



**APPENDIX**

**D**

OSOM Report

# **Birriwa Solar and Battery Project**

## **OSOM assessment**

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Prepared for ACEN Australia Pty Ltd

January 2023

# Birriwa Solar and Battery Project

## OSOM assessment

ACEN Australia Pty Ltd

E210553 RP21

January 2023

Version	Date	Prepared by	Approved by	Comments
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# 1 Introduction

## 1.1 Introduction

EMM Consulting Pty Limited (EMM) has been engaged by ACEN Australia Pty Ltd (ACEN) to prepare a desktop Over Size Over Mass (OSOM) vehicle route assessment for the transport of transformers to the solar farm site in Birriwa from the Port of Newcastle. A total of three transformers will be transported. The OSOM convoy length for the transport of each transformer will be 71 metres (m).

The solar farm site is located in the localities of Birriwa and Merotherie, approximately 15 kilometres (km) south-west of the township of Dunedoo, in the Central West of New South Wales (NSW). No site inspection of the route has been undertaken as part of this OSOM assessment to confirm the clearances to any affected roadside obstructions, therefore the report recommendations are based on satellite imagery information only.

There is a possibility of interruptions to the OSOM routes due to the projects that are occurring within the road network along the OSOM/heavy vehicle haulage routes particularly TfNSW Golden Highway – Mudies Creek and Whittingham project and TfNSW New England Highway – Belford to Golden Highway project.

## 1.2 Limitations of this report

The primary purpose of this desktop OSOM report is to highlight the key traffic safety, efficiency and constraints along the haulage route to facilitate the OSOM movements to/from the site and its likely recommended mitigation measures. However, this report does not undertake the field test which may identify more constraints. This may require further investigation and analysis.

The traffic volumes, haulage route and vehicle size are provided/confirmed by ACEN for this analysis. Therefore, any change of these parameters may initiate changes to the recommended mitigation measures. As such, upon approval of this project and appointment of the OSOM transportation contactor, a detailed field assessment will be necessary. All OSOM movement approval must be obtained from National Heavy Vehicle Regulator (NHVR) by lodging an application ([NHVR](https://www.nhvr.gov.au/road-access/access-management/applications/oversize-overmass-permit))<sup>1</sup>. NHVR will consult with the affected road authorities eg TfNSW, councils etc as part of the application approval process.

<sup>1</sup> <https://www.nhvr.gov.au/road-access/access-management/applications/oversize-overmass-permit>

## 2 OSOM vehicle details

The transport configuration includes three prime movers, a dolly, a 13 x 8 m platform trailer and followed by another prime mover. The overall dimensions of the OSOM vehicle convoy is expected to be up to 71 m long, 4.880 m wide and 5.480 m high. The transformer is expected to weigh up to 150 tonnes (t) with the Gross Combination Mass (GCM) up to 240 t.

Pilot vehicles will be required all along the route to control and manage following traffic and traffic travelling in the oncoming direction.

The expected OSOM vehicle configuration is shown in Figure 2.1. The OSOM vehicle configuration used to conduct the swept path assessment is shown in Figure 2.2

