried out to understand the existing housing context in the REZ and identify potential accommodation solutions for the incoming construction workforce.
- Industry, training and skills: with demand increasing for skilled labour in the renewable energy sector, EnergyCo is investigating how workforce capabilities and employment opportunities can be built upon in the REZ.
- Waste and circular economy: studies have been completed to understand waste generation for projects in the REZ and identifies opportunities to promote efficient waste management and circular economy.
- Telecommunications: mobile and internet connectivity is a widespread issue in the REZ. EnergyCo has investigated how the construction of renewable energy infrastructure could help improve telecommunication coverage for communities in the region.
- Social infrastructure: EnergyCo is investigating the current provision of community services including healthcare, education and recreational services and whether additional services may be required to support increased demand during the construction of projects in the REZ.

The cumulative impacts of the planned infrastructure as a whole are being considered by EnergyCo in the establishment and development of the wider REZ, of which the project is a part.

The *Central West Orana Renewable Energy Zone Transmission Project Amendment Report, Appendix L: Cumulative impact assessment* (EnergyCo 2024) identifies that the mitigation of cumulative impacts would be based on a tiered approach:

1. Each project mitigates its own impacts to the fullest extent possible.
2. Where residual impacts occur that have a cumulative impact in respect of other projects, EnergyCo will collaborate with the proponents of the other relevant projects to explore opportunities for collectively managing any cumulative impacts.
3. Further investigation of the cumulative impacts of the project and associated renewable energy generation projects within the CWO REZ to inform future decision making and resource use. These investigations would identify opportunities to coordinate community impacts and benefits within the CWO REZ.

With respect to tier 1 above, the cumulative impacts of the modification were assessed in accordance with the *Cumulative Impact Assessment Guidelines for State Significant Projects* (DPIE 2022). Specific impacts identified in the submissions are addressed as follows:

- **Accommodation**: The project includes an accommodation facility to specifically avoid and minimise potential cumulative impacts on accommodation demand in the region. As identified in the Modification Report, and subject to approval, the capacity increase in the accommodation facility enables opportunities for potential sharing of the accommodation with other ACEN projects in the CWO REZ, and in particular the recently approved Valley of the Winds Project. This would reduce the requirement for a project specific accommodation facility for that project.

- **Agricultural land**: As outlined in the Modification Report, in the context of agriculture, increased cumulative impacts including changes to land used for agriculture, localised productivity, secondary productivity and some agricultural support services are likely to be experienced. This will be a result of agriculture land use being inhibited by landform modification and infrastructure, such as the development footprints for mining leases, BESSs, and solar farms. However, given the nature and scale of the established agricultural industries within the region, significant impacts to critical mass thresholds and regional agricultural infrastructure are unlikely to occur in the foreseeable future.

  On a broader scale, the cumulative risk to agricultural land and productivity across NSW because of large-scale solar development is estimated to be very low (DPE 2022). The Australian Energy Market Operator estimates that NSW will need approximately 20,000 MW of large-scale solar generation by 2050. This would require approximately 40,000 ha of land or only 0.06% of rural land in NSW. Even in the highly unlikely scenario that all of NSW's solar generation were located on important agricultural land (this land covers around 13.8% of the state and is 6 to 7 times more agriculturally productive than the remaining 86.2% of the state) only 0.4% of this land would be required (DPE 2022).

- **Biodiversity**: A Biodiversity Development Assessment Report (BDAR) (Appendix E of the Modification Report) was prepared in accordance with the biodiversity assessment method (BAM). The modification would result in impacts to an additional 69.05 ha of native vegetation (PCT 281 and PCT 277) which would be offset in accordance with the Biodiversity Offset Scheme (BOS).

  Biodiversity impacts from all surrounding future and relevant projects can be expected and any cumulative impacts contributed to by the modification will be managed through the implementation of the management and mitigation measures outlined in the BDAR, for example biodiversity offsets for individual projects.

- **Rural character**: A landscape and visual impact assessment (Appendix G of the Modification Report) was prepared with reference to methods outlined in the *Large-Scale Solar Energy Guidelines* (DPHI 2024b) and the *Technical Supplement Landscape and Visual Impact Assessment* (DPHI 2024c). This assessment concluded that visual impacts associated with the modification are expected to be very low and the landscape screening identified in the consent conditions is considered appropriate.

- **Water resources**: All water take required for the project (including the modification) will be undertaken in accordance with applicable legislation and licensing. ACEN has identified a number of options (as summarised in Section 4.5 of this report) to obtain a suitable water supply to meet demand for the project. ACEN continue to explore water resourcing options, and it is expected options will be progressed during detailed design and before construction is initiated. Further, the conditions of consent for the project require that sufficient water is available for all stages of development, and if necessary, to adjust the scale of development to match the available water supply. This will serve to protect water resources in the region.

- **Traffic**: Cumulative traffic volumes of nearby developments were considered in the traffic assessment (refer Section 6.4.2iii of the Modification Report) and are addressed in Section 5.1.7 of this report.

- **Access**: The use and upgrade of Birriwa Bus Route South, as proposed in the modification, will support co-location of road upgrade works associated with both EnergyCo's CWO REZ Transmission Project and the Birriwa Project. This shared use will also provide access for heavy and light vehicles during operation and maintenance activities by the Network Operator for EnergyCo's infrastructure situated adjacent to or within the modification area. By enabling joint use of this route, the proposal helps minimise environmental and community impacts.

5.1.3 Biodiversity

i Threatened species and habitat

15 submitters (22%) raised concerns about impact on flora and fauna, threatened species and habitat. Several threatened species and communities were mentioned in submissions. Impacts to hollow bearing trees, wildlife corridors and aquatic habitat were also mentioned.

A Biodiversity Development Assessment Report (BDAR) was prepared by EMM (2025b) and Eco Logical Australia (ELA 2025) for the modification and was included as Appendix E of the Modification Report. The assessment was summarised in Section 6.1 of the Modification Report.

As identified in the Modification Report, the modification area was selected following the completion of seasonal targeted biodiversity surveys and refined based on environmental constraints. The modification area is generally a heavily cleared agricultural landscape with limited remnant vegetation.

Specific species and communities identified in the submissions, and the potential impacts of the modification are summarised as follows:

- Koala: Targeted surveys of koalas did not identify the presence of this species in the modification area.

- Purple Spotted Gudgeon: While White Creek is mapped within the freshwater distribution for this species, the waterways within the modification area are highly turbid. Many of these waterways have been altered to include man-made dams and road crossings/culverts which are likely to block fish passage. The waterways lack overhanging vegetation, rocks and snags which are important for this species. The likelihood of occurrence for this species is low.

- Masked owl: direct impacts to 1.0 ha of habitat of the Masked Owl is anticipated as part of the modification. These impacts will be offset through either retiring like-for-like credits, or payment into the Biodiversity Conservation Fund.

- Wedge-tailed eagle: While all native animals are protected in NSW, the wedge-tailed eagle is not considered to be threatened in NSW.

- Powerful owl: The modification area is not considered suitable for this species due to habitat constraints. Suitable foraging habitat may occur within the wooded areas of PCT 281 (Rough-Barked Apple – red gum – Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion) outside of the modification area, which are to be retained. No suitable hollows occur within the modification area. Surveys were undertaken for this species and it was not recorded.

- Barking owl: The modification area is not considered suitable for this species due to habitat constraints. The modification area does not contain living or dead trees with hollows greater than 20 cm diameter and greater than 4 m above the ground. Wooded areas outside of the modification area are to be retained. Surveys were undertaken for this species and it was not recorded.

- Large-eared pied bat: While the modification area does include vegetation that may be used for foraging, this species is considered more likely to use the wooded vegetation outside of the modification area that is to be retained.

- PCT 80 (Western Grey Box – White Cypress Pine tall woodland on loam soil on alluvial plains of NSW South Western Slopes Bioregion and Riverina Bioregion): The modification does not result in further impacts to PCT 80.

- PCT 281 (Rough-Barked Apple – red gum – Yellow Box woodland on alluvial clay to loam soils on valley flats in the northern NSW South Western Slopes Bioregion and Brigalow Belt South Bioregion derived native grassland.): The modification will result in impacts to 67.76 ha of PCT 281 which will be offset through either retiring like-for-like credits, or payment into the Biodiversity Conservation Fund.

- Inland Grey Box Woodland: Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia was not recorded in the modification area by biodiversity surveys carried out across the area.

- White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland: this community is consistent with PCT 277 (Blakely's Red Gum - Yellow Box grassy tall woodland of the NSW South Western Slopes) and PCT 281 which are found in the modification area. The vegetation does represent the critically endangered ecological community listing under the NSW *Biodiversity Conservation Act 2016*. The modification will result in impacts to 69.05 ha of this community which will be offset through either retiring like-for-like credits, or payment into the Biodiversity Conservation Fund. The EPBC Act listing for this community (Box Gum Woodland) is dependent on condition, patch size and presence or absence of important species and vegetation within the modification area does not conform to the listing.

Other biodiversity concerns are addressed as follows:

- Hollow bearing trees: Fifty-six hollow bearing trees were recorded within the modification area, largely along Birriwa Bus Route South. As identified in the BDAR, there will be a reduction in the number of hollow bearing trees along Birriwa Bus Route South. Remnant vegetation will be retained outside of the development footprint and hollow bearing trees will be retained where possible. Where retention is not possible, nest boxes will be installed at a ratio of 2:1. Hollow sections of trees will be retained and used on-site where possible. Opportunities will continue to be explored to protect hollow bearing trees along the roadway.

- Wildlife corridors: Wildlife corridors were assessed in the form of habitat connectivity in the BDAR prepared for the modification. Riparian corridors along creeks and the vegetation along Birriwa Bus Route South were assessed. Riparian buffers have been developed as part of project design and will be protected from disturbance. In addition, the project is not expected to cause direct or indirect fragmentation or isolation of Box Gum Woodland due to the already patchy distribution of this community within the landscape. The vegetation proposed for removal does not serve as a critical linkage between habitats or vegetation areas. Consequently, the project will not disrupt connectivity or contribute to habitat isolation.

- Aquatic habitat: The streams within the modification area are highly disturbed and generally lack aquatic and riparian vegetation. The streams occur as ephemeral waterways in periods of high rainfall. These waterways have been highly altered and degraded, with numerous online dams primarily providing water for livestock. These dams lack riparian vegetation and have high turbidity and sediment load due to stock access. Management measures have been developed to mitigate potential impacts to aquatic ecology during construction.

ii Biosecurity

2 submitters (3%) raised concerns about biosecurity including spread of weeds, pest and disease.

ACEN acknowledges the potential impacts that the spread of weeds can have on neighbouring properties if the appropriate management and mitigation measures are not implemented. Coolatai Grass (*Hyparrhenia hirta*), and St. Johns Wort (*Hypericum perforatum*) are to be managed as per the *Biosecurity Act 2015* and their regional recommended measures. If any other priority weeds of NSW are identified in the project site during construction, they will be removed from the site.

As identified in the Modification Report, biosecurity will be managed in accordance with a detailed protocol relating to biosecurity.

5.1.4 Hazards and risk

i Contamination

15 submitters (22%) expressed concern about contamination of soil and water from toxic chemicals, PFAS, and heavy metals. Concerns about downstream users and poisoning of the land was raised.

As identified by the Clean Energy Council (2025), there is no evidence to suggest that renewable energy infrastructure, such as solar panels or wind turbines, poses a contamination risk to livestock, crops or food production when co-located with agricultural land.

The PV modules will most likely use polycrystalline or monocrystalline wafer technology.. All of the monocrystalline or polycrystalline PV panels being considered by ACEN for the project are manufactured by tier one suppliers, which make products meeting all the relevant international and domestic standards. The modules are not anticipated to physically degrade over the project's lifetime and come with a manufacturer warranty. Therefore, there is a negligible likelihood of the photovoltaic modules causing contamination.

The grid connection and array collector substations and batteries within the BESS may contain some heavy metals or other potential contaminants (e.g. nickel, manganese, cobalt, iron, copper). Similar to the PV panels, this equipment will be manufactured by reputable manufacturers meeting all relevant international and domestic standards. The substation and BESS facilities will be designed and constructed by tier 1 contractors and will incorporate sufficient bunding/storage capacity as spill control..

In relation to the BESS, there are appropriate measures in place to ensure the chemicals within the battery cells are contained and will not contaminate the surrounding environment. These measures include:

- an energy management system, which monitors the health of the BESS down to a cell level, ensuring the system is operated in a safe manner
- gas and temperature sensors, which monitor the enclosures and will detect any abnormalities
- fire suppression systems as part of the enclosures
- multiple levels of physical separation between chemicals within the cells and the environment (i.e. the cells will be housed within a module, which will likely be stacked in an enclosure).

Appropriate spill prevention and management measures will be developed as part of the project's construction environmental management plan (CEMP), which will include spill clean-up procedures which would be implemented during construction and throughout the project's operations.

ii Hazards and risk associated with project infrastructure

Eight submitters (12%) raised concerns about hazards and risk associated with project infrastructure including increased fire risk, public health and safety risks, smoke from fires, and diminished fire management resources in the region.

Potential health impacts and hazards of the project such as fire risk, toxic materials, and electro-magnetic fields were addressed by ACEN in the Submissions Report (EMM 2023a) prepared to respond to submissions on the development application and EIS for the project. The modification will not materially change or add any risks in this regard to the project as approved.

EMFs created from the project will not exceed the International Commission on Non-Ionising Radiation Protection (ICNIRP) reference level for exposure to the general public at any location within the development footprint, and that the impact on stock and the general public (including neighbouring agricultural workers) in surrounding areas will be negligible.

The design and typical exposure levels to EMFs for the proposed project infrastructure has been assessed against the ICNIRP's (1998) *Guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields*. Several controls to reduce the potential for EMFs have been identified and implemented in the project design, including standard solar PV plant characteristics such as inverters housed in shipping containers or steel cabinets.

Toxic materials are addressed in Section 5.1.4i above.

A preliminary hazard analysis (PHA) addendum was prepared by Sherpa Consulting Pty Ltd (Sherpa 2025) to assess the increased BESS capacity for the modification (Appendix L of the Modification Report).

The PHA identified that the modification is compliant with DPHI Hazardous Industry Planning Advisory (HIPAP) Paper No. 4, *Risk Criteria for Land Use Safety Planning*, in particular:

- based on the completed consequence analysis for a battery unit on fire and the recommended setback to the development footprint boundary, the effects from a battery unit on fire are not expected to result in significant off-site impacts (i.e. serious injury due to heat radiation or irritation from toxic combustion products)
- events with high probability of occurrence are expected to be contained within the boundaries of the project area
- there are no hazardous developments in the vicinity of the project.

