PacificHydro

Amendment Report

Daroobalgie Solar Farm

21 November 2022

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Appendices

1. Introduction

1.1 Background

Pacific Hydro Australia Developments Pty Ltd (Pacific Hydro) is applying for development approval for the proposed Daroobalgie Solar Farm Project (the Project), located within the Forbes Shire Council local government area (LGA) in the Central West region of New South Wales (NSW).

An Environmental Impact Statement (EIS) was prepared for the Project in accordance with the requirements of the Environmental Planning and Assessment Regulation 2000. The EIS was publicly exhibited from Monday 21 March 2022 to Tuesday 19 April 2022. A total of 18 submissions were received: two community and 16 agency submissions.

1.2 Purpose of report

This Amendment Report has been prepared in accordance with State Significant Development Guidelines – preparing an amendment report, Appendix D to the State Significant Development Guidelines (NSW DPIE, 2021). It presents amendments made to the development footprint (road upgrades) of the Project since the exhibition of the EIS.

2. Strategic context

Since the submission of the EIS in December 2021, the NSW and Federal Governments have strengthened commitments to renewable energy.

2.1 Commonwealth Government

On the 14th of September 2022, The *Climate Change Act 2022* (Climate Act) and corresponding consequential amendments came into effect. The Climate Act legislates, for the first time, the following targets:

- Reduction of net greenhouse gas (GHG) emissions to 43% below 2005 levels by 2030
- Reduction of net GHG emissions to zero by 2050

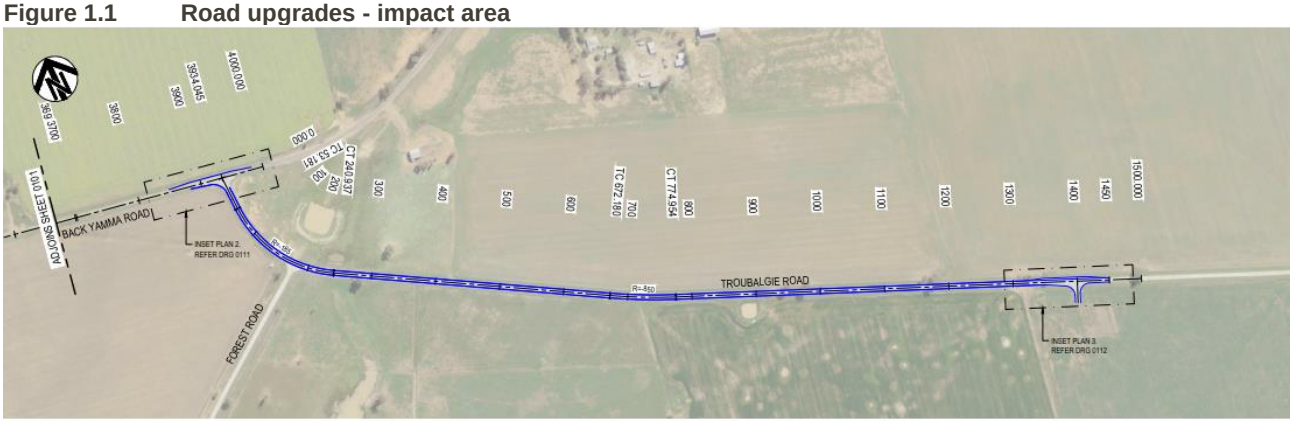
2.2 NSW Government

During 2021 and 2022 the NSW Government has continued to lead Australia with its renewable energy and greenhouse gas emission reduction policy. In June 2022, the NSW Government announced its Transmission Acceleration Facility which will unlock at least $14 billion in private transmission projects in NSW, which will help to deliver the more than 50 large-scale renewable energy projects with a combined capacity of 16 GW currently under development. NSW's Electricity Infrastructure Roadmap, formally unveiled on 4th October 2022, outlined a target of 12 GW of renewable energy by 2030.

3. Description of amendments

The project footprint has been expanded to include the upgrade of a local, rural road (Troubalgie Road) and intersection (Back Yamma/Troubalgie Rd), to allow safe access to the solar farm site. The additional impact area is shown in Figure 1.1.

Figure 1.1 Road upgrades - impact area



Road upgrade works proposed include:

- Upgrade of Back Yamma/Troubalgie Road and Troubalgie Road/solar farm site access intersections: These intersections will be reconstructed to provide a basic right turn (BAR) and basic left turn (BAL) 100 km/h design speed in accordance with Austroads guide to road design part 4A. The swept path analysis shown in Images 3-8 to 3-10 demonstrate that the upgraded intersections will be able to accommodate 26-m, B-double movement and the type of OSOM vehicle required.
- Widening of Troubalgie Road between the junction of Back Yamma Road and the solar farm access: This road will be widened and sealed such that it provides two sealed lands of 3.25m and sealed shoulders 1m wide (overall width of seal will be 8.5m)

A preliminary intersection and road upgrade design is provided in Appendix C. Detailed design of these road upgrade works will be undertaken prior to construction.