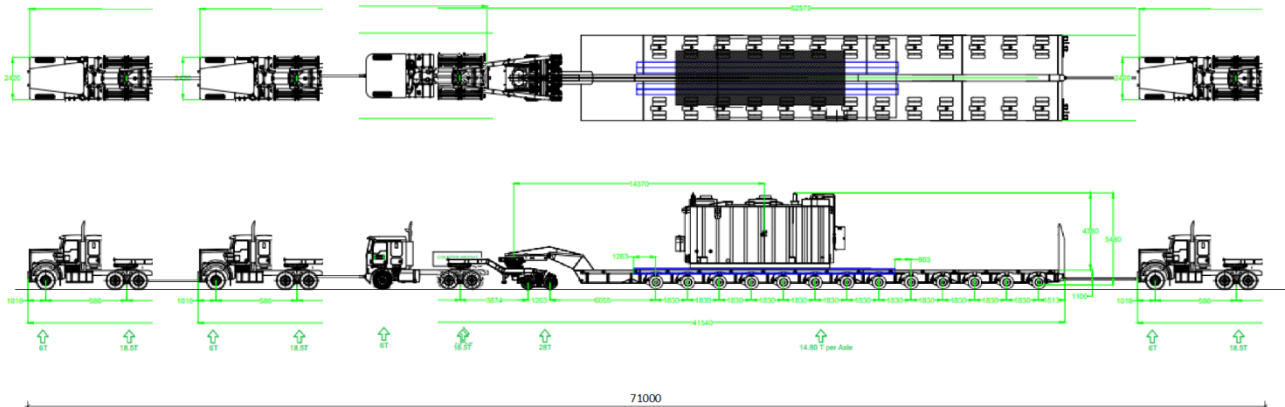


Figure 2.1 Expected OSOM vehicle configuration

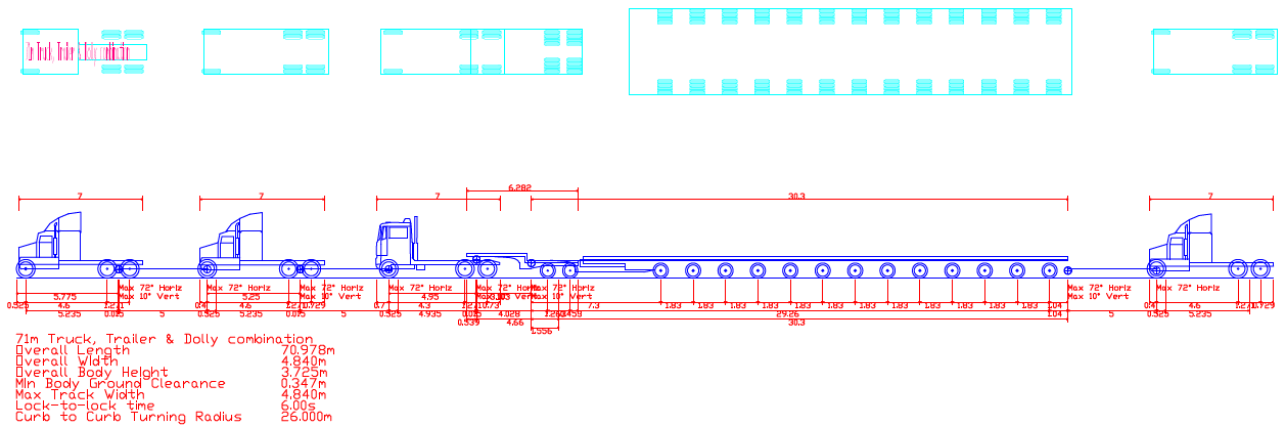


Figure 2.2 OSOM vehicle configuration for swept path assessment

### 3 OSOM route

As per the information received from ACEN, the possible origins of the OSOM vehicle for transformer delivery will be either from Port of Newcastle or Port of Brisbane. The OSOM route selected for this assessment originates from Port of Newcastle.

The NSW [OSOM website<sup>2</sup>](https://roads-waterways.transport.nsw.gov.au/business-industry/heavy-vehicles/maps/nsw-load-carrying-network/map/index.html) presents the approved routes for OSOM vehicles up to 30 m long, 5 m wide and 5 m high.

The route under consideration is currently approved for vehicles up to 4.6 m high. Since the proposed OSOM vehicle is 5.48 m high with the transformer, the existing height clearances along the route need to be assessed at all critical locations as part of a detailed Transport Management Plan.

The assessed OSOM route from Port of Newcastle to the project site at Birriwa is shown in Figure 3.1.