In addition to demonstrating that the fire risks from the BESS can comply with the DPHI HIPAP No. 4, PHAs for renewable energy projects with a BESS facility with capacity exceeding 30 MW include an additional requirement to 'consider all recent standards and codes and verify the separation distances to onsite or off-site receptors to prevent fire propagation'. This requirement is intended to ensure that fire risks from the BESS have been considered in the design.

ACEN appreciates the critical importance of ensuring that the separation between BESS subunits (such as outdoor containers or racks) or the separation of individual BESS buildings are sufficient to mitigate fire escalation. The PHA identified that there is sufficient space available to accommodate the BESS units and account for the required separation distances and asset protection zones.

The potential impacts of fire have been assessed and described in detail in Section 6.9 (hazards), 6.11 (bushfire) and Appendix L (Addendum Preliminary Hazard Assessment) and Appendix N (Addendum Bushfire Assessment Report) of the Modification Report.

The conditions of consent for the approved project require that a Fire Safety Study be prepared and meet the requirements of Fire Rescue NSW. The measures in the Fire Safety Study must be implemented and will include measures to eliminate the expansion of any fire incident including adequate fire safety systems and appropriate water supply. The conditions of consent also require that the project is suitably equipped to respond to any fires on site (including adequate water supply), and to assist RFS, FRNSW and emergency services as much as practicable if there is a fire in the vicinity of the site.

5.1.5 Social

15 submitters (22%) raised concerns about impacts to the local community, social cohesion, mental health, safety of local families, fear for the future of the community, and access to medical services. The submissions also expressed negative sentiment from the community towards the project.

The modification seeks to increase the peak workforce of the project from 500 people to 650. This would be accompanied by an increase in the capacity of the workforce accommodation facility. The peak construction workforce will be required for short periods of time throughout the construction period such as during the establishment of the accommodation facility. The anticipated period of construction for the accommodation facility will be over a period of approximately 3 to 7 months (10 to 28 weeks) within a four-year construction window for the project.

A Social Impact Assessment (SIA) was prepared by EMM (2025c) to support the modification and is available as Appendix K of the Modification Report. Key findings of that report are summarised here:

- Engagement undertaken with the community as part of the SIA for the Modification Report identified that there are no GP services in Gulgong. While ACEN intends to provide adequate medical services on site, it will also continue to explore other options to support health services in the region. This includes engaging with key stakeholders in the REZ such as EnergyCo, the Network Operator, local councils and government health service providers. This includes exploring opportunities, when they arise, to work with local and regional health practitioners.

- Engagement undertaken in 2025 indicated an additional 150 workers would not affect the potential social change relating to social cohesion. Personal safety concerns were raised by several landholders, who questioned the adequacy of security to be provided by the project at the temporary accommodation facility. The temporary accommodation facility will be a licensed premises, removing demand from workers to travel to Gulgong or other towns for this purpose.

- The implementation of safety measures within the facility, including adequate fencing and worker training, as well as complaints reporting processes for nearby landholders, will work towards addressing potential impacts from the workforce increases proposed. ACEN has initiated discussions with neighbouring properties regarding the provision of safety cameras and will continue to engage with neighbours and the Network Operator as the project progresses.

- Security personnel will be onsite 24 hours every day to ensure the safety of workers and the surrounding community. Security officers will be responsible for monitoring access to and from the site and managing people within the site. This includes mobile security checks of the accommodation facility and the site perimeter, crowd control for social areas, incident control and emergency response. Officers will have a relevant security licence and will be first aid certified.

- As previously committed to, ACEN will implement a Complaints and Grievances Procedure. The procedure will provide an opportunity for stakeholders to raise complaints, grievances, and provide feedback. The procedure will facilitate the timely response and enable the monitoring and reporting of grievances and ACEN response.

In addition to the above, ACEN has proposed a number of mitigation and management measures to effectively mitigate the social impacts of the project as a whole. These mitigation measures have been reproduced below:

- Community benefit related to community investment and involvement:
    - ACEN will adopt a shared value approach in their identification of future community funding opportunities, employment, apprenticeship and training opportunities, and community involvement opportunities.
- Community impacts related to reduced social cohesion due to an influx of temporary workers:
    - ACEN will adopt a number of different measures to reduce the size of the temporary construction workforce including a targeted approach to securing local employees, including by supporting training in the context of the CWO REZ.
    - Construction workforce behaviour will be managed through the implementation of a Construction Workforce Management Plan (CWMP).
    - ACEN will seek to appoint a regionally based resource to coordinate community and workforce engagement across all ACEN projects in the CWO REZ.

One submitter noted that a larger area needs to be considered as the local community to a project in a regional area and neighbours living on the same street can be large distances away from each other. The “local” and “regional” terminology used in this report are as per the requirements in the Submissions Report Guidelines where the local community is considered as those within 5 km of the project, and the regional community are those within 100 km.

5.1.6 Visual

i Landscape and visual amenity

12 submitters (18%) expressed concerns regarding impacts to visual amenity, industrialisation of the landscape, visual intrusion and loss of scenic rural landscapes.

A Landscape and Visual Impact Assessment (LVIA) was prepared by EMM (2025d) for the modification and was included as Appendix G of the Modification Report. The assessment was summarised in Section 6.3 of the Modification Report.

Based on viewshed mapping, four private and four public viewpoints were selected for assessment within the LVIA. Potential visual impacts were assessed as very low for all viewpoints for the modification only, and as low or very low for the approved project combined with the modification. In relation to the broader landscape context, when considered in association with the approved project, the additional landscape character impact of the modification will be insignificant.

Landscape screening identified in the consent conditions is considered appropriate for the potential impacts.

Cumulative impacts are considered in Section 5.1.2.

5.1.7 Traffic and transport

i Increase in traffic and associated impacts

12 submitters (18%) expressed concerns regarding traffic impacts in the local area, including cumulative impacts, congestion and safety concerns on local roads, impacts to school buses, damage to roads, and poor driver behaviour.

As outlined in the Modification Report (Table 6.12), the modification seeks to increase the total number of project related heavy vehicles by up to 30% (i.e. a total of 156 daily heavy vehicle movements; that is, 156 vehicles travelling into site and 156 travelling out). It is anticipated that daily heavy vehicle movements will be split between the approved access via Barneys Reef Road and the proposed alternative access via Merotherie Road.

It is anticipated that up to 90 daily heavy vehicle movements of the 156 heavy vehicle movements will access the site per day via the alternative Merotherie Road access during peak periods. These peak movements via the alternative access will not coincide with the peak movements along the approved access route via Barneys Reef Road, such that the combined total heavy vehicle movements travelling to and from the site on any given day during pre-construction and construction will not exceed 156 movements (where movements is defined as per the development consent as 'one vehicle entering and leaving the site').

No changes are proposed to the approved volume of heavy vehicles that may access the site via the approved access route off Barneys Reef Road (120 heavy vehicles in and out of the site).

A Traffic Impact Assessment (TIA) was prepared by EMM (2025e) for the modification and was included as Appendix H of the Modification Report. The assessment was summarised in Section 6.4 of the Modification Report.

As described in the TIA, road upgrades are required to support the intended volume of vehicles for the modification. These include:

- an upgrade of Birriwa Bus Route South between the intersection of Merotherie Road and the proposed alternative access point will be required to facilitate project related traffic
- an upgrade of Merotherie Road. The Network Operator is currently upgrading the Golden Highway/Merotherie Road intersection by providing a dedicated left and right turn bays. The Network Operator is also upgrading the relevant section of Merotherie Road to a 9 m seal width, comprising 3.5 m wide travel lanes and 1 m sealed shoulders on both sides.

With respect to school buses, ACEN has committed to measures in the Traffic Management Plan (TMP) and Driver Code of Conduct to mitigate impacts to school buses including:

- informing drivers and/or operating companies about the school bus routes along Castlereagh Highway, Golden Highway, Merotherie Road and Birriwa Bus Route South
- direction to avoid trips during school zone times (8.00 am to 9.30 am and 2.30 pm to 4.00 pm)
- in consultation with relevant councils and road authorities, install school bus signs at suitable locations along construction routes if necessary to warn heavy vehicle drivers of student drop-off and pick-up area.

Damage to roads will be addressed via a road maintenance program to be developed in consultation with the relevant road authorities to be undertaken during construction and will include route inspections of all the affected local roads. Any new road pavement damage which occurs to these roads during the project construction period from construction activities, which represent a potential traffic safety risk to the travelling public, will be restored to their pre-construction condition as soon as reasonably possible.

With respect to driver behaviour, one submitter noted a concern about the enforcement of management plans and the Driver Code of Conduct. The conditions of consent for the approved project required that suitable training on the code of conduct is provided to drivers working on the project.

ii Alternative access and use of Merotherie Road

Nine submitters (13%) objected to the use of Merotherie Road as a secondary access to the project, with some submitters stating it was already congested and not yet upgraded, and that Merotherie Road and Birriwa Bus Route South are quiet local roads.

The Network Operator is currently upgrading the Golden Highway/Merotherie Road intersection by providing dedicated left and right turn bays. The Network Operator is also upgrading the relevant section of Merotherie Road to a 9 m seal width, comprising 3.5 m wide travel lanes and 1 m sealed shoulders on both sides. This intersection upgrade and road upgrade is expected to be complete before the commencement of the Birriwa solar and BESS project.

ACEN has made the following commitments regarding use of the alternative access route:

- Project traffic will not use Golden Highway / Merotherie Road intersection or Merotherie Road until these have been upgraded as part of EnergyCo CWO REZ Transmission project (Merotherie Energy Hub).
- ACEN proposes to undertake upgrades to the Merotherie Road/Birriwa Bus Route South Road intersection, and upgrades to Birriwa Bus Route South Road between Merotherie Road and the proposed alternative access point to the satisfaction of the Mid-Western Regional Council and in consultation with the Network Operator.

It is acknowledged that existing road conditions along Birriwa Bus Route South are a key concern for local landholders. While some landholders expressed during SIA engagement that the current condition of Birriwa Bus Route South is sufficient for local traffic, others expressed concern about the condition of local roads. The proposed modification incorporates upgrades to Merotherie Road and Birriwa Bus Route South which will improve road safety for local road users.

5.1.8 Economic

i Property values, insurance and the local economy

Eight submitters (12%) expressed concerns about devaluation of surrounding properties, public liability insurance for neighbours, loss of livelihoods, and indirect economic impacts.

A detailed response to the impacts on property values and insurance costs was provided in the EIS Submissions Report (EMM 2023a) prepared for the approved project. The most relevant research available demonstrates that renewable energy facilities, such as wind farms and solar farms, have a negligible impact on property prices. This refutes the perception that the presence of wind farms and solar farms can reduce the value and saleability of neighbouring properties.

The Insurance Council of Australia has issued advice regarding farm insurance and energy infrastructure (ICA 2024):

> Current information indicates that insurers generally do not have specific concerns related to a property hosting transmission lines or neighbouring energy infrastructure. At the time of writing, the Insurance Council is not aware of any instances where Insurance Council members have been unable to provide insurance or have increased premiums as a result of a farm (or a neighbouring property) hosting energy infrastructure.

The SIA identified that there is a potential for increased livelihood benefit relating to employment opportunities for underrepresented groups. ACEN is committed to prioritising hiring or upskilling of workers residing within the local area and developing a Local Participation Plan and an Aboriginal Participation Plan (APP) that commits to employment and investment in job readiness by ACEN and its contracting partners.

With respect to indirect economic impacts of the modification, it is not considered that the modification would change the outcomes of the economic assessment as identified for the approved project.

ii Tourism

Three submitters (4%) expressed concern about impacts to tourism through loss of visual amenity, and impacts to the Central West Cycle Trail.

It is acknowledged that tourism is an important and growing industry sector in the Mid-Western Regional LGA. However, no significant negative impacts on tourism are expected from the project, due primarily to its location within a rural agricultural setting and approximately 30 km north of Gulgong. Landscape screening will be planted to mitigate visual impacts.

It is acknowledged that the central west cycle trail (CWCT) extends through the modification area. ACEN has proposed targeted traffic control measures for users of the CWCT and has continued engaging with CWCT representatives throughout the modification process, discussing suitable solutions to allow cyclists to continue to enjoy the CWCT in a safe way throughout construction and operation of the project. A detailed response to the CWCT submission on the modification is provided in Section 5.1.13.

5.1.9 Waste

Four submitters (6%) raised concerns about the disposal of solar panels at the end of their lifespan and the ability to recycle panels.

No additional solar panels are proposed as part of the modification.

As identified for the approved project, the PV modules will either be reused or recycled. ACEN anticipates that at the time of decommissioning, there will be significantly more recycling options available within Australia. In 2016, the International Renewable Energy Agency (IRENA) reported that up to 85% of the material within PV modules is able to be recycled (IRENA 2016). There may also be opportunities to reuse the PV modules. In lieu of an Australian based solution, the PV modules will be sent overseas for disposal through one of many established PV module recycling programs.

5.1.10 Water

Three submitters (4%) raised concerns about water impacts to the water table and dams, and increased runoff leading to erosion of creeks.

Water quality impacts associated with potential contamination are addressed in Section 5.1.4i.

With respect to erosion, no significant changes to erosion hazard are anticipated under the modification. The modification is unlikely to directly increase erosion or sediment loading (through increased velocity and scour) to watercourses passing through the development footprint. The volume of runoff and the velocity of flow will not change significantly. Erosion and sediment control measures would be implemented to minimise the potential for erosion and sedimentation during construction. Once construction has been completed, the ground cover vegetation would be progressively re-established and therefore significant impacts to soils are not expected.

5.1.11 Noise and vibration

One submitter (1%) raised concerns about increased noise associated with an increase in the capacity of the accommodation facility.

A Noise and Vibration Impact Assessment (NVIA) was prepared by EMM (2025f) for the modification and was included as Appendix I of the Modification Report. The assessment was summarised in Section 6.5 of the Modification Report.

Noise emissions associated with the increased capacity of the accommodation facility are not expected to exceed project noise trigger levels. During operation, noise emissions from the accommodation facility will primarily be related to light vehicle movements, equipment deliveries, and occupant noise while on site. It is not expected that noise emissions during operation of the facility will exceed those during construction of the accommodation facility, which was demonstrated by the NVIA to comply with noise criteria, and therefore it is expected that operational noise emissions will achieve compliance with the *Noise Policy for Industry* (NPfI) (EPA 2017) criteria, and noise impacts at nearby associated and non-associated noise sensitive receivers are highly unlikely.

ACEN has established a Community Information Line (1800 290 995) so that members of the community can lodge a complaint in response to noise impacts. During construction and operation of the accommodation facility, complaints will be investigated by ACEN and/or its appointed engineering, procurement and construction contractor with the appropriate actions implemented in response based on the nature of the complaint.

