




MEMORANDUM

Date: 21st January 2009
To: Ross Richards
Copy : Philippa Rech
From: Adam Ainsley
Job no: 2112728C
Re: Stockyard Hill Terminal Station

Parsons Brinckerhoff
Level 7, 457 St Kilda Road
Melbourne VIC 3004
PO Box 7209
Melbourne VIC 8004
Australia
Telephone +61 3 9861 1111
Facsimile +61 3 9861 1144
Email melbourne@pb.com.au

 Parsons Brinckerhoff supports the Environment by printing on 100% recycled paper

Background

Parsons Brinckerhoff was previously commissioned by Stockyard Hill Wind Farm (SHWF) Pty Ltd to investigate the traffic implications arising out of the construction of the SHWF. A traffic impact assessment of the wind farm development that included a route access plan highlighting the preferred routes for accessing the site was previously submitted (Document No. 2112728A-RPT-001-C:).

The wind farm described in the above document is to be connected via overhead powerlines to a 500kV power line to the south of Lismore. This connection requires the construction of a 132 – 500kV terminal station.

Scope of this Memo

Parsons Brinckerhoff have been commissioned to provide a brief desktop commentary into the traffic and transport considerations for the construction and operation of a 132 – 500 kV terminal station for the stockyard hill wind farm. This memo provides brief desktop commentary on:

- The location and nature of the proposed development site and its connectivity with the existing road network.
- Commentary on the type of vehicles and loads that can be expected, along with a brief description of some of the roads in the vicinity.
- Recommendations into further documentation/investigation required.

Proposed Development

The proposed terminal station development is located approximately 40 Km south west of Ballarat, just south of Lismore (75 H9). The location is shown on the diagram over the page. The size of the substation plant is expected to be about 250m by 150m. The entire site including landscaping and buffers is expected to be 450m x 200m. The development will be connected to the existing road network at Four Tree Road.

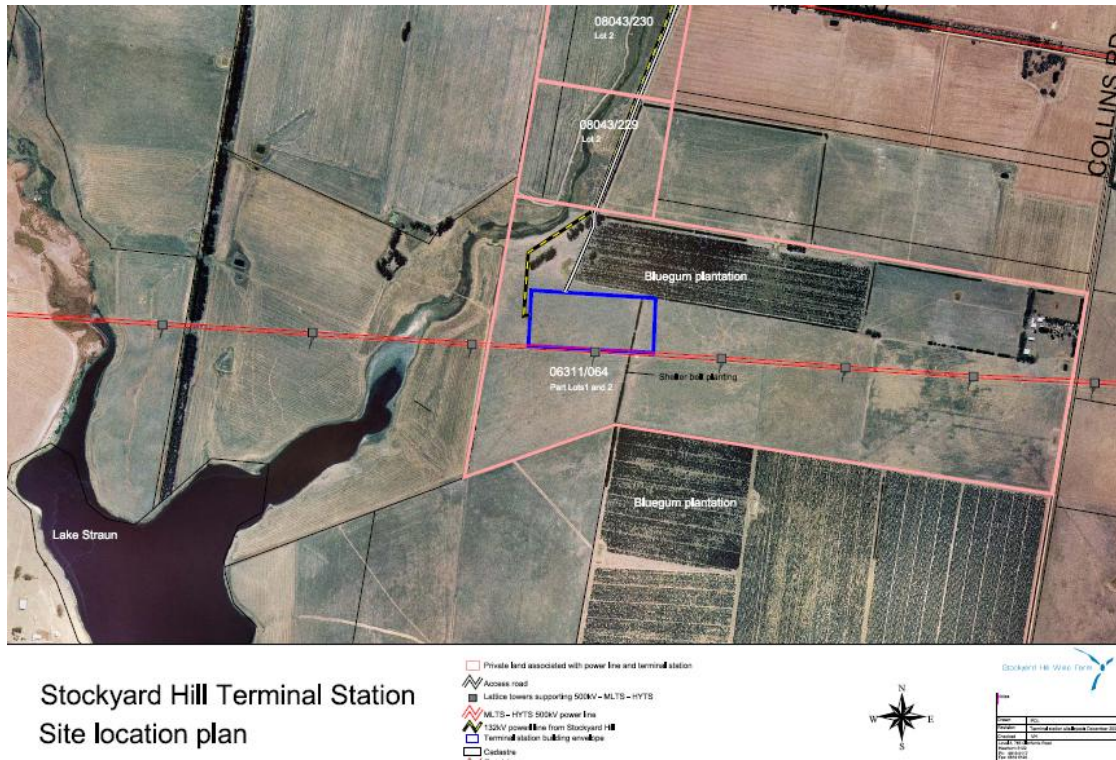


Figure 1: Location of Terminal station

The full development of the terminal station can be summarised into two phases:

- Phase 1: Construction;
- Phase 2: Operation;

The construction phase of the wind farm will include such activities as:

- Transport of people, materials and equipment to site;
- Civil works for access track construction, excavation for footings and trenching for cables;
- Installation of transformers using large mobile cranes;
- Construction of power reticulation lines and cables and;
- Temporary site office.

It is likely that construction will commence with the upgrading of roads and all other site civil works, including preparation of hardstand areas, and laying of cables. The largest items that will need to be transported to the site will be two transformers which have a mass of around 60t each. The total number of vehicles that will be generated during construction is not known at this stage.

Construction of the wind farm is estimated to start at the end of 2010 and practical completion is due in 2014. Construction of the substation will occur at some point during this period.

Once completed the operation phase will not generate a significant volume of traffic as staff will only ever be present on site for servicing and maintenance duties.

Roads and Key Access

Below is a summary of the function and condition of some of the key roads that link the development to the rest of the road network.

VicRoads Arterials

Road	VicRoads Classification No.	Condition	Number of lanes
Hamilton Hwy	B140	Sealed	1 each way
Lismore - Skipton	C172	Sealed	1 each way
Lismore - Scarnsdale	C171	Sealed	1 each way
Camperdown - Lismore	C165	Sealed	1 each way
Foxhow Road	C164	Sealed	1 wide lane in total

Feeder Roads

Road	Responsible authority	Condition	Number of lanes
Four Tree Road	Shire of Corangamite	UnSealed	1 wide lane in total
Smiths Road	Shire of Corangamite	UnSealed	1 wide lane in total
Collins Lane	Shire of Corangamite	UnSealed	1 wide lane in total
Lower Darlington Road	Shire of Corangamite	Sealed	1 wide lane in total

It is expected that the routes used by construction traffic will incorporate a combination of the above roads to access the site. The exact routes will need to be determined in the Traffic Management plan, which is discussed below:

Traffic Management Plan

A Traffic Management Plan (TMP) will need to be completed and necessary permits gained prior to construction. The proposed Stockyard Hill Wind Farm situated in the Shire of Pyreenes will also need a TMP. The TMP's at both locations should be co-ordinated with each other to avoid any potential conflicts that may occur.

Firstly a route access plan will need to be developed to provide guidance on the most suitable route to transport the raw material and the two transformers during the construction phase of the proposed development.

An assessment will need to be made of key potential transport route against a set of criteria. An example of the criteria that should be taken into consideration in the assessment is shown below:

- Designated bus routes
- Designated truck routes
- Road formation widths
- Condition of the riding surface
- Sight distances at intersections
- Availability of turning space at intersections
- Low overhead wires and low bridges
- Railway level crossings
- Load limits on structures
- Existing freight traffic on the relevant road network
- Road network upgrades.

The TMP should assess the sufficiency of key intersections identified in the route management plan. Any potential impact of construction traffic should be assessed. Any mitigating works or upgrades that are required should be detailed in the TMP.

Details of temporary works should also be provided. This may include details of any temporary road closures or one way workings that might be required.

Due to the OD nature of some of the loads expected to be transported, obtaining the necessary permits becomes an important component of the final approval process of the TMP. A brief mention of the permitting requirements is detailed below:

Over Dimensional Vehicle Permits

The transport of the transformers and the movement of the large cranes will require OD load permits. Pilot and escort vehicles will need to escort the OD loaded trucks. Details of these requirements are included in the Pilot and Escort Vehicle Graph contained in VicRoads Publication Number 0083 "Additional Permit Conditions".

Load Limits

The transport of the raw materials as well as the transformers will be subject to the Victorian Statutory Load Limits set out in Part 4 of the Road Safety (Vehicles) Regulations 1999. These regulations will have to be investigated and met prior to any movement of the transformers and raw materials.

Conclusion

The proposed development of the terminal station will not generate any significant additional traffic once it is operational. The only significant traffic that will be generated by the site will be during the construction phase. It is recommended that a Traffic Management Plan for the construction phase be completed in consultation with VicRoads and Shire of Corangamite Council.