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Stockyard Hill Wind Farm and Related Projects

Preliminary Documentation (under the *Environment Protection and Biodiversity Conservation Act 1999*)

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Executive Summary

Stockyard Hill Wind Farm Pty Ltd (SHWFPL) (a subsidiary of Origin Energy) is proposing to develop a wind farm in south-west Victoria, and associated infrastructure, known as the Stockyard Hill Wind Farm (SHWF) and Related Projects (the Project).

On 15 July 2016, the Project was referred to the Department of Environment and Energy (DoEE) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). The DoEE determined on 14 September 2016 that the proposed action is a 'controlled' action and required assessment by Preliminary Documentation.

The decision was based on the conclusion that the proposed action is likely to have a significant impact on 'listed threated species and communities' protected under Part 3 of the EPBC Act, including:

- Striped Legless Lizard (*Delma impar*) - vulnerable;
- Golden Sun Moth (*Synemon plana*) - critically endangered;
- Natural Temperate Grassland of the Victorian Volcanic Plain ecological community - critically endangered.

This Preliminary Documentation report provides information requested by the DoEE to assist in assessing the relevant impacts of the Project. As detailed in previous referral documentation (Appendix A) and this report, management and offset measures are proposed to adequately address any potential impacts to matters of national environmental significance resulting from the action, including:

- ***Striped Legless Lizard*** - The proposed road upgrades (particularly along Stockyard Hill Road and Dunnets Road) will result in the direct loss of approximately 2.53 ha of known grassland Striped Legless Lizard habitat. In addition, it is predicted that up to 39.63 ha of modified grassland (low to medium quality habitat) for Striped Legless Lizard habitat is proposed to be directly impacted as a result of the construction of internal access tracks and at the turbine hardstand/foundation locations.

  Three proposed offset sites are being considered as offset sites for the Striped Legless Lizard OMS, and include:

  - Option 1 – Dunnets North Offset Site: 30 ha of habitat north of Dunnets Road (on site)
  - Option 2 – Dunnets South Offset Site: 30 ha of habitat south of Dunnets Road (on site)
  - Option 3 – Cressy (offsite)

  It is SHWFPLs preference for an offset to be secured on-site (with a minimum of 43 ha secured across the two options). However, it is acknowledged that the on-site options (Options 1 and 2, or part thereof) are subject to confirming habitat and species during the next survey period (anticipated to be a condition of approval). If an onsite option is not deemed suitable then an off-site offset can be secured (e.g. Option 3).

- ***Golden Sun Moth*** – The Wind Energy Facility has the potential to impact approximately 1.57 ha of known Golden Sun Moth habitat on a single property located in the north-west of the proposed Wind Energy Facility. The entire property supports high quality grassland habitat for the Golden Sun Moth.

  It is considered that the impacts to Golden Sun Moth in the context of the proposed project, constitutes a very small proportional impact across the species known range. Furthermore, the proposed impacts to habitats will be adequately compensated through the proposed on-site offset site, resulting in an overall net benefit to the species.

  Golden Sun Moths are known to occur across approximately 120 ha of the proposed on-site offset site, within the proposed WEF site boundary. A total of 173 ha of this property is proposed to be used as an offset site for the species (i.e. a conservation covenant will be placed over the land). Given that the 173 ha will exceed the offset requirement for this Project, 9 ha of this site will be used to compensate for the removal of suitable habitat associated with the Project.

- ***NTGVVP*** – The project will result in the total direct impact of 0.208 ha of the NTGVVP ecological community and does not to meet the significant impact thresholds outlined in the significant impact

guidelines for this ecological community. There are not considered to be any indirect impacts to NTGVVP, as a result of appropriate mitigation measures being implemented during all stages of the Project.

With the exception of the permanent removal of a small area of NTGVVP, the proposed action is not likely to lead to any irreversible impacts to this listed ecological community. As such, an offset management strategy has not been prepared. However, appropriate mitigation measures will be undertaken during all stages of the project to avoid, and where possible, further minimise impacts to NTGVVP.

The potential impacts to matters of national environmental significance resulting from the action are less than those previously contemplated (and approved) by the 2011 EPBC Decision 2009/4719. Furthermore, the actual disturbance area associated with the construction and operation of the projects will be optimised for minimal impact pending final major procurement decisions, detailed civil and electrical design and timing of project construction.

1. Introduction

1.1 Purpose of this Report

Stockyard Hill Wind Farm Pty Ltd (SHWFPL) (a subsidiary of Origin Energy) is proposing to develop a wind farm in south-west Victoria, and associated infrastructure, known as the Stockyard Hill Wind Farm (SHWF) and Related Projects (the Project).

On 15 July 2016, the Project was referred to the Department of Environment and Energy (DoEE) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) (Appendix A). The DoEE determined on 14 September 2016 that the proposed action is a 'controlled' action and required assessment by Preliminary Documentation (Appendix B).