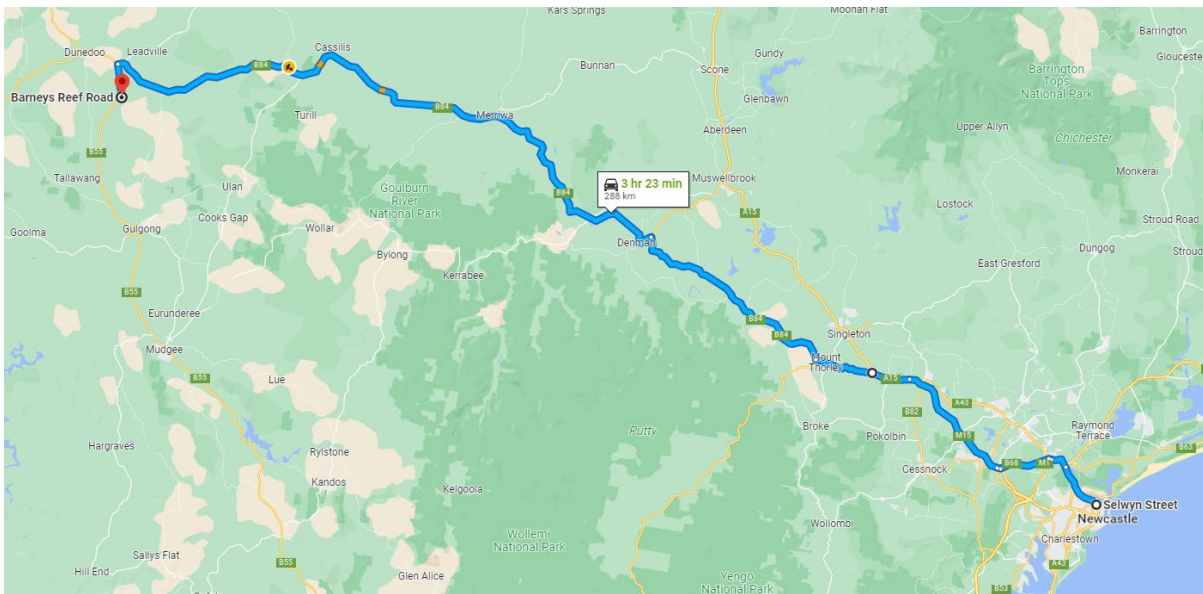


Figure 3.1 OSOM Route from Port of Newcastle to Birriwa

The 288 km route is comprised of the following roads:

Port of Newcastle Mayfield - Berth 4 to Selwyn Street, George Street, Industrial Drive, Pacific Highway, New England Highway, John Renshaw Drive, Hunter Expressway (M15), New England Highway, Golden Highway, Castlereagh Highway and Barneys Reef Road.

The Swept Path assessment has been undertaken for all critical turning movements along the route to ensure manoeuvrability for the 4.8 m wide vehicle. The Swept Path assessment showing all critical turning movements is presented in Appendix A and the constraints at each location are listed in Table 3.1.

<sup>2</sup> <https://roads-waterways.transport.nsw.gov.au/business-industry/heavy-vehicles/maps/nsw-load-carrying-network/map/index.html>

**Table 3.1 Key locations on OSOM route**

Chainage	Suburb	Location	Drawing reference	Turning occurs correct side of the road? (Yes/No)	Road infrastructure affected?	Escort vehicles required?
100 m	Mayfield East	Selwyn Street/George Street/Industrial Drive	EMM-001	Yes	Yes, refuge island may need to be temporarily removed.	Yes, escort vehicles required along Selwyn Street, George Street and Industrial Drive
4.3 km	Mayfield West	Industrial Drive/Pacific Highway	EMM-002	Yes	No	Yes, escort vehicles required along Industrial Drive and Pacific Highway
28 km	Buchanan	John Renshaw Drive/Hunter Expressway	EMM-003	Yes	No	Yes, escort vehicles required along Hunter Expressway and John Renshaw Drive
66 km	Whittingham	New England Highway/Mitchell Line of Road	EMM-004	No	No	Yes, escort vehicles required along New England Highway west of Belford and along Mitchell Line of Road
76 km	Mount Thorley	Putty Road/Mitchell Line of Road	EMM-005	Yes	No	Yes, escort vehicles required along the entire length of Mitchell Line of Road and Putty Road
80 km	Mount Thorley	Putty Road/Mount Thorley Road	EMM-006	No	Yes	Yes, escort vehicles required along the entire length of Putty Road and Mount Thorley Road/Golden Highway
106 km	Jerrys Plains	Lonsdale Street/Pagan Street	EMM-007	No	No	Yes, escort vehicles required along the entire length of Lonsdale Street
106 km	Jerrys Plains	Lonsdale Street/Pringle Street	EMM-008	No	No	Yes, escort vehicles required along the entire length of Lonsdale Street



**Table 3.1 Key locations on OSOM route**

Chainage	Suburb	Location	Drawing reference	Turning occurs correct side of the road? (Yes/No)	Road infrastructure affected?	Escort vehicles required?
131 km	Denman	Denman Road/Jerrys Plains Road	EMM-009	No	No	Yes, escort vehicles required along the entire length of Jerrys Plains Road and Denman Road
134 km	Denman	Palace Street/Crinoline Street	EMM-010	No	No	Yes, escort vehicles required along the entire length of Palace Street
185 km	Merriwa	Bettington Street/Vennacher Street	EMM-011	No	Yes, refuge island may need to be temporarily removed.	Yes, escort vehicles required along the entire length of Bettington Street
185 km	Merriwa	Bettington Street/Dutton Street	EMM-012	No	No	Yes, escort vehicles required along the entire length of Bettington Street
281 km	Dunedoo	Golden Highway/Castlereagh Highway	EMM-013	No	No	Yes, escort vehicles required along Golden Highway and Castlereagh Highway
288 km	Dunedoo	Castlereagh Highway/Barneys Reef Road	EMM-014	No	Yes, some roadside vegetation will need to be trimmed	Yes, escort vehicles required along Castlereagh Highway and Barneys Reef Road