Figure 1.2 Back Yamma Rd/Troubalgie Rd intersection proposed widening (B double movement)

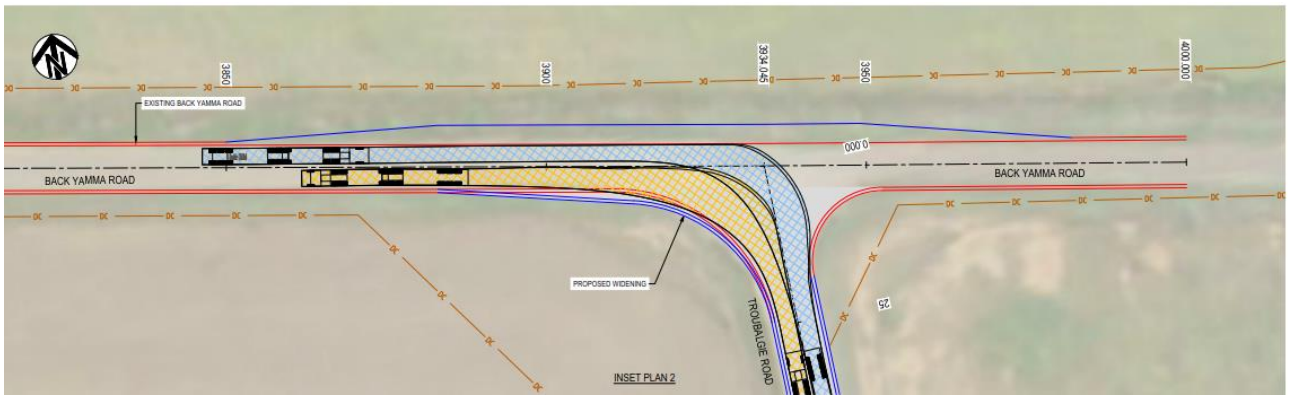


Figure 1.3 Back Yamma Rd/Troubalgie Rd intersection proposed widening (OSOM vehicle movement)

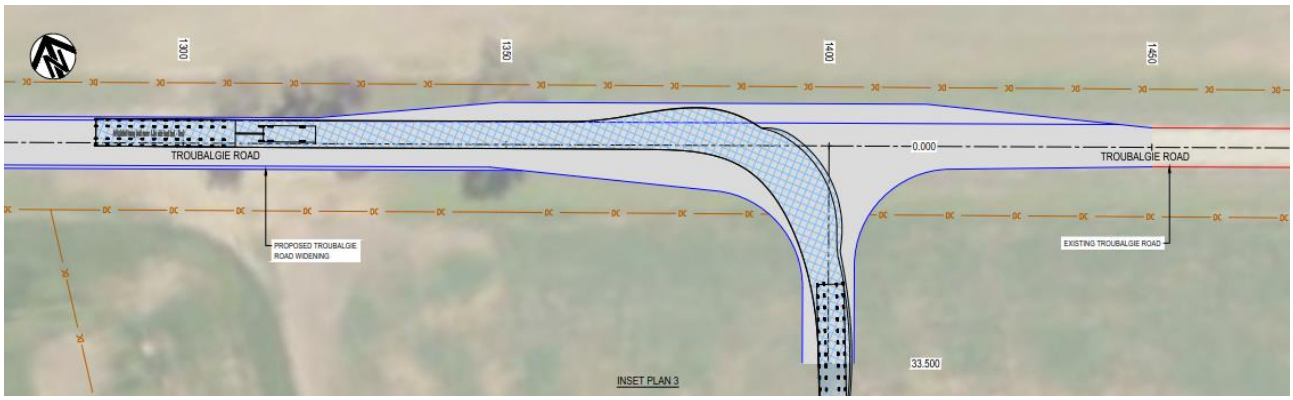
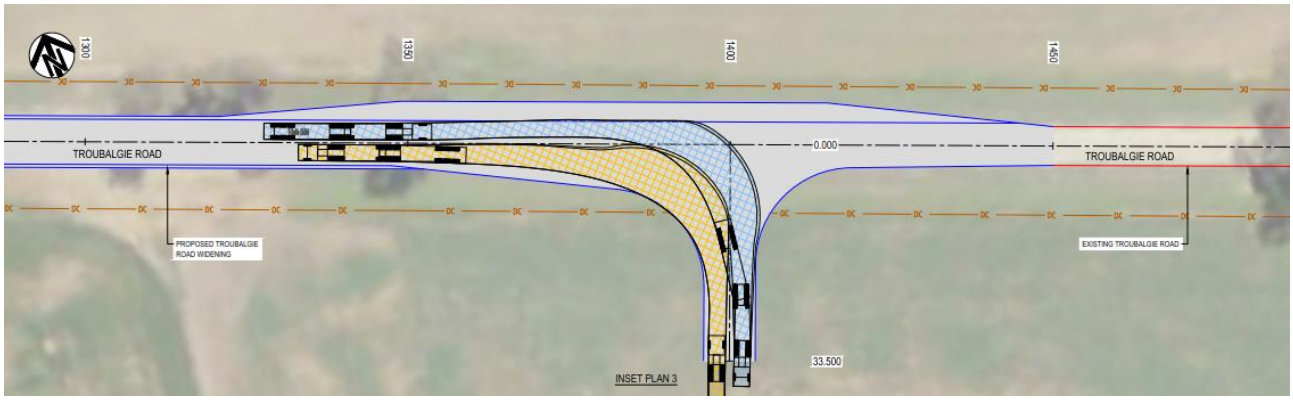