The decision was based on the conclusion that the proposed action is likely to have a significant impact on 'listed threated species and communities' protected under Part 3 of the EPBC Act, including:

- Striped Legless Lizard (*Delma impar*) - vulnerable;
- Golden Sun Moth (*Synemon plana*) - critically endangered;
- Natural Temperate Grassland of the Victorian Volcanic Plain ecological community - critically endangered.

The DoEE has specified information which must be included for assessment of the action, as part of the Preliminary Documentation (DoEE Request for Additional Information, 13 January 2017) (Appendix C). This report is structured to respond directly to the information requirements. The table below outlines DoEE's information requirements and sets out where in the information fulfilling the guidelines is included in this report.

Table 1 – DoE Additional Information Requirements

DoE Information Requirements	Location
Description of the Action	Section 2 of this report and Section 2 of the referral form contained in Appendix A.
Impacts to MNES • Striped Legless Lizard (Delma impar) – vulnerable; • Golden Sun Moth (Synemon plana) – critical endangered; • Natural Temperate Grassland of the Victorian Volcanic Plain ecological community – critically endangered.	Section 3 of this report, Section 3.1 of the referral form contained in Appendix A and MNES summary report in Appendix J.
Proposed Avoidance, Management and Mitigation Measures	Section 4 of this report and MNES summary report in Appendix J.
Offsets	Section 5 of this report, MNES summary report in Appendix J, Golden Sun Moth Offset Management Strategy in Appendix K and Striped Legless Lizard Offset Management Strategy in Appendix L.
Social and Economic Impacts	Section 6 of this report.
Ecological Sustainable Development	Section7 of this report.
Environmental Record of Persons(s) Proposing to Take the Action	Section 8 of this report and Section 7 of the referral form contained in Appendix A.
Other Approvals and Conditions	Section 9 of this report.

1.2 Project Background

The project was approved under Commonwealth and state legislation between 2008-2011, however is no longer economically efficient given the current technology available. As such, applications/referrals for new or amended approvals are currently being sought for the amended project.

On 8 July 2008, advice was sought from the Minister for Planning as to whether the original proposal (then proposing 282 turbines) would require assessment under the *Environment Effects Act 1978* (Referral No. 2008R00007). The Minister determined on 29 September 2008 that no Environment Effects Statement was required to be prepared, subject to three conditions (these conditions were met through the planning permit process).

Additionally, a referral (2009/4719) under the EPBC Act was prepared and a decision (11 February 2011) made to approve the original project as a controlled action with conditions (Appendix D).

The decision on the controlled action was made following an assessment under the accredited State planning permit process (which assessed the planning permit application and the controlled action under the bilateral agreement). This resulted in Planning Permit No PL-SP/05/0548 (Pyrenees Planning Scheme) being issued by the Minister for Planning on 26 October 2010 to enable the use and development of the SHWF Wind Energy Facility (the 'permitted' WEF).

Planning Permit No. 2009/104 and 2009/105 were also issued by the Minister for Planning on 26 October 2010 to enable the construction of a 132 kV / 500 kV terminal station near Berrybank and for the removal of native vegetation associated with the construction of a 132 kV overhead powerlines between the SHWF and the terminal station near Berrybank. However, during the latter half of 2011, the 'permitted' overhead powerlines route and terminal station site were reviewed and it was determined that a terminal station site closer to the crossover of the 500 kV and 220 kV lines was preferable.

Between 2010 to mid-2014, development activities were progressed, including additional wind monitoring and background noise monitoring (in accordance with Planning Permit No. PL-SP/05/0548), flora and fauna surveys (in accordance with Planning Permit No. PL-SP/05/0548, and conditions of EPBC Decision 2009/4719), geotechnical testing and securing/amending the necessary land agreements for the project. Stage 1 of the Project development (the construction of 6 permanent anemometers) was undertaken in 2012 and constitutes the commencement of works in accordance with Planning Permit No. PL-SP/05/0548.

Following the commencement of the Renewable Energy Target (RET) review in early 2014, the project was placed on hold. Since completion of the RET review in June 2015, and restored policy certainty to the large-scale renewable industry, works on the development have recommenced.

While the project was delayed, wind turbine technology available in the market has continued to evolve with newer wind turbines being developed which generate renewable energy at lower long-run average cost. As such, SHWFPL is currently seeking an amendment to Planning Permit No PL-SP/05/0548 to allow for the newer turbines, which would result in an increased tip height, blade length and tower height of each turbine (the 'amended' WEF').

Further details on the background of the project is contained in Section 2.2 of the referral form (Appendix A).

