Memorandum

To:	Leonard Slabbert	**At:**	Tract Consultants
From:	Jeffrey Baczynski	**At:**	SLR Consulting Australia Pty Ltd
Date:	15 September 2021	**Ref:**	B3F6DC0C.docx
Subject:	Paling Yards Wind Farm Traffic Engineering Input to Scoping Report		

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been engaged by Tract Consultants (Tract) to provide traffic engineering input to the planning being undertaken for the Paling Yards Wind Farm Project, hereafter referred to as the "Project". Tract themselves has been engaged to provide project management services by the Project proponent Global Power Generation Australia (GPG).

This document has been prepared to summarise the traffic engineering inputs that could potentially be incorporated into the Project's Scoping Report. It is noted that the content presented herein is far more extensive then the content that would typically be directly incorporated into the Traffic and Transport section of a Scoping Report. SLR's intent in preparing this document has however been to provide additional material that the project team may see value incorporating into other sections including potentially the Project Description section of the Scoping Report.

2 Project Description

Potential input to "Project Description – Project Overview" or similarly titled section

The Project is to be located on the landholdings known as 'Mingary Park', 'Middle Station', 'Paling Yards' and 'Hilltop' which comprise a total of approximately 4,600 hectares. The Project also contains a transmission line corridor located across nine parcels of land to the north-east of the site. The site is situated in the Central Tablelands of NSW.

A State Significant Development (SSD) application will be made for the Project to the NSW Department of Planning, Industry and Environment (DPIE).

The Project proposes a wind farm with a total capacity of approximately 282MW to 310MW (i.e. 6MW to 6.6MW per wind turbine) and will have a total operational life of 30 years. At this stage, the construction of the Project is planned for commencement in 2022 with a timeframe of 24 months.

The wind farm will include the following elements:

- Approximately 47 wind turbines with a total height of up to 240m (maximum blade tip height);
- Corresponding individual kiosks for the housing of equipment;

- Up to three wind monitoring masts, fitted with various instruments such as anemometers, wind vanes, temperature gauges and other electrical equipment;
- Obstacle lighting to selected turbines (if required);
- Wind farm substation and approximately 9.0km of overhead powerline of up to 500kV;
- Removal of native vegetation and additional vegetation planting to provide screening (as required);
- Upgrade to existing local road infrastructure and internal unsealed tracks;
- Temporary batching plant to supply concrete, site construction offices and laydown area.

3 Existing Road Environment

Potential input to Project Description – Site Context or similarly titled section

The road network in the vicinity of the Project site is characterised by lower order rural roads facilitating connectivity to the surrounding National Highways. Access from the Project site to the nearest National Highway (the Great Western Highway in the proximity of Bathurst) is facilitated by the following lower order roads:

- Littlebourne Street;
- O'Connell Road;
- Abercrombie Road.

The sections of Littlebourne Street, O'Connell Road and Abercrombie Road that are anticipated to facilitate access between the Project site and the Great Western Highway are currently constructed to a sealed standard. These road sections currently facilitate direct access to rural properties along their length as well as providing connection between Bathurst and Goulburn. These road sections are in parts approved as B-double routes by the National Heavy Vehicle Regulator (NHVR).

Key intersections along Littlebourne Street, O'Connell Road and Abercrombie Road in the context of the Project are summarised as follows:

- The site access intersections:
  - Indicative locations have been identified for the site access intersections on the current Project site layout (a total of 7 locations), which will be assessed and refined through the preparation of the EIS;
- Abercrombie Road / Campbells River Road / Dog Rocks Road;
- Abercrombie Road / O'Connell Road / Albion Street;
- Littlebourne Street / Great Western Highway.

Whilst the Project transport routes are yet to be finalised, it is expected that the Great Western Highway would be utilised. The preferred Heavy Vehicle access route will be identified and assessed in the EIS.

Annual Average Daily Traffic (AADT) data sourced from Transport for NSW for the 2019 calendar year (latest available data pre COVID-19) identifies the following existing vehicle volumes:

- 9,510 vehicles per day on the Great Western Highway proximate to Bathurst with 19% heavy vehicles.

The AADT data indicates relatively high heavy vehicle percentages reflective of the freight task performed by the Great Western Highway at this location. However, the AADT data also indicates substantial light vehicle activity at this location which can be attributed to the Great Western Highway facilitating access between Sydney and regional towns such as Bathurst, Orange and Dubbo.

An initial review of the crash data sourced from Transport for NSW (TfNSW) identifies that there are several crashes reported as having occurred during the past five years on Abercrombie Road, Littlebourne Street and O'Connell Road between the Project site and the Great Western Highway.

It is noted that constraints (bridges, overhead structures/utilities/trees, road widths, etc.) exist along the potential Project transport routes currently being investigated and therefore that the Project's access arrangements are subject to ongoing consideration and assessment including on-site inspections. This will ensure that the access strategy ultimately developed for the Project will facilitate the safe and efficient movement of materials and workforce.

4 Project Construction Traffic

4.1 Heavy Vehicle Traffic

Potential input to Project Description – Project Overview or alternatively the Traffic and Transport Section of Assessment of Key Issues Section

The peak traffic generation of a wind farm project occurs during the project's construction phase and hence this is the period of greatest potential impact. It is noted that the traffic associated with the ongoing operation of wind farms once constructed is typically quite modest both in terms of the quantum and the size of vehicles.

It is understood that the wind turbine equipment associated with the Project will be imported from the international market and will arrive via ships into the Port of Newcastle. This equipment will then be transported from Newcastle to the Project site via road transport. Over dimensional vehicles (OD vehicles) will be required for the transportation of certain wind farm equipment including for instance the turbine blades.