Route summary:

- **General longitudinal slope:** suitable for OSOM vehicle access, generally flat;
- **Bends:** no sharp bends, all bends are suitable for OSOM vehicle access
- **Overhead Structures:** there are several overhead structures which will need to be checked for height clearance during field observations as part of the detailed Transport Management Plan
- The entire route including all key locations presented in Table 3.1 will require escort vehicles starting from Selwyn Street, George Street and Industrial Drive intersection at Mayfield near the Port of Newcastle;
- There are two affected intersections that require replacement of road infrastructure: the refuge islands at the Selwyn Street/George Street/Industrial Drive intersection at Mayfield and at Bettington

Street/Vennacher Street, Merriwa may need to be removed as the OSOM vehicle would be require to travel over it.

- No bridges with significant load limits are identified along the route.

## 4 Summary and conclusion

Overall, as shown by the swept paths assessment in Appendix A, the identified route is generally suitable for the identified OSOM vehicle.

As this is a desktop assessment based on satellite imagery, a further detailed field survey will be required to accurately identify all existing height restrictions and any road infrastructure that requires relocation along the route to facilitate the OSOM vehicle movement from the Port of Newcastle, to/ from the site.

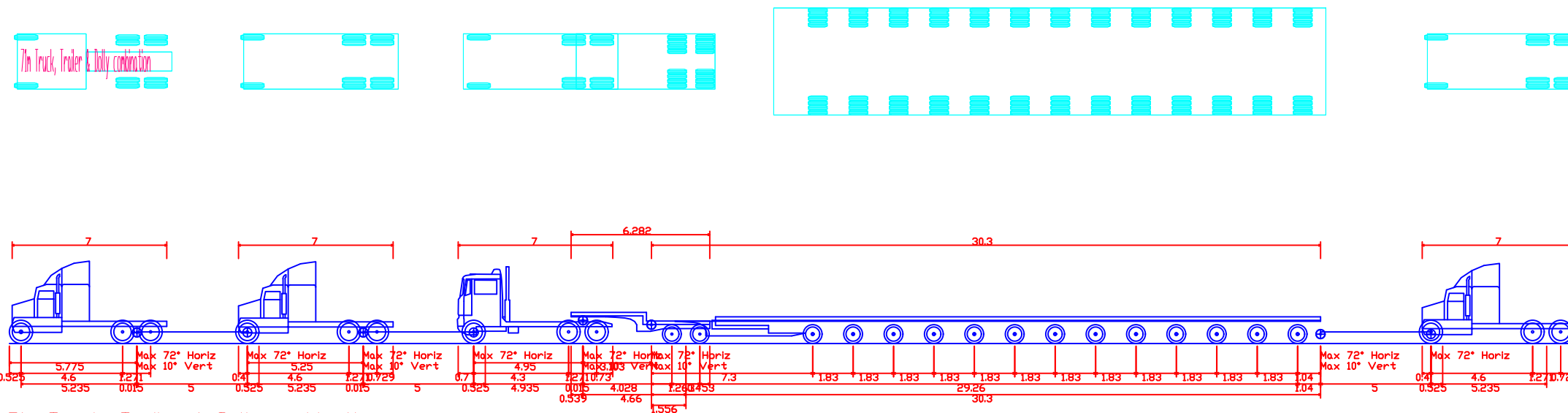
Necessary application will be required to be lodged to NHVR by the transport operator. Due to the proposed width of the vehicle platform trailer (4.88 m), police escort may be required, subject to NHVR determination.

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# Appendix A

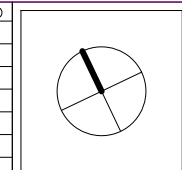
## Swept path assessment

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71m Truck, Trailer & Dolly combination  
 Overall Length 70.978m  
 Overall Width 4.840m  
 Overall Body Height 3.725m  
 Min Body Ground Clearance 0.347m  
 Max Track Width 4.840m  
 Lock-to-lock time 6.00s  
 Curb to Curb Turning Radius 26.000m

REV	DATE	COMMENT	DRAWN	REVIEWED	REV	DATE	COMMENT	DRAWN	REVIEWED
01	19/01/2022	FOR INFORMATION	B.H	T.B					



PROJECT:  
 J210553 - Birriwa Solar and Battery  
 Project - OSOM Assessment

DRAWING TITLE:  
 71m Truck, Trailer & Dolly combination  
 for desktop OSOM assessment

CLIENT: ACEN  
 DRG. #: EMM  
 PROJECT #: J210553  
 SCALE: NTS

**REV: 01**

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