2. Description of the Action

2.1 Project Overview

The WEF involves the installation of a maximum of 149 turbines and associated on-site infrastructure (including substations, internal overhead powerlines, cabling and access tracks) and road upgrades. The WEF site is made up of freehold agricultural land holdings totalling approximately 109.5 km². SHWF has entered into commercial agreements with 45 landholders to host the wind farm and associated infrastructure.

The related external overhead powerlines will enable the delivery of renewable energy from the WEF to the national electricity grid. Proposed to extend approximately 75 km (in total length) between the WEF and a terminal station (south of Lismore), the 132 kV overhead powerlines will cross land in the Shire of Pyrenees and Shire of Corangamite in Victoria.

The related terminal station will enable the delivery of renewable energy from the WEF to the national electricity grid. The terminal station will be located to the south of Lismore and adjacent the existing Moorabool to Heywood double circuit 500 kV transmission line. The terminal station project includes:

- the construction and operation of the terminal station; and
- the upgrade of the intersection of Camperdown-Lismore Road and Lower Darlington Road.

The related quarry will provide construction materials to support the development of the WEF and associated infrastructure. The quarry will produce an estimated total of 1,200,000 tonnes of crushed rock to be used for construction of internal access roads, turbine hardstands, power pole hardstands and concrete aggregate, associated with the Project. The quarry is proposed to be located on a site within the boundary of the WEF area. Upon cessation of construction of the SHWF, the quarry will be rehabilitated to return to agricultural use.

Figure 1 overleaf illustrates the general location of the SHWF WEF, external overhead powerlines, terminal station and quarry. Further information about the locality of the Project is provided in Section 1 of the referral form (Appendix A) and title particulars for each infrastructure component in Appendix E.

Figure 1 – Related Projects (Source: SHWFPL)

2.2 Wind Energy Facility

2.2.1 Main Components

The WEF comprises up to 149 wind turbine locations (as shown on the Amended Wind Energy Facility Indicative Layout Plan in Appendix F), including the infrastructure components described in Table 2.

Table 2 – WEF Infrastructure Disturbance Zones

Infrastructure	Current Design
Turbine Dimensions	The turbine envelope proposed includes: • overall maximum tip height must not exceed 180 m above natural ground level; • hub-height of no greater than 120 m above natural ground level; • rotor diameter no greater than 142 m; and • ground clearance from the bottom of the blades to the ground level is not less than 32m.
Access Tracks	General – 12.5 m wide Trunk – 13.5 m wide
Underground Cable	3 m wide
Hardstands and Foundations	50 m x 70 m including foundations
Temporary Construction Facilities (Concrete Batching Plant / Staging Areas / Compound)	2 x 100 m x 100 m (north/east area and south) 1 x 130 m x 250 m construction compound (west area) 1 x 100 m x 200 m (south area)
Permanent Maintenance Facility	1 (100 m x 40 m)
Substations / Switchyards	4 (100 m x 100 m)
Internal Powerlines	Ground clearance – 10 m wide Aerial clearance – 30 m wide

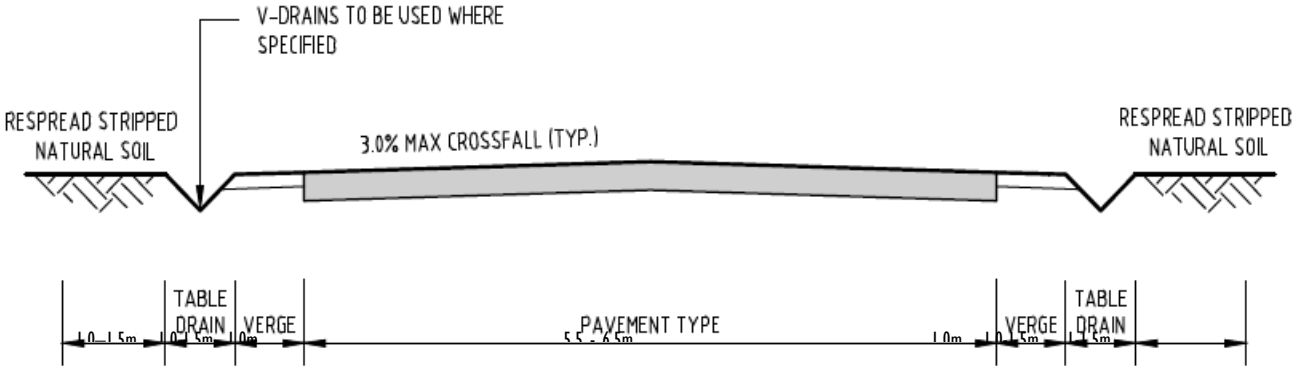


Figure 2 – Typical Wind Farm Access Track Cross Section *(Source: Catcon 2015)*

2.2.2 Ancillary components

SHWFPL are proposing to adopt a traffic management principle of minimising use of the existing road network where possible. Based on this approach, SHWFPL propose limiting the use of construction traffic to the below roads with a concept approach to design improvements/upgrades based on our existing data for these roads.

