

Reference: 23.560r01v02

10 November 2023

The Committee, Oberon Against Wind Towers

Attention: Chris Muldoon

Re: Paling Yards Wind Farm (SSD-29064077)
TRAFFIX Peer Review

Dear Chris,

➤ Preamble

We refer to the subject State Significant Development Application (SSDA) concerning the Paling yards Wind Farm project involving the installation, operation and maintenance of a wind farm development that will comprise of up to 47 Wind Turbine Generators and associated ancillary infrastructure and facilities within the Central Tablelands of NSW, approximately 60km south of Oberon and 75km north of Goulburn.

We advise that we have been engaged by The Committee, Oberon Against Wind Towers to review the SSDA from a traffic engineering and transport planning perspective. In this regard, it is emphasised that we have agreed to undertake such a review on the basis that we do so in the context of an independent peer review, with no expectations that we could advance the concerns of our client.

Accordingly, we have reviewed the following documents published on the NSW Planning Portal:

- Appendix L - Traffic Impact Assessment_V3.1, prepared by SLR Consulting Australia Pty Ltd, dated 29 May 2023; and
- Appendix AA – Route Survey_REV02, prepared by Rex J Andrews, dated 12/09/2022.

Additionally, we have also reviewed the Oberon & Surrounding Villages Community Newsletter dated November 2023.

The traffic engineering and transport planning issues that arise from the application are discussed separately below and represent our submission to State Government on behalf of The Committee, Oberon Against Wind Towers.

➤ Site Context

It is understood the SSDA is located within the jurisdiction of Oberon Local Government Area (LGA), and is zoned as "Rural", under the RU1: Primary production in the provisions of the Oberon Local Environmental Plan 2013 (LEP). The adjacent and surrounding land are comprised of RU1: Primary production and C1: National Parks and Nature Reserves lots.

The SSDA comprises multiple lots located within the Central Tablelands of NSW, approximately 60km south of Oberon and 75km north of Goulburn.

➤ Haulage

Based on our understanding of the project and available information, we concur with the TIA that the construction phase of the project is most critical from a road network capacity and safety perspective. As such, a comprehensive assessment of the construction traffic impacts of the project is pertinent to ensure construction traffic can be satisfactorily accommodated along the proposed haulage route/s.

Section 2.4.1 establishes that many of the wind turbine components will need to be transported to site using oversize and/or overmass (OSOM) vehicles. The provided component dimensions and design vehicle nominated in Figure 4 indicates that many of the OSOM vehicle movements are classified as "High Risk" under TfNSW's OSOM criteria. The TIA also undertook a preliminary assessment of the minimum pilot and TfNSW authorised escort vehicle driver requirement noting Code F will be triggered by the transportation of blade roots, with other components triggering Code D or E.

It is noted the TIA defers the responsibility of assessing the suitability of the proposed haulage route for the OSOM vehicles to Rex J Andrews (RJA). In this regard, the TIA refers to RJA undertaking three (3) route options from Port of Newcastle to the subject site and identifies the route via Mudgee is the most favourable one, whilst noting the Blue Mountains route will not be used for OSOM materials. The following is noted in this regard:

- It is unclear what the Blue Mountains route option is referring to as its not mentioned in RJA documentations.
- Only two (2) route options are assessed by RJA provided in Appendix E of the TIA, instead of three (3) route option nominated by the TIA.
- RJA assessed two (2) transport route options recommending blades and loads up to 5.1 metres in loaded height are to use Route 1 and loads over 5.1 metres and up to 5.9 metres in height are to use route 2 – it is unclear as to why the TIA only adopted a single route when RJA's report suggests both routes are required.
- RJA has identified multiple pinch points and modifications to the road network required along both haulage routes. RJA's report notes that the nominated route study is provided on the basis of information only purposes and is to be used strictly as a guide only. Accordingly, these pinch points and required modifications will need to be addressed in a comprehensive Preliminary Construction Traffic Management Plan (CTMP) including concept design drawings to demonstrate geometric changes and impacts of all effected intersection / road network can be satisfactorily mitigated.

