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 **RE Future**

Mumblin Wind Farm

Application for Planning Permit
Appendix L – Desktop Geotechnical Report
October 2025



**Melbourne
Geotechnics**

CONSULTING GEOTECHNICAL ENGINEERS

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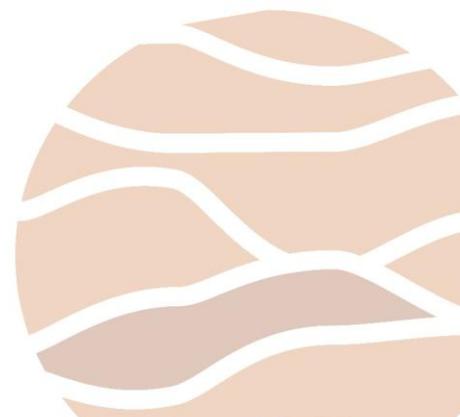
Geotechnical Desktop Study

Re: Proposed wind turbine development at

Mumblin Wind Farm, Victoria

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File: 220050/5
Date: 28 April 2025
Client: RE Future Pty Ltd
PO Box 399
CLIFTON HILL VIC 3068
Distribution: - RE Future Pty Ltd



Introduction

A desktop study was undertaken to provide an initial geotechnical assessment of the proposed Mumblin Wind Farm. The proposed wind farm is located approximately ten kilometres (10 km) south-east of Cobden, Victoria and will consist of up to eight wind turbine generators with a combined capacity of approximately 60 megawatts (MW). The wind turbines themselves will be up to 250 m in height to the tip of the blades and together will enough power for approximately 35,000 homes. Relevant geological maps were examined with the purpose of providing feasibility foundation and pavement advice for the proposed construction.

Scope of the Study

The study is limited to a desk top review only.

The scope of this report is to provide comments on the anticipated footing systems and pavement options, based on experience in the region and its geology, as interpreted from appropriate maps.

Site investigation work will be required to confirm the assumptions made in this report for any design purpose.

Site Description

The site is of the wind farm is \approx 10km south east of Cobden Victoria, pictured in figure 1. The site is currently being used as farmland. Aerial imagery suggests that the site has a ground cover of grass with some gravel and paved roads.

Subsurface Conditions

Regional geology

The site is identified on the 'Geological Survey of Victoria' Victoria Sheet (1:250,000). The geology of the turbine site is identified on the geological map as lying within the Quaternary "Newer Volcanic" formation and associated residual soil profiles. Weathering of these olivine basalt flows typically result in shallow surface residual silts, underlain by highly reactive silty clays which grade to variably weathered basalt at depth.

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The lower lying areas of the proposed wind farm are characterised by Quaternary 'swamp' deposits. As the turbines and the proposed development will be situated on the 'high' ground, these soils will not be intersected.

Discussion

Anticipated subsurface conditions

The Quaternary "Newer Volcanics" formation is expected to be characterised by:

- Topsoils comprised of clayey SILT of medium plasticity, underlain by,
- Silty CLAY of a high plasticity, underlain by,
- Variably weathered basalt ROCK.

The subsurface geology will need to be confirmed through direct sampling methods.

Checks of Visualising Victoria's Groundwater database (<http://www.vvg.org.au/>) indicates that the local groundwater table lies at a depth between <5m to 10m, noting this data is approximate. No impact on the groundwater will result from the windfarm development.

The local groundwater regime would be investigated during a detailed geotechnical investigation, as necessary.



Transient perched groundwater may form within the upper topsoils at shallow depths during the wetter months.

The geological setting is favourable in terms of interaction between the soil mass and groundwater regime.

Foundation options

It is understood that loading conditions are relatively light for wind turbine structures, with overturning movements usually the critical loading condition in the order of 200kPa (peak edge pressures). The natural CLAY soils and rock are capable of supporting these loads.

It is expected that a mass pad footing will provide the most practicable foundation type for the structure.

At this stage, it is expected that no unusual difficulties will be associated with the construction of the wind turbine footings.

Pavements

It is anticipated that access roads will be required for the construction of the wind farm facility and future maintenance.

Heavy construction vehicles and large cranes may be required during the construction period. Traffic frequency and loading conditions on access roads during construction may be high. However, postconstruction traffic is likely to be low and comprise light vehicles for maintenance purposes only.

Subgrade properties within the region may range from poor to good. Some form of subgrade improvement or geo-reinforcement may be required. This could include in situ lime/cement stabilisation upon which the pavement is constructed or placement of a geo-fabric on the stripped surface upon which the pavement is constructed.

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Conventional construction practices should be able to accommodate the ground conditions on site (evidenced by existing roads and pavements).

Report notes

This report contains information for the feasibility stage of the proposed development. Detailed geotechnical site investigation and reporting will be required for design purposes.