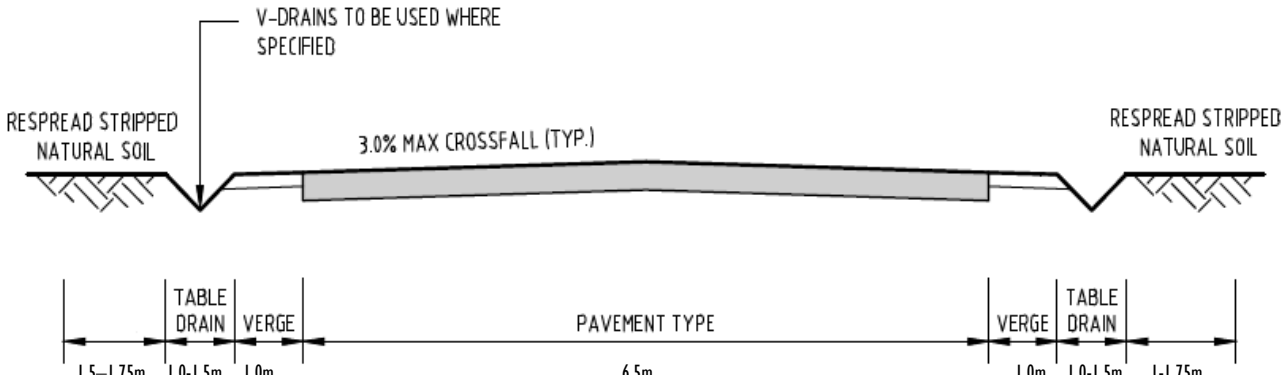
- Skipton Road.
- Stockyard Hill Road (section between Thompsons Road and Dunnets Road).
- Dunnets Road.

- Mt Emu Settlement Road (section between Skipton Road and ~5.8 km east of Skipton Road intersection).
- Dooleys Road (section between Skipton Road and ~0.8 km east of Skipton Road intersection).
- Thompson Road.
- Toppers Lane.
- Eurambeen-Settlement Road (section between Eurambeen-Streatham Road and ~1.8 km west of Eurambeen-Streatham Road intersection).

Further details on the proposed concept design improvements and upgrades to these roads are contained in Section 2.1 of the referral form (Appendix A).

The exact location and design of the road works within the disturbance footprint will be determined during detailed design and through the development of the Traffic Management Plan and Development Plans prepared in accordance with Planning Permit No PL-SP/05/0548. However, preliminary engineering design has been prepared for road cross sections and key intersections to enable the determination of total maximum ground disturbance associated with the roadworks proposed. It is expected that the typical cross section of ground disturbance of roads will be between 13.5 - 15 m depending on the existing conditions; topography and hydrology of the various roadworks zones (see Figure 3).

The total maximum disturbance footprint of the roadworks (as shown on the Amended Wind Energy Facility Indicative Layout Plan (Appendix F)) is proposed to comprise approximately 47.4 ha. The disturbance area has been selected to minimise impacts to native vegetation. For example, the disturbance area has been located on alternative sides of the road reserves to avoid significant vegetation impacts. However, some impacts on native vegetation have been unavoidable.



Note: Image not to scale

Figure 3 – Typical Roadwork Cross Section *(Source: Catcon 2015)*

2.2.3 Key construction activities

It is anticipated that the key construction activities of the proposed WEF will be undertaken in three phases as follows:

- Phase 1 - Civil Construction: Preparation of the site including public road and intersection upgrades, construction of access tracks, creation of turbine footings and other minor civil works.
- Phase 2 - Installation: This phase involves the installation of towers, turbines, substations, cabling and other wind farm specific equipment.
- Phase 3 – Commissioning: The commissioning phase of the works involves ensuring that the turbines are operational (i.e. final safety checks, network tests, etc.).

These phases may overlap with installation occurring at locations while civil works continue on the remainder of the site. In addition, it is anticipated that rehabilitation will occur on a 'rolling' basis as turbines are installed.

It is anticipated that all construction activities will be undertaken in approximately 36 month period.

2.2.4 Key operational activities

The operation of a WEF is considered to be 'self-sufficient' with the operational activities limited to monitoring, maintenance and repairs.

The operational life of the SHWF WEF is anticipated to be 25 years.

2.2.5 Key decommissioning activities

The key decommissioning activities will comprise of the removal of above ground infrastructure (i.e. turbines, substations, etc.) and rehabilitation of civil works (i.e. access tracks).

Decommissioning work will be undertaken in consultation with the landholders to ensure that the land can be returned to agricultural use (i.e. certain access tracks may be retained at the request of the landholder).