Section 2.4.2, Paragraph 8 of the TIA acknowledges construction traffic will impact over 654 kilometres stretch of road comprising:

- Selwyn Street;
- Industrial Drive;
- Maitland Road;
- New England Highway;
- Golden Highway;
- Denman Road;
- Wybong Road;
- Castlereagh Highway;
- Great Western Highway;
- Middlebourne Street;
- O'Connell Road; and
- Abercombie Road.

The TIA further notes that the return trip will require approximately three days per wind turbine root blade, specifying the OSOM vehicle will need to be stored overnight at Kelso. It is noted in this regard the TIA needs to clarify:

- Where will the OSOM vehicles will be stored overnight at Kelso in order to adequately assess relevant traffic/parking impacts.
- The TIA should clarify the transport schedule for the transportation of other wind turbine components as well as construction activities that will occur in parallel to assess the cumulative traffic/parking impacts.

➤ Existing Road Network Conditions

Contrary to the nominated haulage route of 654 kilometres, Section 3.1 of the submitted Traffic Impact Assessment (TIA) only assessed the last stretch of the route being Abercrombie Road comprising just 9% of the entire 654 kilometres route.

Furthermore, traffic tube counts were only collected at two (2) locations being Access Location 1 and Access Location 5.

Accordingly, the TIA should be updated to address the following:

- An adequate assessment of all roads along the entire haulage route/s should be provided within the TIA including its classification, function, speed, geometry and any other relevant characteristics/restrictions.
- Additional tube counts should be undertaken to cover at least the other three (3) proposed intersections to verify speed and volume of traffic at those locations.
- Additional intersection traffic counts is recommended at locations where substantial road works are required to accommodate the "High Risk" OSOM vehicle movements.

➤ National Heavy Vehicle Regulator (NHVR) Approved Routes

The TIA makes a tabled reference of various roads and corresponding NHVR allowance, it is unclear how this relates to the nominated haulage route/s.

On the basis that "High Risk" OSOM vehicle movements are critical aspects of the project, a clear diagram should be provided to demonstrate how the proposed haulage route/s satisfies existing NHVR allowance or what mitigation measures will be provided for the OSOM vehicles along these route/s to ensure satisfactory operation and safety of the road network during construction.

➤ Railway Crossings

The TIA identified a total of four (4) railway crossings along the proposed haulage route/s but does not provide further information as to how an approx. 72 metres long "High Risk" OSOM vehicle will be able to pass through these locations safely.

➤ Crash History

The TIA undertook a review of the five-year crash data between 2016 to 2020. The TIA acknowledges the majority of crashes occurred due to loss of vehicle control at bends, and addresses this by recommending a drivers' code of conduct.

For the purposes of a SSDA involving "High Risk" OSOM vehicle movements, the crash history assessment should be expanded further to:

- Consider the safety implications of "High Risk" OSOM vehicles on existing road users and provide mitigation measures where required.
- Road Safety Audits (RSA) should be undertaken for all crash locations where "High Risk" OSOM vehicles movements are expected, critical intersections as well as all concept designs prepared to accommodate the "High Risk" OSOM vehicles at existing intersections in order to identify any hazards/risks introduced by the additional construction vehicles which is expected to occur over a minimum 22 month period, including many "High Risk" OSOM vehicle movements.
- A mitigation report should also be prepared to provide measures to minimise these hazards/risks for other road users in response to the RSAs.

➤ Traffic Impacts

Trip Generation

It is noted that the trip generation estimate for the construction works have been provided by various sources, including GPG, SLR, RJB, TransGrid etc. On the basis that the construction/operation assumptions have profound implications on the construction traffic and safety impacts, it is important that a verification statement is provided stating the information and assumptions provided are true, complete, and correct to the best of available knowledge.