Figure 1.4 Proposed Troubalgie Rd/solar farm site intersection



Key Project details and the amended Project summary table are detailed in Table 3.1.

Table 3.1 Amended project summary table

Project details	Original Project	Amended Project
Name	Daroobalgie Solar Farm	no change
Project description	Renewable energy facility (solar farm) and ancillary infrastructure, battery energy storage system, electricity transmission line and switchyard	Renewable energy facility (solar farm) and ancillary infrastructure, battery energy storage system, electricity transmission line, road upgrades and switchyard
Technology	– Photovoltaic (PV) panels mounted on single-axis-tracking structures – Battery energy storage system (technology most likely lithium-ion) – Single-circuit, 132 kV transmission line	No change
Infrastructure on solar farm site	Access tracks, PV panels, electrical collector network (i.e., underground cabling), power conditioning units, substation, battery energy storage system, operations and maintenance building(s), water tanks, parking and washdown facilities, perimeter security fencing	No change
Solar farm access	Solar farm site access point will be from Troubalgie Road Access will require upgrade of Back Yamma Road/Troubalgie Road intersection and sealing of Troubalgie Road to site access point	No change – further details of the upgrades provided
Electricity transmission line (ETL)	Single-circuit, 132 kV transmission line, approximately 8.5 km long. The ETL easement will be 45 m wide. Towers are likely to be monopole structures 25 to 30 m high	No change
Capacity	~100 MW AC	No change
Electricity generation	~250 GWh/year	No change
GHG savings	197,500 tonnes CO_2-e/year	No change
Lifespan of the Project	~30 years	No change
Capital investment	$188 million	No change
Workforce	Peak construction workforce ~320 people Operational workforce up to 6 people (full time equivalent)	No change
Project location		
Project location	Approximately 11 km northeast of Forbes, Central West region NSW	No change
Solar farm site location and access	Lot 77 in Deposited Plan 750183; Troubalgie Rd, Daroobalgie	No change
Switchyard site location and access	Lot 1408 in Deposited Plan 750157; Daroobalgie Rd, Daroobalgie	No change

Project details	Original Project	Amended Project
ETL location	**Private landholders**: Vol 78 Folio 750183, Vol 2 Folio 220212, Vol 88 Folio 750183, DP 1272667, Vol 12 Folio 1046542, Vol 1340 Folio 750158, Vol 38 Folio 1242538, Vol 14 Folio 750158 **Crown Land**: Lot 1664 DP 750158, Lot 7003 DP 1060435 **Rail Corridor**: Lot 6402 DP 1257397 **Newell Highway**	No change
Road upgrade location	N/A	Back Yamma Rd and Troubalgie Rd – road reserve
Local government area	Forbes Shire Council	No change
Project area	Total area solar farm site: ~308 hectares Development footprint solar farm site: ~268 hectares Electricity transmission line easement: ~ 38 hectares Switchyard site: ~0.5 hectares Total development footprint = ~306.5 hectares	Total area solar farm site: ~308 hectares Development footprint solar farm site: ~268 hectares Electricity transmission line easement: ~ 38 hectares Road upgrades: ~1.91 hectares Switchyard site: ~0.5 hectares Total development footprint = ~308.41 hectares
Applicant details		
Applicant	Pacific Hydro Australia Developments Pty Ltd ABN: 56 161 024 755 Level 13, 700 Collins St Docklands, VIC 3008	No change
Contact	Kate Munro Environment, Planning and Approvals Manager E: kmunro@pacifichydro.com.au	No change
Assessment framework		
Project classification	State significant development	No change
Legislation	Part 4 of *Environmental Planning and Assessment Act 1979*	No change
Responsible authority	Department of Planning, Industry and Environment (DPIE)	Department of Planning and Environment (DPE)