2.3 External Overhead Powerlines

2.3.1 Main components

The proposed external overhead powerlines are proposed to extend approximately 75 km (in total length) between the WEF and the terminal station in south west Victoria generally between:

- the WEF in Stockyard Hill to Mt Emu Creek, to the east of Skipton (Shire of Pyrenees); and
- Mt Emu Creek, to the permitted terminal station site, on Lower Darlington Road, Lismore (Shire of Corangamite).

The proposed external powerlines alignment (including areas of native vegetation proposed to be removed) is show on the plans in Appendix G.

The 132 kV overhead powerlines will include steel poles with a galvanized coating finish, and may including fixtures for climbing. The poles will support up to 3 main cross-arms (or 6 independent arms) which will in turn each support up to 2 pairs of conductors/wires that may be marked for safety or visibility if necessary and the poles may support additional cross-arms to carry communication and aerial earth wires.

The construction of the powerlines will conform to the specifications as per Australian Standard AS/NZS7000:2010. The circumference at the base of each pole will be up to 2 m in diameter at their base, with an approximate height of between 18 - 40 m. The height of the pole is driven by a number of factors, typically relating to span lengths that have been designed to respond to environmental, technical and landowner considerations. The average distance between each pole location will be approximately 300 m and the lowest point of the line will not be lower than 8.6 m above ground.

One commonly used foundation option to support overhead powerlines of this type includes a mass concrete pad to which the pole is secured by anchor bolts. The anchor bolts sit within a concrete pedestal that connects to the pad beneath the surface. The pedestal usually rises above the ground by approximately 0.3 m and is typically the same width as the base of the pole. A narrow strip of metal used for earthing usually runs from the base of the pole to the ground via the foundation. The total width of the foundation may be up to ~10 m x 10 m and is located within the hardstand area of 20 m x 25 m at each pole location. Bored pole foundations may be constructed to a depth of 8 m.

2.3.2 Ancillary components

The total ground disturbance footprint of the route comprises approximately 83.4 ha which is results from earthworks to accommodate pole foundations and ancillary powerlines installation activities including the creating of access tracks and hardstands (the exact location of these activities within the disturbance footprint will be determined during detailed design) (Figure 4). Additionally, removal of vegetation within a 36 to 46 m corridor (which has a height greater than 3m) to ensure appropriate safety clearance (as shown in Figure 5) has been taken into consideration.

Access tracks of up to ~10 m wide and ~0.3 m deep will be required along the alignment (Figure 6); however an alternative low-disturbance construction methodology of applying geofabric on top of the existing ground surface and gravel will be used in areas of cultural heritage sensitivity. Additionally, a number of new or altered access points are proposed from public roads, to enter the powerlines access tracks.

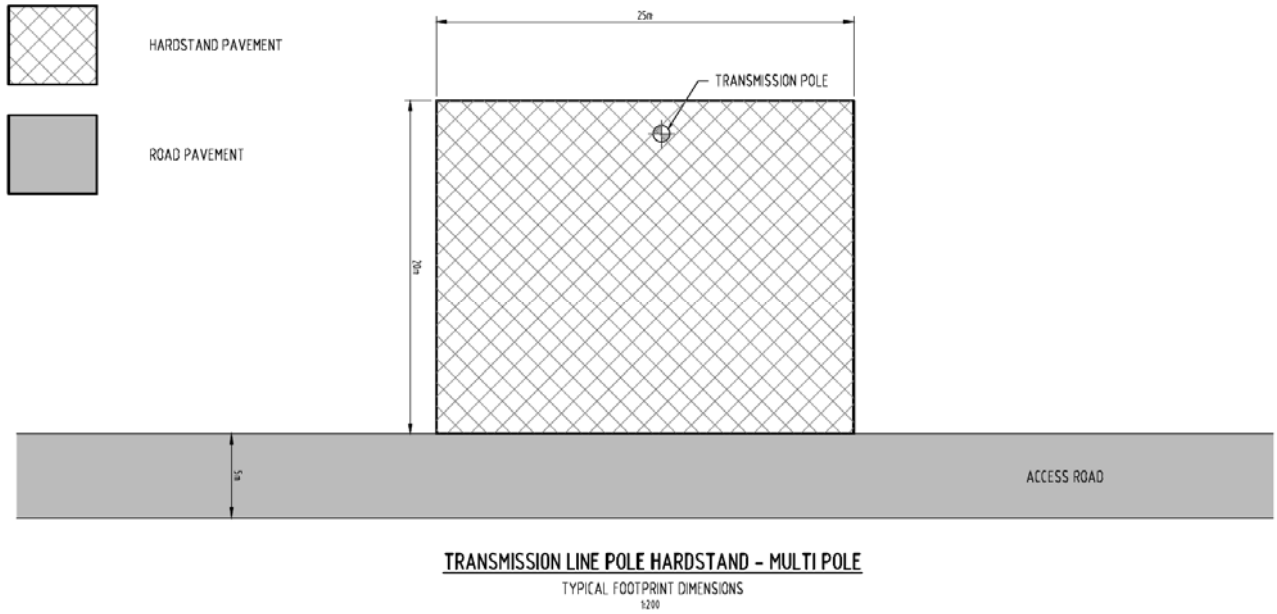


Figure 4 – Typical 132 kV Powerline Hardstand and Access Track *(Source: Catcon 2015)*