It is generally agreed that the methodology adopted in the TIA for estimating the traffic generation during construction is appropriate, and provided that the information and assumptions are true, complete, and correct, we can agree that the SSDA will generate a total of 40,547 vehicle trips across a construction period of 475 days corresponding to 86 movements a day (43 inbound, 43 outbound).

However, the TIA should provide further clarification on the composition of those 86 vehicle movements separated into light vehicles, heavy vehicles and OSOM vehicles.

Traffic Modelling

No traffic modelling has been undertaken as part of the TIA to assess the potential traffic impacts of the project on road network function, including existing/proposed intersection performance.

➤ Internal Design Aspects and Off-Street Parking Provision

Off-Street Car Parking

Detailed plans have not been provided to show the layout of the internal parking facilities in accordance with AS 2890.1 (2004) requirements.

The TIA has not provided any assessment in relation to the adequacy of carparking throughout the site, and how maintenance/staff vehicles will be able to park in proximity to each wind turbine.

Accessible Parking

Detailed plans have not been provided to consider or show the layout of the accessible parking facilities in accordance with AS 2890.6 (2022) requirements.

Servicing and Loading

Detailed plans have not been provided to show the layout of the internal loading/servicing facilities in accordance with AS 2890.2 (2018) requirements.

➤ Swept Path Analysis

The following matters are noted in relation to the swept path analysis provided in the TIA:

- It is unclear which design vehicle has been adopted in all swept path analysis.
- The swept path analysis do not include any manoeuvring clearances.
- The drawings do not show property boundaries.
- The swept path analysis does not specifically address overhang into road verge and in some instances, into other properties.
- There are instances where the "High Risk" OSOM vehicle will need to travel on the incorrect side of the road, further details needs to be provided as to how this will be safely managed.
- There are instances where the "High Risk" OSOM vehicle will mount the footpath, further details needs to be provided as to how this will be safely managed.
- There are substantial road works required involving removal of existing medians, tress and landscape etc. that have not been discussed in detail.
- No details are provided as to how "High Risk" OSOM vehicle will be managed when travelling through town centres.
- Swept path analysis need to include all intersections and bends, for all nominated haulage route/s.

➤ Other Matters

Road Closure

TRAFFIX have been forward a copy of the Oberon & Surrounding Village Community Newsletter, November 2023 which states that:

*"Each turbine will have 3 blades which will be delivered individually via the O'Connell and Abercrombie roads. Expect 2 blades to be delivered each week for 70 weeks. **Roads will be closed to other traffic while the blades are in transit.** Blades are over 65M in length."*

It is noted in this regard the TIA omits any required road closures and associated traffic impacts on local traffic, including impacts of detour traffic.

ANZAC Memorial at O'Connell

TRAFFIX have been advised that the proposed haulage route will impact on a 100-year old ANZAC Memorial at O'Connell made up of 120 Desert Ash trees as can be seen in the photo below:



There are no assessment provided as to how these trees will be protected during transportation of the large wind turbine components.

➤ Conclusion

Based on reasons discussed throughout this peer review, it is considered the current state of the TIA submitted as part of SSDA has not adequately assess the traffic and parking impacts arising from the proposed development.

Accordingly, we recommend the consent authority to consider the following matters when assessing the SSDA and request additional information where required:

- The TIA has not adequately addressed SEARs noting the following:
 - The TIA has not provided a breakdown of trip generation estimate in terms of the number of light vehicles, heavy vehicles and OSOM vehicles that are expected to be generated by the proposed development during construction, operation and decommissioning.
 - The TIA has not undertaken traffic modelling to assess potential traffic impacts of the project on road network function including intersection performance, site access arrangements and haulage route/s.
 - The TIA has not assessed impacts of the SSDA to existing school children/parents/staff, school bus routes and school zones during construction, operation and decommissioning.
 - The TIA has not addressed road safety issues, including how approx. 70m long “High Risk” OSOM vehicles will be able to safely cross the four (4) railway crossings.
 - The TIA has not provided any evidence of further consultation with Council to ensure cumulative impacts from any other committed developments along the haulage route/s have been adequately considered.
 - The TIA defers the responsibility of assessing the suitability of the proposed haulage route for the OSOM vehicles to RJA, however, neither report address details of measures to mitigate and/or manage potential impacts including concept plans along with a schedule of all required road upgrades to accommodate the “High Risk” OSOM vehicle movements along the entire haulage route/s, as well as road maintenance contributions, and any other traffic control measures, developed in consultation with the relevant road and/or rail authority, local communities/businesses/landowners as well as all other stakeholders.
- The TIA has not adequately addressed TfNSW's requirements contained in their letter dated 24 February 2022 (Ref: WST14/00033/04 | SF2014/02416) noting the following:
 - 3D swept path analysis has not been undertaken to assess pinch points within the network vertically, horizontally and laterally and the potential civil works required to accommodate the OSOM vehicles as requested by TfNSW.
 - A detailed logistic assessment has not been undertaken to highlight each at-risk road structures that the haulage route/s crosses including bridges, traffic signals, signage, major culverts, and minor culverts that may not meet the desirable cover to cater for the proposed axle loads.
 - The design vehicle templates used within each swept path analysis should be clarified.
 - The TIA only identifies the longest OSOM vehicle, but is silent on other OSOM vehicle that may be wider or carry a higher load that also needs to be considered.
 - The TIA has not provided any detailed plans identifying of any:
 - Project-related infrastructure within and outside of the project boundary.
 - Transmission line infrastructure, or any other project-related structures, within a classified road reserve.
 - Permanent or temporary connection/access to classified roads.
 - The TIA does not address projected cumulative traffic at commencement of operation, and a 10-year horizon post commencement.
 - The TIA does not address traffic characteristics.
 - The TIA has not undertaken a road safety assessment of key haulage route/s.
 - The TIA does not provide a quantitative assessment of the project traffic impacts during construction, operation and decommissioning.

- There are no discussions within the TIA relating to measures employed to ensure traffic efficiency and road safety during construction, operation and decommissioning of the project.
 - The TIA does not discuss need for improvements to the road network to cater for and mitigate the impacts of project related traffic – i.e. “High Risk” OSOM vehicle movements through the existing road network.
 - The TIA does not provide any 2D concept design for any proposed road widening, intersection treatments etc identified as an outcome of the assessment of the Austroads warrants.
 - The TIA has not considered local climate conditions.
 - Detailed plans have not been provided to show the layout of the internal road network, parking facilities and infrastructure.
 - The TIA only identifies the location of railway crossings but has not considered any mitigation measures required for “High Risk” OSOM vehicles to travel through these locations safely.
 - The TIA has not assessed impacts on public transport including school bus routes with consideration of impacts on other sustainable transport modes including walking and cycling.
 - Traffic Management Plans (TMPs) has not been developed – on the basis that construction traffic impacts have been found to be critical, a detailed preliminary TMP developed in consultation with TfNSW, Council, local community/businesses/police etc. for peak construction periods should be submitted as part of the EIS.
- The TIA needs to provide detailed mitigation measures, including concept plans, traffic modelling, RSA and any other relevant documentation required to support modifications to the existing road network along the proposed haulage route/s to accommodate the “High Risk” OSOM vehicle movements.
 - The TIA omits any required road closures and associated traffic impacts on local traffic, including impacts of detour traffic.
 - There are no assessment provided as to how the 120 Desert Ash trees along the 100-year old ANZAC Memorial at O’Connell will be protected during transportation of the large wind turbine components.

We trust the above is of assistance and request that you contact the undersigned should you have any queries or require any further information.

Yours faithfully,

Traffix



Thomas Yang
Executive Engineer