The following two transport routes have currently been identified as potentially servicing the Project with further investigation to occur as planning for the project advances:

- Route A – 444km – for loads under 5.1m in height:
  - Selwyn Street → George Street → Industrial Drive → Maitland Road → New England Highway → John Renshaw Drive → M1 → Pennant Hills Road → M2 → M7 → M4 → Great Western Highway → Littlebourne Street → O'Connell Road → Abercrombie Road → Project Site.
- Route B – 654km – for loads up to 5.9m in height:
  - Selwyn Street → George Street → Industrial Drive → Maitland Road → New England Highway → John Renshaw Drive → Hunter Expressway → Golden Highway → Denman Road → Bengalla Road → Wybong Road → Golden Highway → Castlereagh Highway → Main Street → Pipers Flat Road → Range Road → Great Western Highway → Littlebourne Street → O'Connell Road → Abercrombie Road → Project Site.

Whilst detailed forecasts of the traffic generation potential of the Project will be prepared as part of the EIS assessment, it is identified as an indicative guide that a wind farm project of this scale could be expected to generate in the order of 25 to 50 return heavy vehicle trips per day during the Project's construction phase. It is noted that a modest proportion of these movements (i.e. a few percent) would be undertaken by OD vehicles.

4.2 Light Vehicle Traffic

Potential input to Project Description – Project Overview or alternatively the Traffic and Transport Section of Assessment of Key Issues Section

Whilst detailed forecasts of the traffic generation potential of the Project will be prepared as part of the EIS assessment, it is identified as an indicative guide that a wind farm project of this scale could be expected to generate in the order of 50 return light vehicle trips per day during the Project's construction phase.

The volume of light vehicle traffic ultimately generated by the Project will be dependent on the rate at which the wind turbines and associated infrastructure are proposed to be erected and therefore the required workforce size. In addition, the workforce transport strategy ultimately adopted will significantly influence the light vehicle generation of the Project. For example, if a high proportion of the workforce is transported to the site via buses, then the light vehicle generation associated with the Project will be relatively modest, however, if there is limited use of buses to transport the workforce, then the light vehicle generation of the Project would be more significant. As noted previously the EIS assessment will consider these aspects in detail.

5 Project Operations Traffic

Potential input to Project Description – Project Overview or alternatively the Traffic and Transport Section of Assessment of Key Issues Section

The operational traffic demands associated with the Project are expected to be relatively modest and associated with the operational workforce and general maintenance activities. Whilst detailed forecasts of the traffic generation potential of the Project will be prepared as part of the EIS assessment, it is identified as an indicative guide that a wind farm project of this scale could be anticipated to generate in the order of 5 return vehicle trips per day during the Project's operations phase.

The traffic impacts associated with the operational period of the Project are not considered to be the critical element within the traffic assessment but will nevertheless be considered as part of the EIS assessment for completeness.

6 Method of Assessment

Potential input to the Traffic and Transport Section of Assessment of Key Issues Section

A detailed traffic and transport assessment will be conducted as part of the EIS assessment process to ensure potential traffic impacts associated with the Project are managed / mitigated as appropriate. The assessment will be carried out in accordance with the RTA Guide to Traffic Generating Projects (2002) with the following items considered:

- Description of the Project activities and any associated staging.
- Estimation of the construction material and workforce requirements of the Project.
- Preparation of detailed traffic generation forecasts (light and heavy vehicle) beyond nominal guidance presented herein.
- Review of existing road conditions including collation of relevant traffic count data and interrogation of crash data.

- Identification of an access strategy utilising lower order roads that are either currently fit-for-use to carry Project traffic or could be made fit-for-use. In addition, the access strategy will need to consider the fitness-for-use of any existing points of access from the lower order road network to the highway network. The fit-for-use assessment will consider safety, efficiency and asset integrity considerations.
- Complete swept path assessments to ensure that over-dimensional vehicle movements can be accommodated.
- Identify the specific road upgrades or maintenance commitments required to ensure that the local and classified road network can safely and efficiently accommodate the traffic generated by the Project.

The assessment requirements detailed herein will ensure a thorough evaluation occurs to inform development of appropriate management / mitigation strategies to ensure that the safety, efficiency and asset integrity of the road network is not prejudiced by Project traffic, both during the construction phase and operational phase of the Project.

7 Key Issues

Potential input to the Traffic and Transport Section of Assessment of Key Issues Section

The following is a summary of traffic-related issues for the Project in SLR's view that would be considered as part of the traffic assessment component of the overall environmental assessment:

- According to the AADT data for Great Western Highway, the initial estimates for the Project related heavy vehicle volumes would result in an increase of <5% of existing heavy vehicle traffic volumes in the short-term (during construction of the Project). Whilst Great Western Highway is currently understood to operate with a certain level of spare capacity, the scale of the potential traffic volume increases will nevertheless still likely warrant further consideration. In particular, assessment is likely to be required at the location(s) where Project traffic accesses Great Western Highway via the lower order road network (i.e. at Littlebourne Street intersection based on the current routes). This assessment will need to determine if intersection upgrade works are warranted to maintain the safety and efficiency of the road network. Special access requirements may be required for a limited number of over-dimension indivisible movements associated with the transport of large equipment.
- Given the lower order nature of the other roads within the vicinity of the Project site including Littlebourne Street, O'Connell Road and Abercrombie Road, it is expected that any lower order roads ultimately facilitating access to the site would experience significant traffic volume increases for at least a short term period. Thus, a detailed traffic assessment of any proposed use of these roads by Project traffic will be undertaken to ensure that the safety and efficiency impacts of construction traffic can be appropriately managed or mitigated.