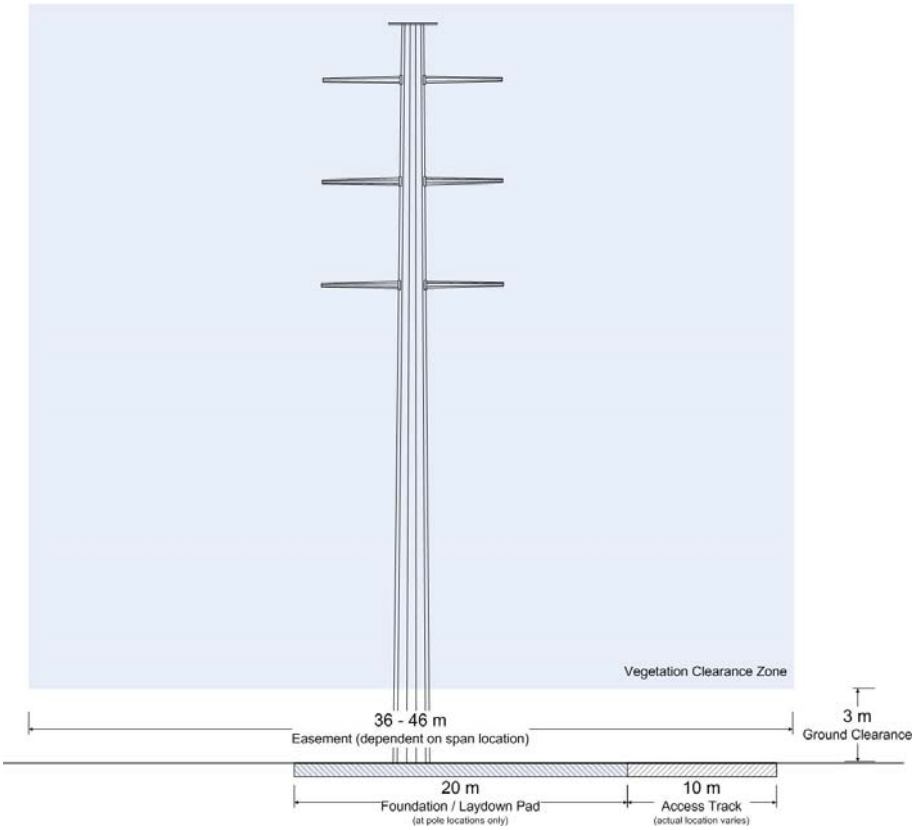


Figure 5 – Typical 132 kV Powerline Cross Section *(Source: SHWFPL, 28/04/2016)*

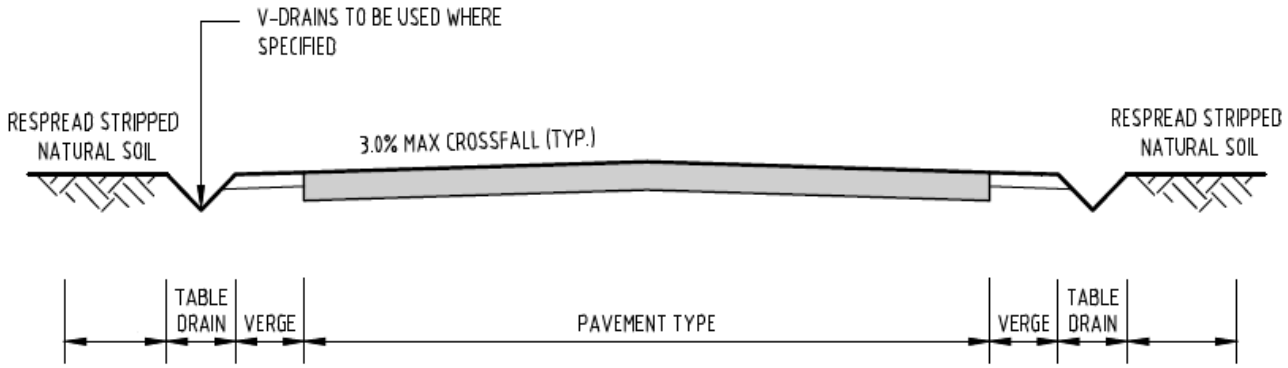


Figure 6 – Typical Powerline Access Track Cross Section *(Source: Catcon, 2015)*

2.3.3 Key construction activities

The key construction management activities to be undertaken are as follows:

- Site mobilisation and the erection of temporary facilities for construction staff.
- Surveying the pole locations, project features, and work areas.
- Upgrading or construction of temporary and permanent access roads to accommodate heavy vehicle movements during construction.
- Construction of hardstands required for cranes during the pole erection and stringing machine hardstands.
- Clearing activities of the alignment (where required).
- Fencing and signage.
- Construction of foundations with anchor bolts installed in mass concrete.