5.1.12 Bushfire

One submitter (1%) raised a concern about development in bushfire prone land.

An Addendum Bushfire Assessment Report (Cool Burn 2025) was prepared for the modification and was included as Appendix N of the Modification Report. The assessment was summarised in Section 6.11 of the Modification Report.

The proposed modification does extend into bushfire prone vegetation landscape (agricultural grazing/cropping and classified as grassland on low slopes), consistent with the approved project. Bushfire mitigation measures such as those committed to for the approved project, including establishing asset protection zones, consideration of bushfire attack levels, water supplies and access provisions, will be applied to the modification.

5.1.13 Central West Cycle Trail

One submitter (1%) raised concerns about impacts and proposed opportunities for the Central West Cycle Trail.

ACEN is continuing engagement with the Central West Cycle Trail (CWCT), and as part of ongoing discussions have developed a term sheet with CWCT (hereafter referred to as 'the Association'), which sets out agreed measures to minimise the potential impacts of the project on the CWCT.

An agreement between ACEN and the Association (hereafter referred to as 'the Agreement') will be developed and the key measures and commitments to be included are summarised below:

- A traffic management plan (TMP) will be required as a condition of consent if the project modification is approved. The Association will be given the opportunity to provide input and comment on the proposed TMP, particularly regarding the measures intended to mitigate the project's impacts on cyclist traffic along BBRS. ACEN will consider the input and comments provided by the Association when preparing the final TMP.

- ACEN will honour its commitments to mitigating the project's impacts on cyclist safety as outlined in this Report, particularly the measures detailed in the TIA and summarised below.

- ACEN will keep working with the Association and other regional stakeholders to find additional ways to reduce the project's construction impacts on the CWCT.
- In addition to the above measures ACEN will provide support on how the trail can explore alternative routes to avoid the impacted areas.
- ACEN understand the Agreement addresses the Associations concerns and CWCT's concerns raised during the public exhibition.

The mitigation measures discussed with the Association are consistent with those outlined in the Modification Report, and include, but are not limited to:

- in consultation with the CWC Trail Inc (or the Association), a signage plan will be prepared, highlighting the CWCT within and in the vicinity of the project
- the CWCT will be highlighted to increase awareness of cyclists' presence in the area within the site induction and driver's code of conduct
- in site-specific circumstances, e.g. peak construction activities, a traffic controller may be required to manage the vehicular traffic and cyclists which is subject to site supervisor's safety assessment and discretion
- a dedicated phone number will be provided for CWCT users to call to confirm safe passage before using the trail during peak construction periods. This phone number will be listed on a sign approximately 1 km from the start of construction and on the CWCT website
- safe pull over bays for bicycles will be identified along the construction route, which would move depending on the construction schedule
- provision of speed management strategies.

5.2 The project

5.2.1 General objection

15 submitters (22%) objected to the project and modification.

ACEN acknowledges the general objections to the project and modification. The project has been approved with strict development consent conditions, which include the implementation of mitigation measures that were identified though the environmental impact assessment process, to effectively mitigate residual impacts. Further, and as demonstrated in the Modification Report, the modification will result in minimal environmental impacts beyond those previously assessed and approved under SSD-29508870.

The project (as modified), in conjunction with other large-scale renewable energy projects, has potential to fill the need for replacement power as ageing coal-fired generators face closure. The project is consistent with relevant Commonwealth, State, regional and local strategic plans and polices, in particular the NSW Electricity Infrastructure Roadmap, which sets out the plan to deliver REZs in NSW. The project will contribute to the energy generation and storage targets for the CWO REZ, with an indicative capacity of around 600 MW and storage of approximately 900 MW for a four-hour duration.

ACEN will work in partnership with the local councils and the local community to ensure that, as far as possible, the benefits of the projected economic growth in the region are maximised and impacts minimised.

5.2.2 Accommodation facility size

Eight submitters (12%) objected to the increase in the size of the accommodation facility. Concerns were raised that there are several facilities already in the area, and that beds at the facility would be sold or rented to other projects.

The Modification Report does state that the proposed capacity increase in the accommodation facility will enable opportunities for potential sharing of the accommodation with other ACEN projects in the CWO REZ, in particular the recently approved Valley of the Winds Project. The facility is readily upgradable to 1,000 as stated in the Amendment Report and could be used for future projects subject to approval.

Use of other accommodation facilities in the region would spread out the workforce required for the construction of the project and may have unanticipated impacts to traffic and transport. Other accommodation facilities may not have capacity or approval for other projects to use the facility.

5.2.3 Alternatives – battery types

One submitter (1%) questioned whether alternative battery types had been considered.

Alternative BESS technologies have been considered. Selection of the battery technology is a balance of cost and availability with the most commonly used versions being lithium ion.

5.2.4 Alternatives – CWCT

One submitter (1%) provided alternative options to mitigate impacts to the CWCT

As described in Section 5.1.13, ACEN is continuing engagement with the CWCT, and as part of ongoing discussions are developing a term sheet with CWCT, which will set out agreed measures to minimise the potential impacts of the project on the CWCT, consistent with those outlined in the Modification Report.

5.2.5 Site security fencing

One submitter (1%) provided suggestions for site security fencing and requested that security fencing be minimised and not located on property boundaries, but rather setback within the development area. Fencing should not be located along Birriwa Bus Route North, as there appears to be opportunity to locate it within the development area. A fencing plan should be prepared in consultation with neighbours and be included as a condition of development consent. Fencing should be black in colour (rather than grey) to minimise its visual impact on the landscape.

ACEN acknowledge the preferences regarding fencing. Site fencing will be located in line with asset protection zones and colour will be determined during detailed design.

5.3 Procedural matters

5.3.1 Engagement with the community

17 submitters (25%) expressed concern about the level of community engagement for the modification. Some submitters stated that the engagement for the modification was not adequate and there was a lack of transparency in the engagement (relating to increased traffic volumes and plans for the accommodation facility), there was a lack of consideration for the opinions of the public/locals, and several submitters indicated that they had not been engaged at all. Lack of social license was also mentioned in several submissions.

During preparation of the Modification Report along with associated technical studies and post exhibition of the Modification Report, ACEN implemented a targeted engagement program to explain the proposed modification and seek commentary and perceived issues on the proposed changes with local stakeholders. This included:

- Project information and advertising: Project updates and notices were placed in the local newspaper, in October 2024, January 2025 and April 2025, along with updates to the project website and social media pages in October 2024, January 2025 and May 2025. These detailed the following:
    - October 2024 – Notification of ACEN's intent to submit a modification application (Appendix F.1)
    - January 2025 – Update including securing of additional project land, consideration for a secondary access route along with purpose and impact reduction, and detail of a community drop-in session on 29 January 2025 (Appendix F.2)
    - April 2025 – General project information and detail of a community drop-in session on 6 May 2025 (Appendix F.3)
    - August 2025 – Update that the modification application had been submitted, was on public exhibition and encouraged submissions to be made on the Major Projects Portal website. It also included a QR code linking to the same website (Appendix F.4)
- Community drop-in sessions: Two l drop-in sessions were held on 29 January 2025 and 6 May 2025. Community members were invited to meet with ACEN's extended project team and locally based community engagement team, view maps of the modification area, including BBRS and discuss any questions or concerns they had. Fact sheets about the project were also available for the community.
    - ACEN acknowledges that not all community members are available for a targeted drop-in session on a specific date. Noting this, ACEN operates a project office in Gulgong from Tuesday-Thursday, 9:00am – 5:00pm, in which community members are encouraged to drop in to meet with the community engagement team to ask any questions they may have.
- Ongoing emails, meetings, phone and video calls with CWCT representatives. This also included a site visit with CWCT members on 13 March 2025, where BBRS was inspected to assess their needs, discuss ACEN requirements, synergies and alternative routes.
- Targeted engagement with key neighbours and near-by-residents: Ongoing emails, meetings and phone calls with neighbouring landholders and residents within at least 3 km of the modification area, with a focus on the modification location, no changes to solar capacity, increase to BESS size, construction traffic and additional site access via Merotherie Road and BBRS along with other relevant studies. These discussions have been recorded and specific information provided to DPHI, as requested.

Feedback obtained during this pre-lodgement engagement directly informed the content of the Modification Report and its supporting studies. Concerns regarding construction traffic, cycle traffic and road safety were considered in the decision to pursue a co-design upgrade of BBRS with Mid-Western Regional Council.

ACEN continues to engage with stakeholders including local authorities, government agencies, the local community and neighbouring landowners as the project development progresses. The modification report (Section 5) summarises the consultation and engagement undertaken following the project approval and during the preparation of the modification report. This includes:

- advertisements in the local paper in November 2024, January 2025, and April 2025
- updates to the project website and social media pages in October 2024, January 2025 and April 2025

- drop-in sessions in January 2025 and May 2025
- ongoing meetings and phone calls with CWCT representatives
- ongoing phone calls and meetings with host landowners, neighbours and near-by residents.

Concerns regarding construction traffic, amenity (noise, dust and visual), cycle traffic and workforce accommodation behaviours were raised through this consultation and were considered in the modification report.

ACEN acknowledge that some of the submitters indicated they had not been directly consulted. ACEN has engaged with nearby landowners with a dwelling on their property, or who may be impacted, within at least 3 km of the project modification area to discuss specific issues related to their properties and farming activities. ACEN acknowledges that sometimes the land is leased to other parties. ACEN's first point of engagement contact will always be the title holder and will not engage with others on the property such as the lessee or family members unless directed to do so.

Where the project would directly impact a property (e.g. noise, visual), then ACEN has consulted directly with owners of these properties. ACEN has continued to invite community members to contact the project team through advertisements in local papers and various online methods and has provided a project specific email address and phone number for community members to contact the team.

5.3.2 Federal assessment and the EPBC Act

15 submitters (22%) expressed that Federal oversight and assessment was required, that the project should be a Controlled Action and that the EPBC Act should apply.

The EPBC Act provides the legal basis to protect and manage internationally and nationally important flora, fauna, ecological communities, heritage places and water resources which are deemed to be matters of national environmental significance (MNES).

Under the EPBC Act, a proponent proposing to undertake an action that may or will have a significant impact on MNES is to be referred to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for determination as to whether or not it is a controlled action.

Threatened species protected under the EPBC Act were assessed as part of the BDAR prepared for the modification. The updated BDAR concludes that the project is not likely to significantly impact threatened species, ecological communities or migratory species listed under the EPBC Act. A referral for the modification has not been submitted as no significant impacts have been identified for MNES.

5.3.3 Modification process

13 submitters (19%) raised concerns about the modification process and scope creep.

Under section 4.55 of the *Environmental Planning & Assessment Act 1979*, an applicant may seek approval to modify a state significant development consent at any time. These modifications can be to improve project design or vary conditions of consent.

This modification has been prepared in accordance with legislation and applicable guidelines. As noted in the Modification Report, the project as modified would remain substantially the same development for which consent was originally granted. The proposed changes to the conditions of consent are detailed in Section 3.9 of the Modification Report.

5.4 Justification and evaluation

Nine submitters (13%) questioned the justification for the modification stating it was not in the public interest.

The project (as modified), in conjunction with other large-scale renewable energy projects, has potential to fill the need for replacement power as ageing coal-fired generators face closure. The project is consistent with relevant Commonwealth, State, regional and local strategic plans and polices, in particular the *NSW Electricity Infrastructure Roadmap*, which sets out the plan to deliver REZs in NSW. The project will contribute to the energy generation and storage targets for the CWO REZ, with an indicative capacity of around 600 MW and storage of approximately 900 MW for a four-hour duration.

The project (as modified) will provide economic benefits and stimulus to the local region and generate up to approximately 650 jobs during construction and approximately 20 full time equivalent jobs throughout operations. The project will provide ongoing economic benefits for both the local economy within the Mid-Western Regional LGA and the Warrumbungle Shire LGA and more broadly, the regional economy within the Central West.

ACEN will work in partnership with the local Councils to ensure that, as far as possible, the benefits of the projected economic growth in the region are maximised and impacts minimised.

5.5 Issues beyond the scope

Seventeen submitters (25%) raised matters that are beyond the scope of this modification relating to objections to the renewables industry, and objections to REZs.

The project (and modification) is consistent with relevant Commonwealth, State, regional and local strategic plans and polices, and in particular the NSW Electricity Infrastructure Roadmap, which sets out the plan to deliver REZs in NSW. The development and operation of the project, including the modification, in conjunction with other large-scale renewable energy projects, will contribute to filling the need for replacement power as ageing coal-fired generators close.

The project (and modification) will generate electricity from renewable solar energy that will be supplied into the National Electricity Network (NEM). The local area around the project is connected to the NEM and uses and relies on electricity generated throughout the network. Although the power generated from the project will not solely be consumed locally, the renewable sourced power will be injected back into national grid to be consumed nationally.

ACEN acknowledges the concerns raised by submitters relating to the identification and selection of REZs; however, the CWO REZ justification, consultation, and policy (including landholder agreements and acquisition) is outside of the scope of this individual project within the already declared REZ. Details on REZs in NSW, including the CWO REZ are provided on EnergyCo's public website (https://www.energyco.nsw.gov.au/cwo-rez).

6 Updated project justification

6.1 Introduction

This section provides a justification and evaluation of the modified project as a whole, having regard to the economic, environmental, and social impacts and benefits of the modified project and the principles of ecologically sustainable development (ESD).

Matters raised in submissions on the modification are addressed in this report, which demonstrates no changes to the modified project are required, and matters raised are addressed through identified mitigation measures (refer to Appendix B). The project description, along with its justification including evaluation and benefits as presented in the Modification Report (Chapter 6), therefore remains a true and accurate reflection of the modified project for which approval is sought.

6.2 Evaluation

The Birriwa Solar and Battery Project is a large-scale, State significant permitted development that will deliver new, firmed clean energy generation into the National Electricity Market within the next three years.

Based on the impact assessment findings for the modification (Section 6 of the Modification Report, EMM 2025), the proposed modification will result in minor changes to environmental and social values compared to the approved project and is considered to be substantially the same development for which consent was originally granted.

The potential impacts are summarised as follows:

- Biodiversity – The modification will result in an increase in the development footprint requiring additional clearing and associated impacts to native vegetation and fauna. An additional 69.05 ha of native vegetation would be cleared as a result of the modification. Areas of high biodiversity value have been avoided as much as possible. To compensate for unavoidable disturbance of native vegetation and threatened species habitat, offsets are proposed.