4. Statutory context

This Amendment Report has been prepared in accordance with the State Significant Development Guidelines – preparing an amendment report, Appendix D to the State Significant Development Guidelines (NSW DPIE, 2021).

Changes made to the statutory context of the Project, presented in Chapter 4 of the Daroobalgie Solar Farm EIS, includes consolidation of State environmental planning policies (SEPPs) into thematic SEPPs, which came into effect on 1 March 2022. The changed SEPPs relevant to this Project are:

- SEPP (State and Regional Development) 2011 is now the SEPP (Planning Systems) 2021

- SEPP (Infrastructure) 2007 is now the SEPP (Transport and Infrastructure) 2021
- SEPP No. 33 Hazardous and Offensive Development is now SEPP (Resilience and Hazards) 2001
- SEPP (Mining, Petroleum, Production and Extractive Industries) 2007 is now SEPP (Resources and Energy) 2021
- SEPP (Primary Production and Rural Development) 2019 is now the State Environmental Planning Policy (Primary Production) 2021

The Project remains consistent with the relevant SEPPs and their objectives.

5. Engagement

5.1 Forbes Shire Council

A meeting was held on Wednesday 22nd June 2022 with Forbes Shire Council (FSC), Pacific Hydro and SMEC to discuss the scope of road and intersection upgrades associated with the Project. Concept drawings were developed on this basis and provided to FSC via email on 14th July 2022. Following further advice from FSC on 4th August 2022 the concept drawings were adapted to meet their local road upgrade standard of 2 x 3.25m lanes with a 1 m sealed shoulder. The final design and drawings (Appendix C) were provided to FSC on 12th October 2022. To date, no response has received from FSC.

5.2 Aboriginal parties

The registered Aboriginal parties were notified on 13 September 2022 of the requirement for further assessment for the Project to address the proposed road upgrades. Due to the minor scope and area of works, the archaeological survey of the upgrade area was undertaken with one representative of the Peak Hill Local Aboriginal Land Council, Lyn Bell, on the 15 September 2022. The assessment report was provided to all registered Aboriginal parties for review and comment however no feedback was received.

5.3 BCS

The update of the BDAR to incorporate the road upgrade works has been undertaken in consultation with Erica Baigent from the Biodiversity, Conservation and Science Directorate. The BAM -C cases were submitted via email to Erica Baigent and the North West Mailbox on 17 November 2022 and spatial data on 22 November 2022.

6. Assessment of impacts

6.1 Land use

Pacific Hydro engaged land surveyor, K. I. Lupis, to survey Back Yamma and Troubalgie Roads in the LGA of Forbes. The survey found that the roads lie well within their respective road reserves. Therefore, there is no impact anticipated to private land as a result of the proposed road upgrades.

The survey drawing is provided in Appendix C.

6.2 Biodiversity

A flora and fauna survey of the study area was undertaken on the 9 September 2022 by GHD Pty Ltd. The survey included vegetation integrity plots, threatened flora and fauna habitat assessment, diurnal bird surveys and scattered tree mapping. Survey results are detailed in the Biodiversity Development Assessment Report (BDAR) (GHD, 2022) provided in Appendix C.

6.2.1 Existing environment

The study area overlaps with the existing Troubalgie Road, which is an ~7 m wide unsealed road with table drains on either side. Vegetation that remains in the road reserve is dominated by exotic pasture and herbaceous cropping species, with occasional canopy trees. The species of scattered trees within the study area comprises Eucalyptus macrocarpa and Eucalyptus camaldulensis.

Based on the species recorded, existing regional vegetation mapping and the topography and landscape position of the footprint, two different PCTs were considered likely to have once been present within the footprint of the proposed road upgrade; PCT 76 (Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions) and PCT 11 (River Red Gum - Lignum very tall open forest or woodland wetland on floodplains of semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion).

6.2.2 Potential impacts

A total of four, class three, scattered trees are likely to be impacted by the road upgrades. It is likely that three of these trees were once components of PCT 76, while one tree was part of PCT 11.

No threatened species were observed using these trees during field surveys, and no signs of use by threatened species was noted by site staff, despite targeted searches looking for any evidence of use of habitation.