- The powerline will be constructed on steel poles and be of single or twin circuit duplex conductors configuration with one or two Optical Ground Wire (depending on section of alignment).

Transport of large items to the subject site is anticipated to be via the Hamilton Highway, Glenelg Highway, Rokewood-Skipton Road, and Skipton Road in accordance with VicRoads and Council requirements. It is not anticipated that any road upgrades (apart from the new access points identified on Appendix G) will be required.

2.3.4 Key operational activities

The operation of a WEF is considered to be 'self-sufficient' with the operational activities limited to monitoring, maintenance and repairs.

The operational life of the SHWF WEF is anticipated to be 25 years.

2.3.5 Key decommissioning activities

The powerlines will be decommissioned upon cessation of all WEF generation, if no further use for the lines is required as part of the regulated or non-regulated network to support new generation or load.

2.4 Terminal Station

2.4.1 Main components

The proposed terminal station will be located adjacent to the Lower Darlington Road frontage of the site and on land at the intersection with Smiths Road. It will occupy approximately 7 ha of the site.

The main built form components of the terminal station will involve:

- A new 500kV switchyard located between the two existing lattice tower structures and to the north of the existing 500kV lines.
- New lattice tower structures in the 500 kV lines to divert the lines into the 500 kV switchyard of the terminal station site. In effect, one or both circuits of the existing 500 kV line will be redirected through the new 500kV switchyard.
- A 132 kV/500 kV substation located adjacent to the eastern side of the 500 kV switchyard will raise the voltage of the wind farm output from 132 kV to 500 kV for connection to the grid.
- Two control rooms, one for the 500 kV switchyard and one for the 132 kV/500 kV substation.
- Access from Lower Darlington Road, including upgraded existing entry and onsite roadworks and carparking.
- Emergency egress to Smiths Road.
- Site screening – tree planting (possible earth mound).
- Temporary construction facilities that will be removed after construction is complete.

The concept design plans for the terminal station are contained in Appendix H.

2.4.2 Ancillary components

Night lighting and security alarms are required for high voltage facilities but these will be designed to minimise disturbance to surrounding community and habitat. Night lighting will be directed inwards and downwards and will only be operated at full illumination for security purposes and if works are occasionally required at night times.

Limited amenities are required during operation as there will be limited people attending the site.

Water will be supplied by rainwater tanks collected from the terminal station and topped up as necessary. An additional water supply will be provided as a reserve for fighting purposes. This could involve an on-site storage tank of up to 25,000 litres capacity and would only be used for fighting fires in areas surrounding the terminal station.

The control rooms are proposed to be located respectively next to the switchyard and close to the substation transformers. They will each house a small office, amenities, a workshop and storage area. All the low voltage equipment, such as the protection and control equipment and batteries, power and air-conditioning services will also be installed in the control rooms.

The existing access point from Lower Darlington Road will need to be upgraded for the construction stage of the project. An upgraded entry at the point of the existing double gates will provide access for most vehicles entering the site but a wider temporary entrance may need to be formed for the delivery of the large transformer(s). A secondary emergency egress will be provided to Smiths Road near the intersection with Lower Darlington Road, away from the overhead lines (in accordance with CFA recommendations).

Construction of the access roads will include grading and removal of topsoil, placement and compaction of a suitable crushed road base and installation of appropriate drainage. A hardstand area will be provided for construction site office car parking, as shown on the concept plans.

Parts of the land within the switchyard will be covered with gravel while areas around the facility will be re-vegetated.

Additionally, it is proposed to upgrade of the existing intersection of Lower Darlington Road and Camperdown-Lismore Road to cater for increased traffic movements during the construction phase and to enable safe passage for all vehicles using this intersection. A concept design has been prepared to convert the existing dual intersection points to a single “T” intersection with allowance for safe vehicle movements consistent with relevant road design standards.

2.4.3 Key construction activities

The key construction management activities to be undertaken are as follows:

- Site mobilisation and the erection of temporary facilities for construction staff.
- Surveying the switchyard set-out points, project features, and work areas.
- Upgrading or construction of temporary and permanent access roads.
- Clearing and grading activities for switchyard and substation platforms.
- Fencing and signage.
- Excavating and installing switchyard and substation foundations including those for the two control rooms and installing cabling in cable trenches for the switchyard and substation.
- Assembling and erecting equipment and gantry steelwork.
- Assembling and erecting of high voltage equipment.
- Assembling and erecting the 132 kV/500 kV transformers at the substation.
- Construction of two control rooms.
- Fitting out of control rooms with protection panels.
- Stringing conductors and ground wires.
- Testing and commissioning of all switchyard and substation high voltage and low voltage equipment.
- Connection of the 500 kV line and the 500 kV switchyard.
- Cleanup and reclamation of affected areas.
- Construction site de-mobilisation.