- Aboriginal cultural heritage – Avoidance of Aboriginal cultural heritage values has been a key aspect of the project refinement process. ACEN has refined the modification development footprint of the solar panels and associated infrastructure to avoid identified heritage sites including White Creek IF-1, IF-2, IF-3 and site 36-3-4095. Site 36-3-4102 is unable to be avoided and will be subject to salvage. In addition, the dripline of the scarred tree site 36-3-3918 extends into the development footprint of the Birriwa Bus Route South upgrade; however, there are opportunities to avoid harm to this site through the implementation of management measures in consultation with RAPs.

- Visual – Visual impacts associated with the modification are expected to be very low. Landscape screening identified in the consent conditions is considered appropriate and no additional mitigation measures are required.

- Traffic – The modification seeks an increase in the number of project related vehicles by up to 30% (i.e. a total of 156 daily heavy vehicle movements), and an alternative access route along Merotherie Road and Birriwa Bus Route South. Road and intersection upgrades will be required to accommodate the increased traffic associated with the construction phase. EnergyCo will undertake the Golden Highway/Merotherie Road intersection upgrade and the Merotherie Road upgrade as part of the EnergyCo CWO REZ Transmission project. ACEN will undertake the Merotherie Road/Birriwa Bus Route South intersection upgrade, and upgrade to Birriwa Bus Route South, in consultation with Mid-Western Regional Council.

- Noise and vibration – Noise emissions for the modified project were modelled and identified that construction noise, operational noise emissions and road traffic noise would comply with all relevant criteria. The noise management measures identified in the consent conditions are considered appropriate and no additional mitigation measures are required.

- Surface water and flooding – Riparian corridor buffers have been adopted in the project design to protect watercourses. There may be some minor flood risk to the operational infrastructure areas in parts generally associated with drainage lines and the tributary of White Creek. These risks are considered to be minor and manageable with implementation of a freeboard allowance when constructing BESS pads and a clean water diversion around the development in operational infrastructure areas.

- Land use, soils and agriculture – The modification will be undertaken on an area of up to 257 ha of land that is currently subject to agriculture land use. Following decommissioning and rehabilitation, it is expected that there will be no permanent decrease in land available for agriculture use.

- Social – The modification would result in only minor changes to the impacts or benefits of the project. One new benefit was identified with the potential for long term benefits associated with improvements to Birriwa Bus Route South.

- Hazards and risk – Public safety risks, including bushfire, hazards and risks associated with project infrastructure, will be mitigated through design of buildings, construction areas and other assets to include appropriate bushfire protection measures (e.g. asset protection zones), and emergency access and evacuation protocols, which will be developed as part of the emergency response plan.

- Historical heritage – The project will not impact any historical heritage sites.

6.3 Benefits

The key objective of the project is to deliver much needed renewable energy into NSW. With an indicative capacity of around 600 MW and storage of approximately 900 MW for a four-hour duration, the modified project will play an important part in achieving the objectives of the CWO REZ, which is to initially unlock at least 4.5 gigawatts (GW) of new network capacity by the late-2020s, and around 6 GW by 2038. The project (as modified), in conjunction with other large-scale renewable energy projects, has the potential to fill the critical need for replacement power as ageing coal-fired generators face closure. It is consistent with relevant Commonwealth, State, regional and local strategic plans and polices, in particular the *NSW Electricity Infrastructure Roadmap*, which sets out the plan to deliver REZs in NSW.

Modifying the project area and development footprint across additional neighbouring lots will enable flexibility in design and construction, optimisation of the solar array and BESS layout, and will allow sufficient space for maintenance. The additional land will allow the project to increase its energy storage potential, providing additional firming support and greater network system strength.

An alternative access provides a number of benefits. The Network Operator is currently upgrading parts of Merotherie Road between the Golden Highway and the Merotherie Hub as part of the approved CWO REZ Transmission Project (SSI-48323210). This upgrade presents an opportunity for the project to use the future upgraded road as an alternative access route to the project. This co-location of road upgrade impacts, relating to the CWO REZ Transmission Project and ACEN's projects along Merotherie Road and Birriwa Bus Route South, would allow better management of construction traffic impacts.

The project (as modified) will also provide significant economic benefits and stimulus to the local region and generate up to approximately 650 jobs during construction and approximately 20 full time equivalent jobs throughout operations. The project will provide ongoing economic benefits for both the local economy within the Mid-Western Regional LGA and the Warrumbungle Shire LGA and more broadly, the regional economy within the Central West.

ACEN will work in partnership with Mid-Western Regional Council and the local community to ensure that, as far as possible, the benefits of the projected economic growth in the region are maximised and impacts minimised.

6.4 Conclusion

The approved Birriwa Solar and Battery Project will play an important part in achieving the objectives of the CWO REZ by contributing to the continued growth of renewable energy generation and storage capacity. The project will provide economic benefits for both the local economy within the Mid-Western Regional LGA and the Warrumbungle Shire LGA and more broadly, the regional economy within the Central West.

ACEN is seeking to modify SSD-29508870 under section 4.55(2) of the EP&A Act. The modification will enable flexibility in design and construction and optimisation of the solar array layout, increase the project's energy storage potential providing additional firming support and greater network system strength, increase employment opportunities during the peak construction period, allow sufficient space for maintenance, and provide an alternative access route to the project.

A range of assessments have been undertaken to support the modification. These assessments show that the modification will result in minimal environmental impacts beyond those previously assessed and approved under SSD-29508870. The modified project will comply with all relevant government legislation, plans, policies and guidelines.

The project (as modified) will remain substantially the same development for which consent was originally granted. As such, it is considered that the modification can be approved, with no further changes required as a result of submissions, pursuant to section 4.55(2) of the EP&A Act.

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Appendix A
Submissions register

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A.1 Submissions register – agencies and council advice

Note, Appendix A (Table A.1 and Table A.2) is included within the main document and this Appendix **will not** be separated to ensure section references are hyperlinked.

Table A.1 Submission register – agencies and council advice

Name	Section where issue addressed
Regulatory agencies	
DPHI – Crown Lands	4.1
DPIRD – Fisheries	4.1
Fire and Rescue NSW (FRNSW)	4.1
DPIRD - NSW Resources	4.1
Department of Primary Industries and Regional Development (DPIRD)	4.2
Department of Planning, Housing and Infrastructure (DPHI) - Hazards	4.3
EnergyCo NSW	4.4
Department of Climate Change, Energy, the Environment and Water – Water NSW	4.5
Department of Climate Change, Energy, the Environment and Water – Heritage NSW	4.6
Transport for NSW	4.9
Conservation Programs, Heritage and Regulation (CPHR)	4.10, Appendix E and Table A.3
Councils	
Mid-Western Regional Council	4.7
Warrumbungle Shire Council	4.8

A.2 Submissions register – public and organisation submissions

Table A.2 Submission register – public and organisation submissions

Name	Submission ID	Location	Section where issue addressed
Grant Piper	SE-91822714	Coolah, NSW	5.5
David Allworth	SE-92297710	Mudgee, NSW	5.1.3i, 5.1.2, 5.1.8ii, 5.1.13, 5.2.4
Dennis Armstrong	SE-92334210	Gulgong, NSW	5.1.1, 5.2.1, 5.5
Annette Piper	SE-92338219	Coolah, NSW	5.1.2, 5.1.7i, 5.2.2, 5.3.1, 5.4
Lynette LaBlack	SE-92342462	Lake Albert, NSW	5.1.1, 5.3.1, 5.3.2
Noel Hicks	SE-92344466	Griffith, NSW	5.1.1, 5.1.3i, 5.3.1, 5.3.2

Name	Submission ID	Location	Section where issue addressed
UTLA	SE-92346712	Coolah, NSW	5.1.2, 5.1.4ii, 5.4
John Clark	SE-92349706	Hay, NSW	5.1.2, 5.1.3i, 5.1.4i, 5.1.5, 5.1.6, 5.3.2, 5.5
John McBratney	SE-92353962	Lancefield, VIC	5.1.1, 5.1.3i, 5.1.4ii, 5.3.2, 5.5
Eunice Steinhardt	SE-92354957	Redbank Plains, QLD	5.1.3i, 5.1.4i, 5.1.10, 5.3.2
Tegan Hare	SE-92354963	Swan Hill, VIC	5.1.3i, 5.1.5, 5.3.2
Ian McDonald	SE-91309457	Walcha, NSW	5.1.1, 5.1.4i¸5.1.8i, 5.1.9, 5.1.12, 5.2.1, 5.5
Withheld	SE-91553714	Gladesville, NSW	5.1.1, 5.1.2, 5.1.5, 5.1.6, 5.1.7i, 5.1.8i, 5.1.9, 5.1.8ii
David Bowman	SE-91714457	Dunedoo, NSW	5.1.1, 5.5
Withheld	SE-91819210	Leadville, NSW	5.1.5, 5.1.7ii, 5.2.2
Withheld	SE-91820207	Leadville, NSW	5.1.7i, 5.1.7ii, 5.2.2, 5.3.1
Withheld	SE-91820957	Yarrabin, NSW	5.1.7ii, 5.2.2, 5.3.1
Grant Piper	SE-91822212	Coolah, NSW	5.2.1
Withheld	SE-91873477	Dubbo, NSW	5.1.2, 5.1.5, 5.1.7i, 5.1.7ii, 5.1.12, 5.3.1, 5.3.3
Withheld	SE-91884957	Kanya, VIC	5.1.7ii, 5.2.2, 5.3.1
Amanda Bowman	SE-91943957	Merotherie, NSW	5.1.2, 5.1.7ii, 5.2.1
Withheld	SE-91963712	Mollyan, NSW	5.2.1
Withheld	SE-91963723	Balgowlah, NSW	5.2.1
Withheld	SE-91966957	Dunedoo, NSW	5.1.2, 5.1.7i, 5.1.7ii, 5.2.2, 5.3.1
Withheld	SE-91969462	Mollyan, NSW	5.2.1
Withheld	SE-91969472	Mendooran, NSW	5.2.1
Withheld	SE-91972713	Mendooran, NSW	5.2.1
Withheld	SE-91972721	Coonabarabran, NSW	5.2.1
Withheld	SE-91974970	Coonabarabran, NSW	5.1.5, 5.1.6
Withheld	SE-91979707	Mollyan, NSW	5.1.1
Tamara Phillips	SE-91984457	Leadville, NSW	5.1.2, 5.1.5, 5.1.6, 5.1.8i, 5.1.4ii, 5.2.1, 5.3.3, 5.5
Clarinda Mulligan	SE-91984978	Merrygoen, NSW	5.1.5, 5.3.1, 5.5, 5.4
tricia stewart	SE-91992458	Geurie, NSW	5.1.1, 5.1.8i, 5.3.3
Serena Perry	SE-91995209	Tallawang, NSW	5.1.1, 5.1.5, 5.1.6, 5.1.8i, 5.3.1¸5.5
Serena Perry	SE-91997725	Tallawang, NSW	5.1.1, 5.1.6, 5.1.7i, 5.1.8i, 5.1.4ii¸5.1.9, 5.3.3, 5.4
Withheld	SE-92005959	Balgowlah, NSW	5.3.1

Name	Submission ID	Location	Section where issue addressed
Withheld	SE-92083496	Dunedoo, NSW	5.1.1, 5.1.2, 5.2.1
Richard Fitzpatrick	SE-92235750	Surry Hills, NSW	5.1.1, 5.1.3i, 5.1.6, 5.1.7ii, 5.2.2, 5.3.1, 5.3.3
Michael John French	SE-92242207	Turramurra, NSW	5.1.1, 5.1.9, 5.5
Withheld	SE-92256457	Gulgong, NSW	SUPPORT
Helen Kay	SE-92261207	Comobella, NSW	5.1.2, 5.1.4i, 5.1.5
Withheld	SE-92271207	Boorooma, NSW	5.2.1, 5.3.3
Sally Edwards	SE-92283707	Coolah, NSW	5.1.1, 5.1.5, 5.1.8ii, 5.5
Nigel Roberts	SE-92283711	Elong Elong, NSW	5.1.2
Kayleen Fergusson	SE-92323708	Eurunderee, NSW	5.1.1, 5.1.5, 5.1.6, 5.1.7i, 5.1.8i, 5.3.1
Withheld	SE-92328461	Moulamein, NSW	5.1.3i, 5.4
Withheld	SE-92329972	Gulgong, NSW	5.1.1, 5.1.2, 5.1.4i, 5.3.3, 5.5
Withheld	SE-92329974	Gulgong, NSW	5.1.3i, 5.1.4i, 5.1.6, 5.3.3
Withheld	SE-92337220	Geurie, NSW	5.1.1, 5.1.2, 5.1.6, 5.1.7i, 5.2.2, 5.3.1, 5.3.3
Frances Bowman	SE-92339710	Tambar Springs, NSW	5.3.1, 5.3.3
Kathryn Reynolds	SE-92341959	Coolah, NSW	5.1.2, 5.1.3i, 5.5, 5.4
Emma Bowman	SE-92343458	Dunedoo, NSW	5.1.1, 5.1.7ii, 5.2.1, 5.3.1, 5.3.3, 5.4, 5.5
Withheld	SE-92344457	Kooringal, NSW	5.1.3i, 5.1.4i, 5.3.2, 5.3.3
Withheld	SE-92344462	Kepnock, QLD	5.1.1, 5.1.2, 5.1.4i, 5.3.2
Withheld	SE-92344958	Coolah, NSW	5.1.1, 5.1.5, 5.1.6
Withheld	SE-92345707	Coolah, NSW	5.4
Withheld	SE-92346457	Harefield, NSW	5.1.3i, 5.1.4ii, 5.1.3ii, 5.4
Withheld	SE-92347959	Springfield, NSW	5.1.4ii
Withheld	SE-92348707	Griffith, NSW	5.1.3i, 5.1.4i, 5.3.2
Withheld	SE-92349958	Hay, NSW	5.1.4i, 5.1.7i, 5.3.2
Withheld	SE-92350957	Hay, NSW	5.1.4ii, 5.1.3ii, 5.3.2
Henry Armstrong	SE-92351466	Birriwa, NSW	5.1.2, 5.1.4i, 5.1.5, 5.1.6, 5.1.7i, 5.1.8i, 5.1.10, 5.2.5, 5.3.1
Withheld	SE-92352957	Lancefield, VIC	5.1.4i, 5.3.2, 5.5
Withheld	SE-92353960	Guyra, NSW	5.1.1, 5.1.4i, 5.1.5, 5.1.4ii¸5.1.10, 5.2.3
Withheld	SE-92353964	Springfield, QLD	5.1.2, 5.3.2, 5.5
Withheld	SE-92354457	Redbank Plains, QLD	5.1.1, 5.1.4i

Name	Submission ID	Location	Section where issue addressed
Withheld	SE-92354960	Hay, NSW	5.1.3i, 5.3.2
Withheld	SE-92357957	Lake Albert, NSW	5.1.1, 5.1.3i, 5.1.4i, 5.3.2, 5.3.3, 5.5

A.3 CPHR recommendations and where they have been addressed

Table A.3 CPHR recommendations and where they have been addressed

ID	Recommendation	Where addressed in this report	Where addressed/updated in the revised BDAR
1 Ensure certification and data provision meet BAM requirements, and credits in the BDAR and BAM-C cases match			
1.1	Submit a single consolidated BDAR for the modification, certified in accordance with section 6.15(1) of the BC Act. Finalise and submit the revised BAM-C cases in BOAMS, within 14 days of the date of BDAR certifications and submission.	Section 4.10.1i BC Act certification and supporting data	Appendix E (Revised BDAR)
1.2	Ensure all biodiversity credit summaries within the credit reports generated from the finalised BAM-C cases.	Section 4.10.1ii consistent credit summaries	Appendix E (Revised BDAR) Revised BAMC
1.3	Ensure the revised BDARs and supporting data meets the minimum information requirements set out in Appendix K of the BAM, at the time of resubmission.	Section 4.10.1i BC Act certification and supporting data	Appendix E (Revised BDAR)
2 Review key assessment information and BAM-C cases to ensure consistency and correct application of the BAM			
2.1	Clarify the extent of direct impacts associated with the modification and ensure these are assessed in accordance with the BAM.	• Section 4.10.2i Merotherie Road/BBRS intersection • Section 4.1.2 (ii) Creek crossings	The modification development footprint has been amended on all BDAR figures (and modification submissions report figures).
3 Native vegetation cover percentage requires review			
3.1	Re-examine the extent of woody and non-woody native vegetation within the two assessment areas via: a) undertaking finer scale vegetation extent mapping, including both woody and non-woody vegetation b) considering all native vegetation mapped for the total modification disturbance footprint	• Section 4.10.3i Additional lots • Section 4.10.3ii BBRS	Section 3.2.1 and Figure 3.1 of the revised BDAR and in the revised BAM calculator.