No confirmed candidate species were considered likely to occur, and no entities at risk of an SAII were identified by the Biodiversity Assessment Method (BAM) calculator, desktop review or results of the field survey.

6.2.3 Management measures

Mitigation and management measures outlined in Table 6.6 of the Daroobalgie Solar Farm EIS will be incorporated into a Construction Environmental Management Plan (CEMP) and implemented during construction to mitigate any impacts.

Offsets required for the removal of trees in the road reserve are as follows:

- PCT 76 Western Grey Box tall grassy woodland on alluvial loam and clay soils in the NSW South Western Slopes and Riverina Bioregions – 3 credits
- PCT 11 River Red Gum – Lignum very tall open forest or woodland wetland on floodplains of semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion) – 1 credit

6.2.4 Residual impacts

The road upgrades are likely to result in the loss of four, mature trees. The works are not anticipated to have any serious or irreversible impacts or significant impacts on threatened flora and fauna species or have a significant impact on any Matters of National Environmental Significance (MNES).

This residual impact is expected to be offset by the purchase or retirement of biodiversity credits or payment to the Biodiversity Conservation Trust Fund (BCTF).

6.3 Cultural Heritage

A cultural heritage survey of the study area was conducted by Umwelt Consulting and a representative from the Peak Hill Local Aboriginal Land Council on 15 September 2022. The survey covered the width of the study area along the road corridor. All mature trees within the study area were inspected for evidence of cultural modification. The Aboriginal Cultural Heritage Assessment (ACHA) for Proposed Road Upgrade (Umwelt, 2022) is provided in Appendix C.

6.3.1 Existing Environment

The study area is located within a rural agricultural setting. Most of the study area comprises a graded, unsealed road, with exotic vegetation along the road corridor and the occasional mature native tree. The impact area has been substantially disturbed from its original condition and is largely cleared of vegetation to facilitate the development of road infrastructure. The inspected areas along the survey corridor were generally noted as being consistently flat with little to no topographic variation, consistent with the distal floodplain environs of the Lachlan River.

Across the study area, ground integrity was generally poor, largely due to the historical construction of Troubalgie Road and the ongoing use of the road. Heavily trafficked areas including the corridor of Troubalgie Road itself were assessed as retaining a low degree of ground integrity. Road verges were generally assessed as having moderate integrity despite having likely experienced some degree of impact from stock trampling, vehicular traffic, and subsequent erosion of ground surfaces.

During a previous cultural heritage survey for the Project in June 2021, an artefact scatter (DSF AS3) was identified near Troubalgie Road. This artefact scatter was assessed within the ACHA to be of low archaeological significance. The artefact scatter site extent encompassed three artefacts identified in two loci, comprising one volcanic core, one volcanic flake and one quartz flake.

6.3.2 Potential impacts

An artefact scatter (DSR AS3) previously identified in the study area was unable to be located during the survey and therefore the road upgrade is likely to impact this scatter.

No Aboriginal cultural heritage objects or sites were identified as part of the survey and there is a low potential for unknown sites to be present within the study area. Any sites would likely be already disturbed due to the significant degree of disturbance across the area from historical land use activities.

6.3.3 Management measures

Mitigation and management measures outlined in section 6.2.6.2 of the Daroobalgie Solar Farm EIS will be implemented during construction to mitigate any impacts. This will include preparation of an Aboriginal Cultural Heritage Management Plan (ACHIMP) and provision for the collection of artefacts associated with artefact scatter DSF AS3 (if it can be located).

6.3.4 Residual impacts

With the implementation of the mitigation measures outline above, the road upgrade works are anticipated to have a low impact on Aboriginal cultural heritage.

7. Evaluation of merits

This Amendment report provides further information about the road upgrades required to support construction of the proposed Daroobalgie Solar Farm site. The additional area of impact is minor and affects a highly disturbed road reserve of low ecological and cultural value.

Impacts associated with the road upgrades are anticipated to be the loss of four, mature trees from the road reserve. The Daroobalgie Solar Farm BDAR has been updated to reflect these additional impacts and offsets calculated accordingly.

The justification of the Project outlined in Chapter 8 of the Daroobalgie Solar Farm EIS remains unchanged by the project footprint amendments outlined in this report. The Project is a suitably located development that can be developed and operated with minimal environmental and social impacts. Any residual impacts are anticipated to be temporary and highly localised and outweighed by the Project's many anticipated benefits.

8. References

NSW Department of Planning, Industry and Environment (DPIE) 2021 State significant development guidelines – preparing an amendment report. July 2021.