During the construction period, land may be disturbed and exposed to erosion. Erosion and sediment runoff can be minimised/controlled by adopting good construction practices referenced below (2), (3) and (4).

Further information regarding geotechnical site investigation reports is referenced below (6).

Please contact us if you have further queries.

Yours faithfully,

Melbourne Geotechnics Pty Ltd

Matthew Buckle BE (Geo) BSc M.I.E Aust

Geotechnical Engineer

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References

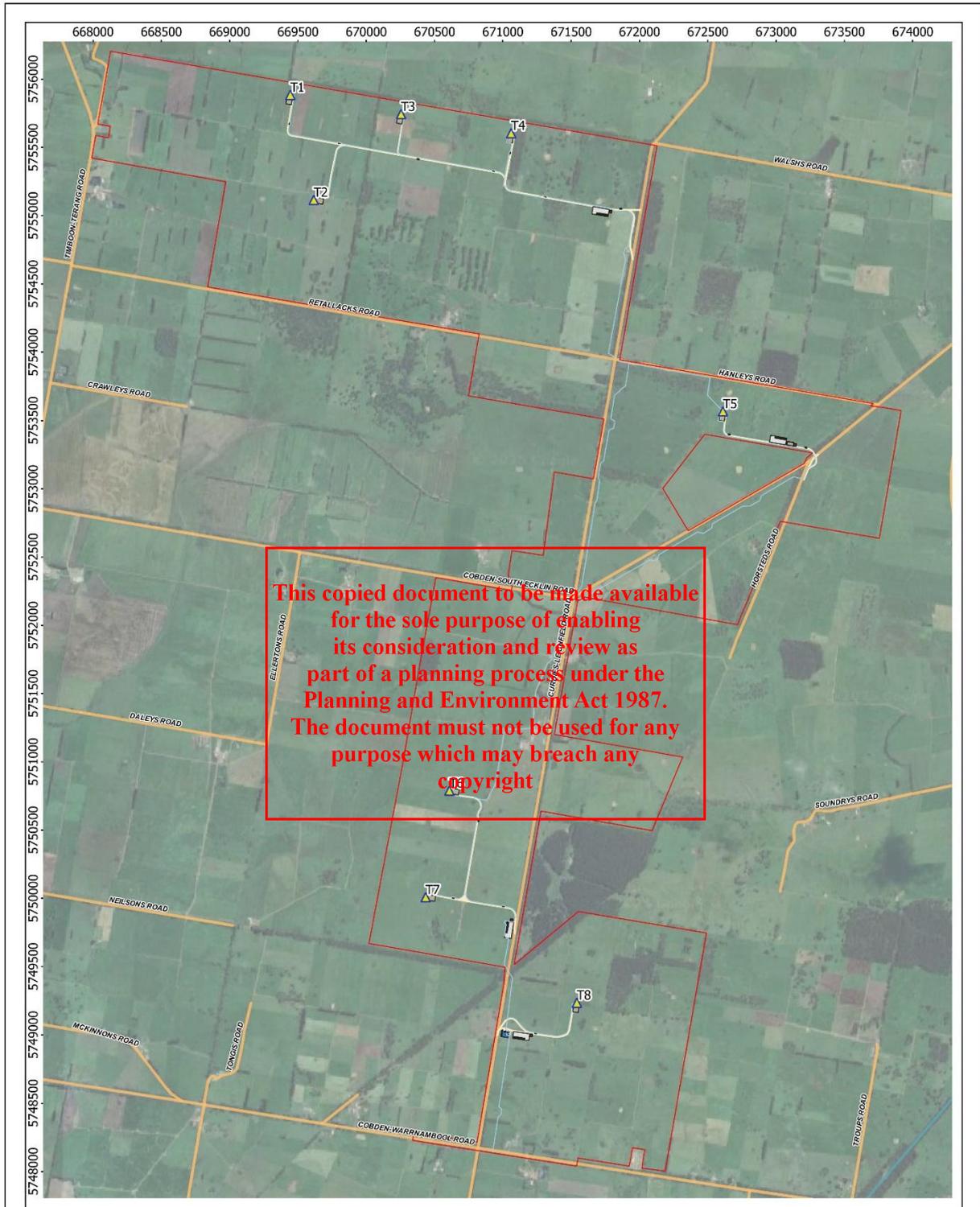
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Legend

- Subject Site
- Development Footprint
- ▲ Wind Turbine
- Cabling Trench
- Static Water Supply
- Turbine Footing
- Site Office
- Laydown Area
- Handstand
- Emergency Overtaking Lane
- Access Track
- Control Building
- Switchyard Infrastructure Pad
- Transformer Pad
- Substation
- Land Details**
- Roads
- TRAIL



Mumblin Wind Farm

Site Plan

Drawn	AM	Scale when printed at A3	1:26,000
Checked	SS	Date	29-04-2025
Approved	SS	Figure	05