ID	Recommendation	Where addressed in this report	Where addressed/updated in the revised BDAR
3.2	Recalculate the percentage of native vegetation cover within the assessment areas for both project stages. If reassessment of the native vegetation percent cover results in an increase to the applicable cover class, review the list of candidate species and update the assessment.	• Section 4.10.3i Additional lots • Section 4.10.3ii BBRS	Section 3.2.1 and Figure 3.1 of the revised BDAR and in the revised BAM calculator.
3.3	Supply final GIS shapefiles supporting the calculation of native vegetation percent cover for both project stages within the revised BDAR.	• Section 4.10.3i Additional lots • Section 4.10.3ii BBRS	Supplied to CPHR
4 Review the patch size calculation			
4.1	Review and explain the patch size calculations. If patch size estimates change, review the list of candidate species and update the assessment.	Section 4.10.4i Patch size calculation method	Section 3.2.2 of the revised BDAR.
5 Review vegetation zone mapping, plot allocation and BAM-C data entry			
5.1	Review the vegetation zone mapping for the additional lots stage BDAR: • Include justification in accordance with s.4.1.2 of the BAM (areas that do not contain any native vegetation) for all areas assessed as non-native vegetation. If the exotic pasture mapped is considered a vegetation zone, supply the VI score noted in the BDAR and the supporting data. • Confirm the PCT 281 DNG boundaries within the northern lot against aerial imagery and justify the delineation of the zone boundary.	Section 4.10.5i Additional lots stage – vegetation zone delineation	• Section 4.2.2 of the revised BDAR. • Section 4.3 of the revised BDAR. • Figure 4.1 and Appendix C of the BDAR.
5.2	Check vegetation zone attribution within the vegetation zone shapefile, particularly for plots 3, 5, and 7.	Section 4.10.5ii BBRS – allocation of BAM plots of vegetation zones	
5.3	Explain plot placement in relation to the mapped vegetation zones.	Section 4.10.5ii BBRS – allocation of BAM plots of vegetation zones	

ID	Recommendation	Where addressed in this report	Where addressed/updated in the revised BDAR
5.4	If hollow bearing trees will be removed, ensure that at least one plot per vegetation zone captures this, to ensure the credit profile for ecosystem credits records this for offsetting requirements.	Section 4.10.5iii BBRS – hollow bearing trees are not represented in the plots used in the assessment	See Appendix C of the BDAR, EMM has included the presence of HBTs into the BAMC as per explanation in Section 4.1.5 (iii) of the modification submissions report.
5.5	For the ELA BAM plots, provide plot data sheets and a digital shapefile which shows start and finish points for the BAM plots.	Section 4.10.5iii BBRS – hollow bearing trees are not represented in the plots used in the assessment	Plot data sheets provided
6 Undertake comprehensive review of the candidate species assessment			
6.1	Undertake a review of candidate species assessments in the BDARs and BAM-C cases for the entire modification development footprint, correcting all inconsistencies and inaccuracies ensuring survey adequacy against relevant survey guides, and providing a consolidated candidate species assessment across the development site.	Section 4.10.6i issues identified in the candidate species assessment	Chapter 5 of the revised BDAR.
6.2	Ensure all species habitat suitability assessments and exclusions provide clear justification in relation to habitat constraints or known microhabitats required being absent or degraded to the point the species is unlikely to occur (BAM s.5.2.3).	Section 4.10.6i issues identified in the candidate species assessment	Section 5.3 of the revised BDAR
6.3	Present evidence within the BDAR for adequate surveys being undertaken during optimal conditions to detect bluegrass.	Section 4.10.6i issues identified in the candidate species assessment	Section 5.3.3 of the revised BDAR
6.4	For the large-eared pied bat provide a shapefile of the suitable habitat identified within Barney's Reef, with a 2 km buffer applied. Include any associated PCTs on the development site in the 2 km buffer in the species polygon.	Section 4.10.6i issues identified in the candidate species assessment	Supplied to CPHR
6.5	Provide adequate justification for not creating an eastern cave bat species polygon, otherwise generate a species polygon in accordance with the BAM species credit threatened bat guide.	Section 4.10.6i issues identified in the candidate species assessment	Section 6.4 of the revised BDAR

ID	Recommendation	Where addressed in this report	Where addressed/updated in the revised BDAR
7 Provide additional detail to document and justify all efforts to avoid or minimise and to describe direct, indirect and prescribed impacts			
7.1	Detail and justify avoidance and minimisation measures in accordance with the requirements of sections 7.1 and 7.2 of the BAM, including a summary of alternatives considered.	Section 4.10.7i clarification of avoidance measures	Section 6.3 of the revised BDAR
8 Revision of the indirect and prescribed impact assessments and proposed mitigation measures is required to address inconsistencies and meet BAM requirements.			
8.1	Ensure all requirements of the BAM have been met for assessment of indirect impacts, prescribed impacts and mitigation measures.	• Section 4.10.8i Indirect impact assessment • Section 4.10.8ii Prescribed impact assessment	• Section 6.3 and Table 6.3 of the revised BDAR • Section 6.2 and Table 6.1 of the revised BDAR
8.2	Present consolidated and consistent evaluations of indirect and prescribed impacts for the entire modification, ensuring the full extent of the impacts are defined and assessed.	• Section 4.10.8i Indirect impact assessment • Section4.10.8ii Prescribed impact assessment	• Section 6.3 and Table 6.3 of the revised BDAR • Section 6.2 and Table 6.1 of the revised BDAR
8.3	Present a single consolidated and consistent set of mitigation measures that will be implemented for the modification.	Section 4.10.8iii) mitigation measures	Table 6.2, Table 6.3 and Table 6.4 of the revised BDAR. Appendix B of this report reflects the changes to the biodiversity mitigation measures.
9. CPHR evaluation and advice on the risk of SAII is deferred until re-submission of a revised BDAR			
9.1	Update the SAII information (BAM s 9.1) based on the cumulative impact of the modification.	Section 4.10.9i SAII risk	Section 6.4 of the revised BDAR.

Appendix B
Summary of mitigation measures

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B.1 Updated summary of mitigation measures

The proposed mitigation measures for the project are presented in Table B.1. Note: New or updated mitigation measures as a result of the modification and the revised BDAR have been **bolded**. Removed mitigation measures as a result of the modification have been shown as ~~strikethrough~~.

Table B.1 Summary of mitigation measures

ID	Mitigation measures
Biodiversity	
BIO1	A biodiversity management plan (BMP) will be prepared for the project. The BMP will document the measures to avoid and minimise direct and indirect impacts to ecological values and natural assets. **The BMP will identify management of remnant vegetation that will be retained within the BBRS study area. The BMP will include adaptive management strategies to monitor and respond to prescribed and uncertain biodiversity impacts including indirect impacts on retained Box Gum Woodland, impacts on potential roosting habitat in buildings or threatened microbats, as well as potential impacts to unexpected finds, particularly threatened species.**
BIO2	Following construction, species consistent with PCT **277** and PCT 281 will be included in landscaping to increase the floristic and structural diversity of the land.
BIO3	Pre-clearance surveys will be conducted prior to removal of **potential fauna habitat including** hollow bearing trees, **with a suitably qualified ecologist/fauna spotter-catcher present during hollow-bearing tree felling** to mitigate injury to potential fauna species inhabiting hollows.
BIO4	**Clearing works will be timed, where practicable, to avoid critical life cycle events for fauna species, including but not limited to breeding and nursing of young.** **Timing clearing works to avoid critical life cycle events such as breeding or nursing or when migratory species are absent from the site– active breeding or nesting identified during pre-clearance surveys will be avoided in August, September and October, which is the breeding/nesting period for most fauna species.**
BIO5	**Where practicable, noise barriers will be implemented and/or works will be timed to limit the impact of noise from construction and operational activities.**
BIO6	**Where practicable, light shields will be implemented and/or construction works will be conducted during the day to limit the impact of light spill. No night lights will be used.** **Lights associated with operation will be positioned to avoid light spill into surrounding habitat, or adjacent retained vegetation, where possible.**
BIO7	**Hollows from felled trees and hollow logs will be salvaged where possible for later re-use in rehabilitation.**
BIO8	**Prior to clearing, a hollow-bearing tree survey will be completed to determine the number and type of hollows to be impacted by the detailed design and nest boxes will be installed adjacent to the construction area at a 2:1 ratio to compensate for hollows lost to clearing.**
BIO9	Exclusion fencing ('no go' zones) will be used to avoid indirect impact to retained native vegetation. This includes temporary fencing, bunting tape or similar and signage to protect or avoid habitats to be retained. This will be maintained and checked daily through construction.
BIO10	All workers will be made aware of ecologically sensitive areas and the need to avoid impacts including adjacent native vegetation. **All personnel working on the project will undertake an environmental induction as part of their site familiarisation including site environmental procedures (vegetation management, sediment and erosion control, exclusion fencing and noxious weed management) as well as protocols in case of environmental emergencies (e.g. chemical spills, fire, injured fauna).**
BIO11	**Clearing protocols will be developed that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance (e.g. removal of native vegetation by chainsaw instead of heavy machinery where only partial clearing is proposed).**

ID	Mitigation measures
BIO12	Chemicals and fuel will be managed in accordance with Safe Work Australia guidelines (e.g. employ use of barriers, inspecting tanks and containers, etc).
BIO13	Appropriate spill containment materials (or spill kits) will be used to clean-up spills if they occur. This will avoid unintentional impacts to Box Gum woodland, Grey Box woodland and native vegetation due to chemical or fuel runoff.
BIO14	Sediment controls, including fencing and sediments traps, will be installed in any areas where works will occur in proximity to waterways to avoid increased sedimentation and erosion of watercourses.
BIO15	**Appropriate controls will be implemented to manage exposed soil surfaces and stockpiles to prevent sediment discharge into waterways. All works within proximity to the drainage lines will have adequate sediment and erosion controls (e.g. sediment barriers, sedimentation ponds). Revegetation will also commence as soon as is practicable to minimise risks of erosion. Suitable species will be used as ground cover in any revegetation areas.**
BIO16	**Priority** weeds will be removed prior to clearing. Weeds will be stockpiled appropriately prior to removal from the study area to avoid the spread/introduction of seed and other propagules.
BIO17	Weed hygiene protocols will be put in in place prior to entering the site including wash-down procedures to all plant and machinery. This will avoid weed introduction from outside of the site.
BIO18	Coolatai Grass (*Hyparrhenia hirta*), and St. Johns Wort (*Hypericum perforatum*) are to be managed as per the *Biosecurity Act 2015* and their regional recommended measures (Section 7.3 of BDAR). If any other priority weeds of NSW are identified in the study area during construction, they will be removed from the site.
BIO19	Dust levels will be monitored and dust suppression strategies implemented where required, i.e. wetting down dirt roads or reducing vehicle speeds.
BIO20	**Revegetation will also be commenced as soon as practicable to minimise areas likely to create dust. Suitable species will be used as ground cover species in any revegetation areas.**
BIO21	**Regular inspection of waterway crossings for accumulation of debris which block fish passage, and removal of such debris if present.**
BIO22	**3. Implement structural features to dissipate high energy flow. These could include rock baffles or riparian areas prone to erosion.** **Monitor banks and bed for signs of erosion.**
BIO23	**Install replacement habitats for fauna in adjacent retained vegetation and habitat or human made structures to replace the habitat resource lost relating to the loss of hollow bearing trees (HBTs) and encourage animals to move from the impacted site, e.g. nest boxes.**
BIO24	**A Traffic Management Plan will be developed for the modification including speed limits, reductions to driving at night, and wildlife awareness training to minimise risk of vehicle strike during the construction of the solar and BESS and operation of the accommodation facility during the construction phase of the solar and BESS when there is expected to be an increase in traffic movements.**
BIO25	**Weekly carcass monitoring will be conducted in road reserves within the project area for Masked Owl. Monitoring will be conducted during construction of the BESS and solar and operation of the accommodation facility.**
BIO26	**The adaptive management strategy in Section 6.3.2 of the BDAR will be included in the BMP.**
Visual	
VIS1	Mitigation measures will be undertaken in accordance with Table 5.2 and Table 5.3 of the VIA.
VIS2	Landscape planting will be undertaken in accordance with the Landscape Plan (Figure 6.1 of VIA).
VIS3	Laydown areas will be located in areas with limited visibility from residences and public roads.
VIS4	Clearing and trimming of vegetation will be kept to a minimum.
VIS5	Finishes and products that minimise or eliminate surface glare will be selected as part of design. Neutral colours that blend in with the surrounding landscape i.e. khaki, green, beige, or similar, will also be selected, where possible.

ID	Mitigation measures
VIS6	The principles of the *Dark Sky Planning Guideline* will be implemented.
Traffic and transport	
TT1	A channelised right turn treatment (CHR) will be installed at the Castlereagh Highway/Barneys Reef Road intersection northbound approach.
TT2	Resurfacing and widening will be completed on Barneys Reef Road and Birriwa Bus Route South in compliance with Austroads rural roads design standards, and in further consultation with relevant authorities during subsequent phases of project design and assessment.
TT3	A detailed traffic management plan (TMP) will be developed in consultation with **CWCT**, Mid-Western Regional Council and Warrumbungle Shire Council prior to the commencement of road upgrades and construction of the project. **The TMP will take into consideration the Network Operator's traffic management plan where relevant**. These will include a Driver Code of Conduct addressing: • informing drivers **and / or operating companies** about the school bus routes along Castlereagh Highway, **Golden Highway, Merotherie Road and Birriwa Bus Route South** • direction to avoid compression braking near residential receptors • direction to avoid trips during school zone times (8:00 am–9:30 am and 2:30 pm–4:00 pm) • in consultation with relevant councils and road authorities, install school bus signs at suitable locations along construction routes if necessary to warn heavy vehicle drivers of student drop-off and pick-up areas • responding to local climate conditions that may affect road safety such as fog, dust and wet weather. The TMP will be prepared by suitably qualified persons in accordance with the TfNSW (2022) *Traffic Control at Work Sites Manual*.
TT4	**ACEN are committed to implementing traffic mitigation measures to minimise impacts on any part of the cycle trail that may be affected by project traffic. This could include:** • in consultation with the CWC Trail Inc, a signage plan will be prepared, highlighting the CWCT within and in the vicinity of the project • within the site induction and driver's code of conduct, the CWCT will be highlighted to increase awareness of cyclists' presence in the area • in site-specific circumstances, e.g. peak construction activities, a traffic controller may be required to manage the vehicular traffic and cyclists which is subject to site supervisor's safety assessment and discretion • **a dedicated phone number will be provided for CWCT users to call confirm safe passage before using the trail during peak construction periods. This phone number would be listed on a sign approximately 1 km from the start of construction and on the CWCT website** • **safe pull over bays for bicycles will be identified along the construction route, which would move depending on the construction schedule** • **provision of speed management strategies.**
TT5	A permit will be obtained (from NHVR) to allow oversize or overmass vehicles to use the road network as part of construction.
TT6	ACEN will design up to three public road crossings to Mid-Western Regional Council's satisfaction, generally in accordance with the design considerations approved at the traffic committee meeting on 17 June 2022.
TT7	A road maintenance program will be developed in consultation with the relevant road authorities to be undertaken during construction and will include route inspections of all the affected local roads. Any new road pavement damage which occurs to these roads during the project construction period from construction activities, which represent a potential traffic safety risk to the travelling public, will be restored to their pre-construction condition at the completion of construction.
TT8	**Project traffic will not use Golden Highway / Merotherie Road intersection or Merotherie Road until these have been upgraded as part of EnergyCo CWO Renewable Energy Zone Transmission project (Merotherie Energy Hub).**
TT9	**ACEN proposes to undertakethe Merotherie Road/Birriwa Bus Route South Road intersection upgrade, and upgrade to Birriwa Bus Route South Road to the satisfaction of the Mid-Western Regional Council and in consultation with the Network Operator.**

ID	Mitigation measures
TT10	**ACEN will upgrade the portion of Birriwa Bus Route South between Merotherie Road and the proposed alternative access point as per Mid-Western Regional Council's requirements.**
Aboriginal heritage	
AH1	Prior to commencement of construction, an Aboriginal cultural heritage management plan (ACHMP) will be developed in consultation with DPHI, the RAPs and Heritage NSW.
AH2	During construction, temporary fencing will be installed around sites identified in the study area in the vicinity of the development footprint (Mangarlowe OS-1, Mangarlowe IF-1, **White Creek IF-1, White Creek IF-2, and White Creek IF-3**) and the location of all known sites will be shown on appropriate plans to ensure that they are not inadvertently harmed. **If 36-3-3918 (Birriwa Bus Route South ST-1) can be avoided, the site will be temporarily fenced while works are undertaken near the site.**
AH3	**Two** Aboriginal sites, Mangarlowe IF-2 **and 36-3-4102 (SNI-AS85)**, will be salvaged prior to the commencement of construction. **Should ground disturbing works within the dripline of 36-3-3918 (Birriwa Bus Route South ST-1) be unavoidable (grading and/or building up the road) management measures should be developed in consultation with RAPs and following the advice of an arborist. These management measures may include salvage (i.e. removal of the scarred portion of the tree) or alternate management of the tree should it be preferred to remain *in situ*, or alternative measures developed in consultation with RAPs should be followed.** The methodology for collection of this site will be finalised as part of the ACHMP.
AH4	In the event of discovery of new Aboriginal sites within the study area, the procedure detailed in Section 9.3.1 of the ACHA (Appendix I of the EIS) will be followed. In the event that newly identified sites will be impacted by the construction of the project and cannot be avoided, they will be managed in a manner commensurate with their assessed significance.
AH5	If the final design of the access track cannot avoid Winora IF-2, it will be salvaged prior to the commencement of construction. The methodology for the salvage of this site will be finalised as part of an ACHMP to be prepared for the project.
Hazards and risks	
HR1	Onsite security protocols will be implemented and staff will be present during operational hours.
HR2	BESS units will be certified to UL 9540A and installed in accordance with the manufacturer's instructions for best practice to mitigate fire propagation.
HR3	ACEN will keep a copy of deflagration hazard studies undertaken by manufacturer in accordance with UL 9540 or include explosion control measures such as passive safe ventilation of flammable gases under pressure.
HR4	If the containerised BESS is installed, a minimum one-hour fire rating (REI60) will be applied.
HR5	If the BESS is installed within a dedicated use building, the detailed design will consider: • compartmentalisation • occupancy and means of egress • fire barriers • exhaust and ventilation system • sprinkler system and required water volume • containment system for the expected fire protection system discharge.
HR6	The requirements of the National Construction Code and regulated Australian standards and codes will be met for an indoor BESS within dedicated use buildings (e.g. fire rating of materials, fire detection systems).
HR7	ACEN will consult with Fire and Rescue NSW (FRNSW) during detailed design of the facility to ensure that the relevant aspects of fire protection measures have been included. These may include: • type of firefighting or control medium • demand, storage and containment measures for the medium.
HR8	ACEN will review the investigation reports on the Victorian Big Battery Fire (occurred on 31 July 2021) and implement relevant findings for the BESS component of the project.

ID	Mitigation measures
HR9	Security fencing, cameras, and warning signs will be installed, and onsite security protocols implemented to deter trespassers and minimise unauthorised person access resulting in vandalism/asset damage to the infrastructure with the potential for self-injury during the act.
HR10	ACEN will engage with Mid-Western Local Emergency Management Committee (LEMC) to discuss how the site will be considered under the Mid-Western Local Disaster Plan (DISPLAN).
HR11	**To minimise the potential for off-site impacts, based on the consequence analysis for a battery unit on fire, a minimum setback of 24 m between the development footprint boundary and the closest battery unit.**
HR12	**Upon any significant modifications made to the project's design, the PHA should be reviewed and updated as required to ensure that the aspects considered (e.g. control measures, clearances between battery units, separation distance to off-site receptors) and assessments made in this report are still valid. Similarly, once the project's design is finalised and the battery original equipment manufacturer (OEM) is selected, the PHA should be revisited and updated as required.**
Noise and vibration	
NV1	If the actual fleet of plant and equipment required during construction varies significantly from that assumed within the NVIA, a risk assessment of the proposed works will be undertaken to determine the likelihood of noise impacts on surrounding residential assessment locations. Appropriate management and mitigation measures will be used, where required. A CEMP will be developed as part of the project and will include the risk assessment protocol and detail the management and mitigation measures to be implemented during construction consistent with best practice requirements.
~~NV2~~	~~To achieve compliance during construction with the ICNG noise goals, the following will be implemented:~~ ~~• during site establishment works, a construction exclusion zone of 650 m from non-associated residences will be established on Saturdays from 1:00 pm to 6:00 pm~~ ~~• during infrastructure delivery and installation, a construction exclusion zone of 300 m from non-associated residences will be established on Saturdays from 1:00 pm to 6:00 pm.~~
NV3	The safe working distances for cosmetic damage will be monitored throughout the construction process. If construction is within 25 m of sensitive structures, then work practices will be reviewed so that safe working distances are followed. If safe working distances need to be encroached, real time vibration monitoring with audible and visual alarms will be installed at vibration sensitive structures so actual vibration levels can be monitored and managed appropriately in real-time.
NV4	To achieve compliance with operational noise criteria, the following mitigation measures will be incorporated into the project design: • no electrical infrastructure (i.e. transformers or inverters) will be installed within 250 m of the property boundary of R3 • the 1,200 MVA grid transformer, which will form part of the BESS, will be installed with a 6.5 m high barrier, positioned to reduce noise impacts on nearby sensitive receivers (i.e. non-associated residences). Mitigation measures as outlined above may not be required to achieve compliance when more information is available (e.g. during detailed design). These mitigation measures may be refined if additional noise modelling during detailed design identifies alternative measures to achieve compliance with the NPfI (EPA 2017).
Land resources	
LR1	Prior to the commencement of construction, a Soil and Water Management Plan (SWMP) will be prepared and will include management measures to cover: • erosion and sediment control • soil preservation • dispersive subsoils • any cut and fill activities • drainage and landform design. The SWMP will be implemented during construction and operation of the project.

ID	Mitigation measures
LR2	As part of the CEMP, land disturbance processes will be developed to ensure unnecessary land disturbance does not occur, including provision for site inspection by the site Environmental Manager or delegate prior to disturbance to identify any necessary drainage and erosion and sediment controls are planned and implemented as required.
LR3	• **Agriculture land use will be re-established over all agricultural land removed from agriculture at the time of decommissioning (unless otherwise agreed with the landowner and/or regulatory authorities).** • **The modification area will be returned to an approximately equivalent potential agricultural productivity following the Project via soil management and LSC class reinstatement.** • **Stock fences, dams and irrigation infrastructure to be reinstated during decommissioning to suit post-project land use as required.**
LR4	• **All soil that is proposed to be disturbed as a result of the proposed modification will be handled in accordance with the SWMP which will include soil management measures relating to soil stripping, stockpiling, respread/reuse, and land rehabilitation. This will inform the Construction Environmental Management Plan (CEMP), Operational Environmental Management Plan (OEMP) and a Decommissioning and Rehabilitation Plan.** • **All disturbed land within the modification area will be returned to an equivalent LSC class following the end of life for the Project, through site rehabilitation and good soil management practices in accordance with the SWMP prepared for the Project.** • **All soil resources within the modification area are to be managed throughout construction, operation and decommissioning phases of the Project in accordance with a SWMP which should include erosion and sediment control recommendations.**
LR5	**Pest species will be managed in accordance with a detailed protocol relating to weed and pest control.**
LR6	**Biosecurity will be managed in accordance with a detailed protocol relating to biosecurity.**
Water resources	
Water quality	
WQ1	Prior to the commencement of construction, a Soil and Water Management Plan (SWMP) will be prepared, which will outline mitigation measures to be implemented during construction and operation of the project. Mitigation measures may consist of staged construction, construction outside the wet season and erosion and sediment control (ESC) measures such as sediment fences and sediment basins.
WQ2	The SWMP will also outline ESC measures to minimise the risk of erosion from unsealed roads in the study area. Mitigation options may include rumble pads, sediment fencing and sediment basins.
WQ3	The CEMP will include measures to minimise the risk of contamination from chemical spills.
Flooding	
FLO1	The natural state of the draining flow paths will be maintained whenever possible. Internal access roads, where crossing watercourses, will be designed for the 10% AEP design flow and may include compacted rock causeways to provide low maintenance access with limited impact on the drainage line or culvert structures.
FLO2	Foundations for the PV arrays and transmission lines will be located where possible outside of the areas identified as higher flood hazard. Solar panels will be designed to provide a minimum of 300 mm freeboard for the lowest edge above the maximum 1% AEP flood level. The panel posts and footings will also be designed to withstand the predicted flood velocities (adding scour protection if required).
FLO3	Infrastructure with the potential to cause pollution to waterways in the event of flooding (i.e. inverters and BESS components) will be located with a minimum 300 mm freeboard above the maximum 1% AEP flood level.
FLO4	BESS components will be located on pad areas and aligned with local overland flow paths to prevent flows being redirected. **Where flood prone areas cannot be avoided in the operational infrastructure area and BESS locations, it is recommended that BESS pads would be flattened and constructed with a freeboard of 0.3 m from the 1% AEP flood event height.**

ID	Mitigation measures
FLO5	The design and construction of waterway tracks and cable crossings and all internal tracks crossing watercourses within the development footprint will be generally in accordance with the *Guidelines for controlled activities on waterfront land – riparian corridors* (Natural Resources Access Regulator 2018), *Guidelines for watercourse crossings on waterfront land* (Department of Primary Industries, Office of Water 2012) and *Guidelines for laying pipes and cables in watercourses on waterfront land* (NSW Office of Water 2012).
FLO6	The best practice principles for stormwater and sediment control will be incorporated into the design, construction and operation phases of the project as part of the SWMP.
FLO7	Fencing will be designed to consider flood levels across the site through construction of floodways or relocating the fencing to reduce the likelihood of fence blockage due to loss of vegetation in storm events.
Social	
SOC1	ACEN will adopt a shared value approach in their identification of future community funding opportunities, employment, apprenticeship and training opportunities, and community involvement opportunities.
SOC2	ACEN is exploring the development and implementation of an ACEN Central West Orana solar projects Community Benefit Sharing Program (CBSP) that would see investment in a range of opportunities (including shared value opportunities) aligned with the needs of the community. The CBSP will be informed through a tailored community and stakeholder engagement strategy. In the interim, ACEN will continue to provide community support through the recently established Stubbo Solar and Battery project Social Investment Program.
SOC3	Construction workforce behaviour will be managed through the implementation of a construction workforce management plan (CWMP). The CWMP will seek encourage positive workforce behaviour and participation in community activities.
SOC4	ACEN will appoint a locally based resource to coordinate community and workforce engagement across all ACEN projects in the local area.
SOC5	ACEN will develop a Local Participation Plan and Aboriginal Participation Plan for the project construction phase that commits to procurement, employment and investment in job readiness targets for ACEN and its contracting partners.
SOC6	ACEN will comply with the mandatory contribution obligations for the Birriwa Solar and Battery project, under Section 7.11 and/or Section 7.12 of the EP&A Act in consultation with Mid-Western Regional Council, and/or with any requirements introduced specifically for the CWO REZ in place of such Contributions/Levies. The contributions paid under these requirements will be included in the global amount that constitutes the CBSP.
SOC7	ACEN will work with local employment, apprenticeship, and training agencies to enhance the potential of hiring of local and regional workers thereby minimising the need to hire workers from outside of the local and regional areas. Partnership with local employment and training agencies could specifically benefit youth and Aboriginal and Torres Strait Islander People by providing direct employment opportunities.
SOC8	ACEN will implement a Complaints and Grievances Procedure. The procedure will provide an opportunity for stakeholders to raise complaints, grievances, and provide feedback. The procedure will facilitate the timely response to stakeholder complaints and grievances, and enable the monitoring and reporting of grievances and ACEN response.
SOC9	ACEN will prepare an Accommodation and Employment Strategy (AES) for the project. The AES documents actions that seek to support the following key objectives: • Identify how the facility construction workforce will be accommodated, and where they will be accommodated, and measures to minimise pressure on the existing capacity of short-term accommodation in the local area. • Facilitate an increase in the extent of the geographic area for local hires and workforce accommodation. • Facilitate enhanced local workforce participation.
SOC10	ACEN will develop a decommissioning and rehabilitation plan for the project that will describe how the development footprint would be returned, as far as practicable, to its condition prior to the commencement of construction. The decommissioning and rehabilitation plan will also describe the approach to disposal/recycling of infrastructure.
SOC11	ACEN will continue to explore opportunities with landholders to support co-location of livestock grazing within the development footprint.

ID	Mitigation measures
SOC12	Gate and property access procedures, specific to individual landholder needs and requests, will be developed and implemented.
SOC13	ACEN will develop and implement a construction phase stakeholder engagement plan to guide engagement with the community and ensure timely release of project information.
SOC14	ACEN will develop and implement safety measures within the facility, including security patrols and adequate fencing and worker training, as well as complaints reporting processes for nearby landholders.
SOC15	The accommodation facility will consider the provision of a medical centre and first aid station with an onsite nurse to reduce pressure on local health service providers; however the onsite nurse should not be sourced from the regional workforce due to existing issues with recruitment for rural positions.
Bushfire	
BUS1	A minimum 10-m-wide APZ will be provided around the perimeter of project assets, including solar array and any operational buildings and storage/laydown areas. A minimum 11 m wide APZ setback from grassland will be provided to the east, south and west, and a minimum 20 m wide APZ setback from forest will be provided to the north of the accommodation facility infrastructure area.
BUS2	The APZ will be installed and maintained for the life of the project to the standard of an Inner Protection Area as outlined within Appendix 4 of PBP and the NSW RFS document *Standards for Asset Protection Zones* • APZ will be maintained free from fuel (i.e. comprised of sand, gravel, etc). • Grass will be kept short and to a height <10 cm. • Where possible any tree canopy will be excluded from the APZ. Where tree canopy cannot be excluded then the following will be implemented: – Ensure canopy cover within the APZ is less than 15% of the total canopy area. – Ensure branches do not touch or overhang any infrastructure buildings. – Ensure lower limbs are removed up to a height of 2 m above ground. – Ensure canopies are separated by at least 2 m. – Preference should be given to smooth barked and evergreen trees. • Shrubs are to be maintained as follows: – Large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided. – Shrubs should not be located under trees. – Shrubs should not form more than 10% groundcover. – Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
BUS3	A Bushfire Management Plan will be developed to guide landscape management, monitor and reduce potential fuel loads surrounding the project and APZ areas via ongoing rural activities (e.g. slashing, grazing). The Bushfire Management Plan will also be developed in consultation with the local NSW RFS District Office.
BUS4	All buildings (BESS, substation buildings, management and operational buildings) will provide for minimum ember protection consistent with BAL12.5 construction standards (AS3959-2018). For the accommodation facility, the following BAL apply: • BAL 29 level of construction as per Section 3 and 7 of AS 3959-2018 and Chapter 7.5 PBP to perimeter structures. • BAL 19 and BAL 12.5 level of construction as per Section 3 and 5-6 of AS 3959-2018 to internal structures.
BUS5	50–80 kL steel tank dedicated water storage will be strategically located in consultation with NSW RFS, to allow for permanent emergency water supply and ease of access.
BUS6	The project site access point and private internal roads will provide for safe, reliable, and unobstructed passage by a Cat 1 firefighting vehicle and maintained for the life of the development.
BUS7	The access relevant to property access, perimeter road and non-perimeter road within the accommodation facility comply with Table 5.3b PBP.

ID	Mitigation measures
BUS8	The provision of water, electricity and gas comply with Table 5.3c of PBP.
BUS9	Emergency management: A Bush Fire Emergency Management and Evacuation Plan is prepared by the operator consistent with the NSW RFS publication: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan, and the AS 3745:2010*.
Historic heritage	
HH1	A historic heritage management plan (HHMP) will be prepared for the project in consultation with DPE, prior to the commencement of construction. The HHMP will include an unanticipated finds protocol that will be implemented if previously unrecorded or unanticipated historic objects are encountered during construction.
Air quality	
AQ1	Water truck(s) will be used during construction for dust suppression along internal, unsealed access roads and disturbed areas.
AQ2	Vehicle movements will be minimised, where possible.
AQ3	All vehicles, plant and equipment will be cleaned and washed regularly.
AQ4	All vehicles, plant and equipment will be regularly inspected and maintained to ensure that they are operating efficiently.
AQ5	Regular maintenance of unsealed access roads will be undertaken to minimise wheel-generated dust.
AQ6	Dust suppression requirements during construction will take into consideration weather and the likelihood of extended dry periods which could exacerbate impacts.
Waste	
WAS1	All waste will be managed in accordance with the NSW *Protection of the Environment Operations Act 1997* and NSW *Waste Avoidance and Resource Recovery Act 2001*.
WAS2	All waste produced by the project will be classified, stored and handled in accordance with *the Waste Classification Guidelines – Part 1: Classifying Waste* (EPA 2014).
WAS3	Waste will be managed in accordance with the waste hierarchy, which is listed in order of preference: • reduce waste production • recover resources • dispose of waste appropriately.
WAS4	A detailed waste management plan will be prepared prior to construction.
WAS5	As part of decommissioning, ACEN will attempt to recycle all dismantled and decommissioned infrastructure and equipment, where possible.
WAS6	General waste bins will be provided for disposal of materials that cannot be cost-effectively recycled .

Appendix F

Engagement material and Correspondence

EMM
creating opportunities

F.1 October 2024 – notification of ACENs intent to submit a modification application

Birriwa Solar

Renewable Energy from ACEN

October 2024

ACEN Australia's 600MW Birriwa Solar and Battery project was approved by the Independent Planning Commission in August 2024. Since then, the project team has been finalising elements of the project to prepare for construction, that we anticipate commencing in late 2026 or early 2027.

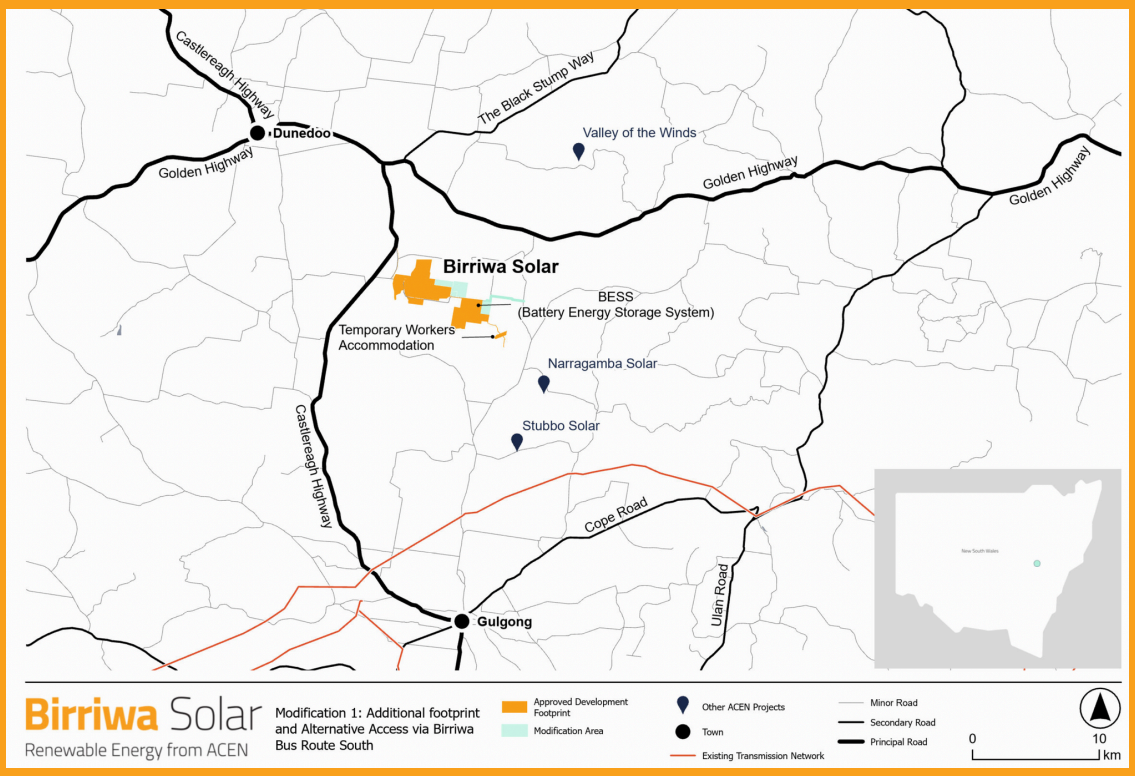
This included considering opportunities to optimise the project's design to support generation of 600MW of renewable energy capacity, while avoiding constraints identified during the planning process.

As a result of these opportunities and the securing of additional land, ACEN Australia is preparing to submit a modification for approval to the Department, around April 2025.

The modification application also allows us to consider an alternative access route for the construction and operation of the accommodation facility and operation of the BESS and EnergyCo's infrastructure associated with the project; this new proposed route will be aligned with roads used by EnergyCo for CWO REZ infrastructure – meaning we can better manage the impact of construction traffic on local roads.

As a renewable energy company that develops, constructs and operates our projects, long term sustainability is core to our approach. We will always seek opportunities during a project lifecycle to consider new technologies and innovations, and new information that help us deliver renewable energy capacity at the best price to market while improving outcomes for our communities and the local environment.

We thank the community and stakeholders for their feedback that has provided us the opportunity to make amendments to the project design, and reflecting this feedback we will continue to refine this body of work for the project. We remain committed to our engagement and consultation activities and will continue to engage with stakeholders and the broader community throughout the modification, construction and operation of the project.



www.birriwasolar.com.au
info@birriwasolar.com.au
1800 290 995
ACEN Australia

F.2 January 2025 – Project update and detail of a community drop-in session

Birriwa Solar

Renewable Energy from ACEN

January 2025

The Birriwa Solar and Battery and Battery Project (BESS) project was approved by the Independent Planning Commission in August 2024.

The approval is a significant milestone for ACEN Australia as we progress development of our 13GW pipeline across Australia.

Since then, the project team has been finalising elements of the project to prepare for construction, that we anticipate commencing in late 2026 or early 2027.

This included considering opportunities to optimise the project's design to support generation of 600MW of renewable energy capacity, while avoiding constraints identified during the planning process.

As a result of these opportunities and the securing of additional land, ACEN Australia is preparing to submit a modification application for approval to the Department of Planning, Housing and Infrastructure, around April 2025.

The modification application also allows us to consider a secondary access route specifically for the construction and operation of the temporary workers accommodation facility and operation of the BESS, as well as EnergyCo's infrastructure associated with the project; this secondary access route will be aligned with roads used by EnergyCo for access to the CWO REZ infrastructure- – meaning we can better manage the impact of construction traffic on local roads.

Learn more about the project modification application and meet the project team

The team will be in our Gulgong office (79b Herbert Street, Gulgong) on

Wednesday, 29 January 2025

from

9:00am- 5:00pm

We welcome your ongoing feedback on the project modification application.

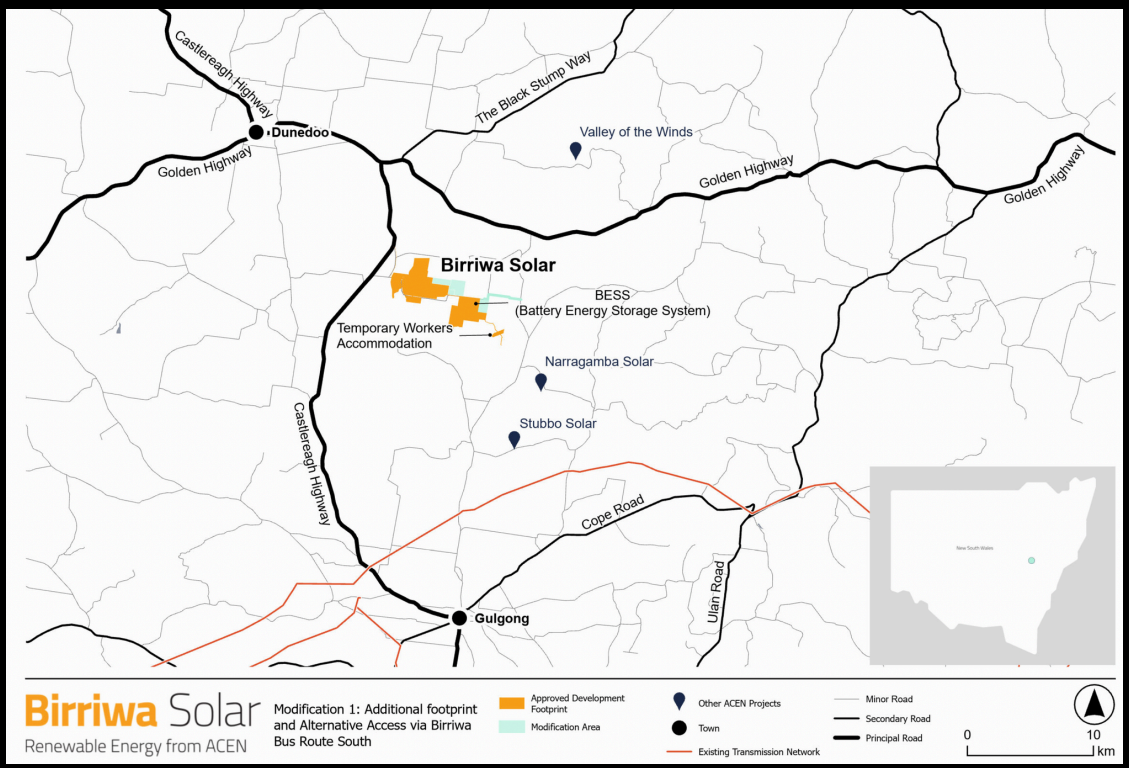
If you are unable to make it on the day our community engagement team are in the office Tuesday- Thursday between 9:00am and 5:00pm, or you can contact us on the below for more information.

www.facebook.com/birriwasolar

www.birriwasolar.com.au

info@birriwasolar.com.au

1800 290 995



We thank the community and stakeholders for their feedback that has provided us the opportunity to make amendments to the project design, and reflecting this feedback we will continue to refine this body of work for the project.

We remain committed to our engagement and consultation activities and will continue to engage with stakeholders and the broader community throughout the modification, construction and operation of the project.

F.3 April 2025 – Project update and detail of a community drop-in session

Birriwa Solar

Renewable Energy from ACEN

PROJECT UPDATE
May 2025

Modification application

The Birriwa Solar and Battery project was approved by the Independent Planning Commission in August 2024.

The approval is a significant milestone for ACEN Australia as we progress development of our 13GW pipeline across Australia.

Since then, the project team has been finalising elements of the project to prepare for construction, that we anticipate commencing in late 2026 or early 2027.

This included considering opportunities to optimise the project's design to support generation of 600MW of renewable energy capacity, and increasing the duration and capacity of the storage component of the project.

As a result of these opportunities and the securing of additional land, ACEN Australia is preparing to submit a modification application for approval to the Department of Planning, Housing and Infrastructure, around May 2025.

Modification application summary

Increase the storage capacity and duration of the BESS from up to approximately 600 MW for 2-hour duration up to approximately 900 MW for a 4-hour duration.

Include an alternative access via the existing Birriwa Bus Route South Road from the Golden Highway via Merotherie Road.

This will enable access to the project for the purpose of constructing and operating the approved temporary accommodation facility, construction, operation and maintenance of the BESS and EnergyCo's infrastructure associated with the project.

Increase the project area and development footprint to additional land to be used for solar generation, BESS, and associated ancillary infrastructure, as needed.

Increase the approved project's accommodation facility capacity from 500 workers to 650 workers, within the approved accommodation footprint

Learn more about the project modification application and meet the project team

The project team will be in our Gulgong office
(79b Herbert Street, Gulgong)
on
Tuesday, 6 May 2025
from
9:00am- 5:00pm

We welcome your ongoing feedback on the project modification application.

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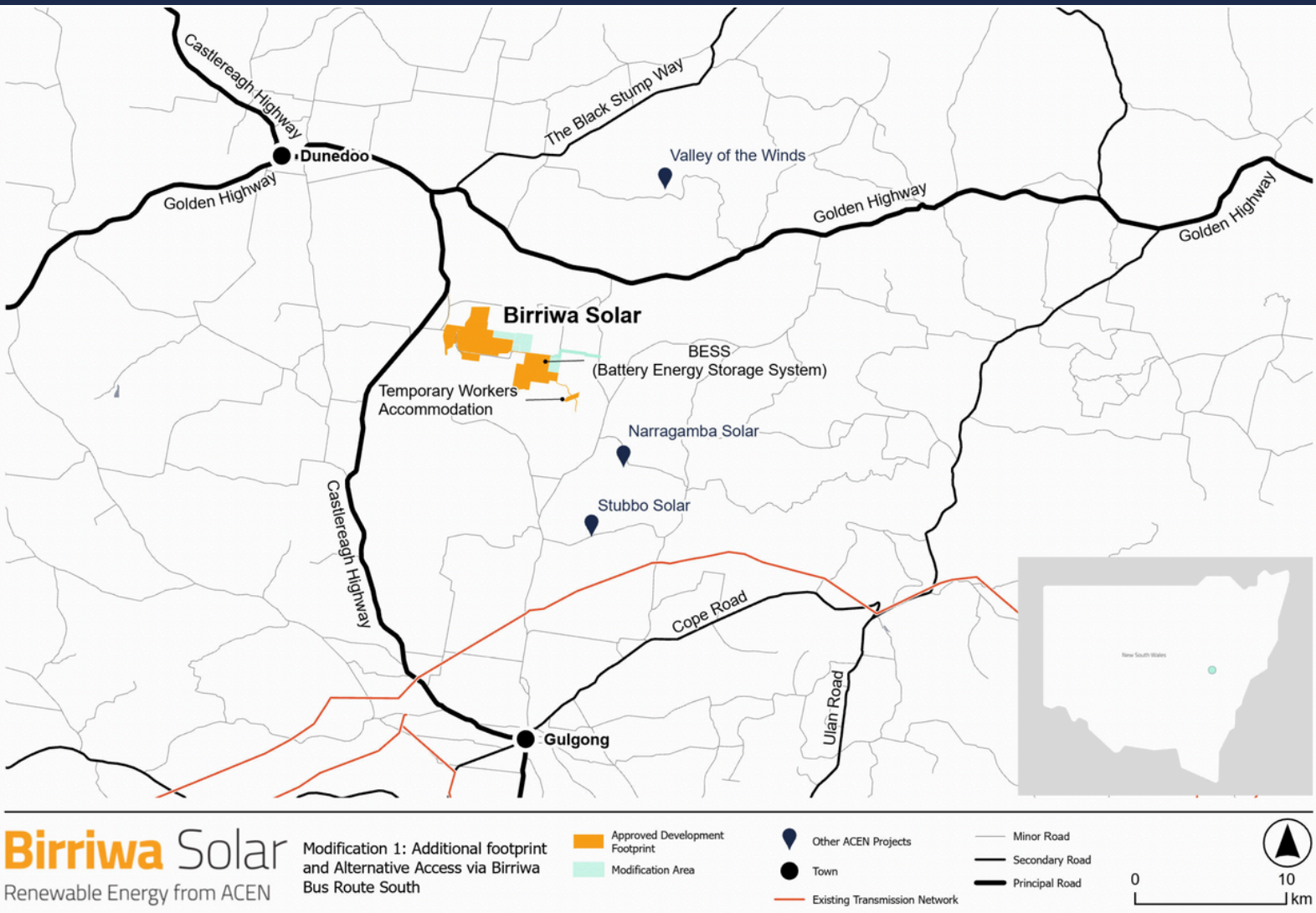
Birriwa Solar

Renewable Energy from ACEN

Modification application

The modification application also allows us to consider a secondary access route specifically for the construction and operation of the temporary workers accommodation facility and operation of the BESS, as well as EnergyCo's infrastructure associated with the project; this secondary access route will be aligned with roads used by EnergyCo for access to the CWO REZ infrastructure- – meaning we can better manage the impact of construction traffic on local roads.



We thank the community and stakeholders for their feedback that has provided us the opportunity to make amendments to the project design, and reflecting this feedback we will continue to refine this body of work for the project.

We remain committed to our engagement and consultation activities and will continue to engage with stakeholders and the broader community throughout the modification, construction and operation of the project.

info@birriwasolar.com.au

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F.4 August 2025 – Notification that the modification application has been submitted

Birriwa Solar

Renewable Energy from ACEN

PROJECT UPDATE
August 2025

Modification application submitted

The Birriwa Solar and Battery project was approved by the Independent Planning Commission in August 2024.

The approval is a significant milestone for ACEN Australia as we progress development of our 13GW pipeline across Australia.

Since then, the project team has been finalising elements of the project to prepare for construction.

This has included considering opportunities to optimise the project's design to support generation of 600MW of renewable energy capacity, and increasing the duration and capacity of the storage component of the project.

As a result of these opportunities and the securing of additional land, ACEN Australia has submitted a modification application for approval to the Department of Planning, Housing and Infrastructure.

Modification application summary

Increase the storage capacity and duration of the BESS from up to approximately 600 MW for 2-hour duration up to approximately 900 MW for a 4-hour duration.

Include an alternative access via the existing Birriwa Bus Route South Road from the Golden Highway via Merotherie Road.

This will enable access to the project for the purpose of constructing and operating the approved temporary accommodation facility, construction, operation and maintenance of the BESS and EnergyCo's infrastructure associated with the project.

Increase the project area and development footprint to additional land to be used for solar generation, BESS, and associated ancillary infrastructure, as needed.

Increase the approved project's accommodation facility capacity from 500 workers to 650 workers, within the approved accommodation footprint

Modification application on exhibtion

You can make a submission by visiting the Major Projects Portal website or following the QR code below.

We welcome your ongoing feedback on the project modification application.

Your submission could assist us to continue refine the project helping to deliver the best possible outcome for the community.

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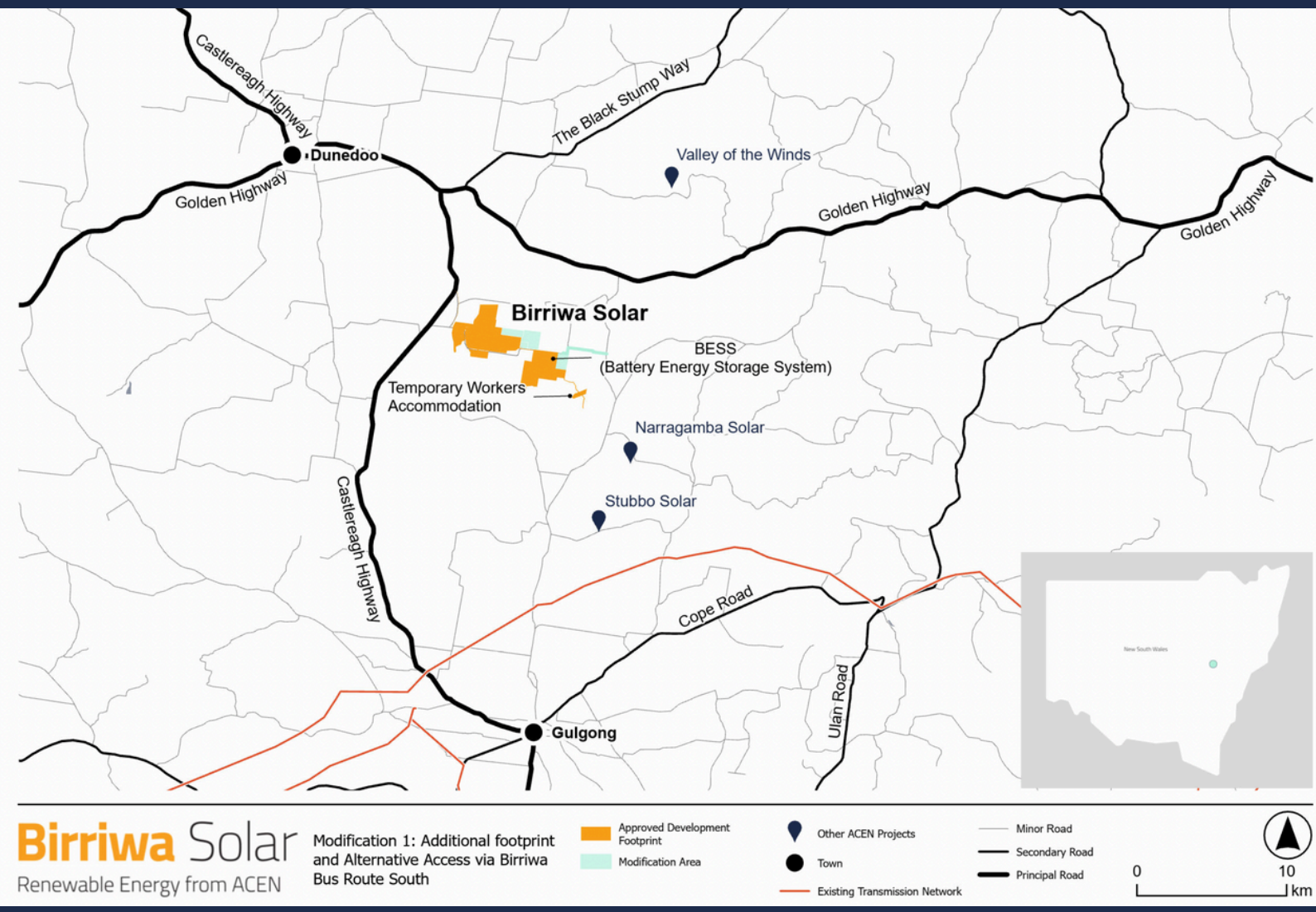
Birriwa Solar

Renewable Energy from ACEN

Modification application

The modification application also allows us to consider a secondary access route specifically for the construction and operation of the temporary workers accommodation facility and operation of the BESS, as well as EnergyCo's infrastructure associated with the project; this secondary access route will be aligned with roads used by EnergyCo for access to the CWO REZ infrastructure- – meaning we can better manage the impact of construction traffic on local roads.



We thank the community and stakeholders for their feedback during our consultation phase of our Modification application.

Your feedback and attendance at our numerous community drop in sessions, provided us the opportunity to make amendments to the project design.

We remain committed to our engagement and consultation activities and will continue to engage with stakeholders and the broader community throughout the modification, construction and operation of the project.

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F.5 Correspondence between ACEN and Warrumbungle Shire Council

9 December 2025

Leeanne Ryan
Director Development Services
Warrumbungle Shire Council
14-22 John Street, PO Box 191
Coonabarabran, NSW 2357

Dear Leeanne,

Subject: SSD-29508870-Mod-1 Birriwa Solar and BESS - Public Roads

Thank you to you and your team for the discussions held over meetings on the 3rd,7th and 28th of November regarding Warrumbungle Shire Council's (WSC) submission during the public exhibition of the proposed modification of the Birriwa Solar and Battery project (the project). We trust this letter addresses Council's concerns about using local roads for the project's construction and operation, especially regarding our long-term commitment to contribute to road and pavement maintenance and repairs.

ACEN Australia (ACEN) proposes using Merotherie road for the project's construction traffic as described in the modification report and will not use the road for construction traffic until the Network Operator completes the upgrades, as part of the Central-West Orana REZ transmission project. The modification report has assessed the project's traffic impacts on the basis that Merotherie Road will be upgraded in accordance with the relevant Austroads standards and to the satisfaction of the relevant authorities. In this context, ACEN's commitments ensure that the geometric design meet the project's traffic requirements in addition to the Network Operator's traffic for the construction of the CWO REZ, while detailed pavement and structural design is determined by the Network Operator and roads authorities.

To address Council's concern about long-term costs and non-visible pavement wear, ACEN understands that Mid-Western Regional Council (MWRC) has agreed in principle to assume responsibility for managing and repairing Merotherie and Barneys Reef Roads, including the sections within WSC. As per current development consent conditions, ACEN will be liable to the cost of any management and repair work caused by the project's traffic. The mechanism for meeting these costs will be through financial contributions agreed with and paid to MWRC directly. The modification does not propose any change to this development consent condition.

ACEN believes this resolves WSC's concerns and looks forward to collaborating with both councils on all project related matters.

Yours sincerely

Scott Thomas
Project Developer

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