Transport of large items to the subject site is anticipated to be via the Hamilton Highway and – Camperdown-Lismore Road in accordance with VicRoads and Council requirements. Road works are required to the intersection of Camperdown-Lismore Road and Lower Darlington Road.

2.4.4 Key operational activities

The operational arrangements of the 500 kV switchyard and 132 kV/500 kV substation are still to be confirmed. The switchyard and the substation will be remotely controlled and do not need operations staff to be based at the site. Staff will only make occasional visits as required for the purpose of inspection and maintenance. Amenity facilities will be provided as part of the two control rooms.

The equipment in the switchyard and substation will be energised at 500 kV and 132 kV. In compliance with High Voltage regulations, the terminal station will be securely fenced. Outages of the 500 kV circuits or the 132 kV WEF connection may be required from time to time, usually in accordance with scheduled maintenance events or when works are required at other locations in the electrical system.

The 132 kV/500 kV transformer(s) produce noise that will be heard at close distances, and tonal noise may be audible at further distances. The noise level and audibility of any tonal noise decrease with distance from the transformers and an acoustic assessment of the terminal station noise impacts and mitigation has been prepared.

2.4.5 Key decommissioning activities

The contestable component (132/500 kV substation) will be decommissioned upon cessation of all WEF generation, if no further use for the substation is required as part of the regulated or non-regulated network to support new generation or load connections.

2.5 Quarry

2.5.1 Main components

The proposed quarry will have the following features:

- Quarry pit to cater for the volume of basalt required (approximately 1.2 M tonnes).
- An area of approximately 450 m by 300 m and a depth of up to 8 m (approximately).
- Rock crushing and screening area.
- Stockpiling areas.
- A water dam for surface water management and sediment control.
- Internal quarry access tracks.
- Overburden and top soil storage areas.

The indicative layout of the quarry is shown on the plan in Appendix I.

The design of the proposed quarry has been based on the following considerations:

- Suitable material is available for extraction.
- At least one side of the quarry is at current grade as to allow the pit to drain and to prevent water ponding in the excavation during or after extraction.
- Post extraction, the quarry will be remediated and returned to farmland. Therefore, batter slopes will be no steeper than 5H in 1V, which will be generally consistent with the gently undulating nature of the existing terrain.
- Operation of the proposed quarry does not conflict with the proposed wind turbine areas of internal access tracks.

- Feedback from referral agencies (DELWP, Powercor, Southern Rural Water, Heritage Victoria and the Pyrenees Shire Council) and the property owner.
- Minimisation of the potential risk to the environment i.e. groundwater and native vegetation.

It is estimated that the quarry will produce up to approximately 1.2 million tonnes of crushed rock. It is estimated that the volume of material required equates to up to approximately 380,000 to 480,000 cubic metres. The exact quantities of these materials will be confirmed after detailed design although the amount of material to be removed will not exceed 1.2 million tonnes.

Upon cessation of construction of the WEF, the quarry would be rehabilitated to return the site to agricultural use. The rehabilitated landform will be designed to ensure that water does not collect as a permanent waterbody and generally drains naturally.

2.5.2 Ancillary components

Ancillary components include:

- Portable site office, weighbridge and amenities to be located within the crushing and screening area for the life of the quarries.
- A generator for the powering the site office and amenities.
- Car parking areas, work shop and amenities building.
- Site security fencing.

2.5.3 Key construction activities

Up to approximately 1.2M tonnes of crushed rock will be required over approximately 3 years for the entire construction phase of the WEF, as such the construction of the quarry is required to be established prior to the commencement of the WEF.

The key construction management activities to be undertaken are as follows:

- Construction of the internal quarry site haul roads with imported material.
- Construction of the water dam and associated drains.
- Remove top soil from the crushing and screening area and initial extraction area.
- Initial extraction will commence in the west of the site with proposed crushing and screening area hardstand to be constructed.

Crushing and screening will be conducted with mobile crushers and screens (no fixed plant is proposed as part of the quarry).

2.5.4 Key operational activities

It is proposed to operate the quarry for the duration of the WEF construction period using conventional hard rock quarrying techniques. The process of the extraction will be dependent on project demands, starting in the west of the proposed excavation area and continuing to the east (with benches of approximately 2-3 m).

The production rates from the proposed quarry have been planned to align with the indicative scheduling of the SHWF WEF construction which anticipates a large proportion of the total quarry output to be required within the first 7-12 months of the quarry operating. This is primarily due to the construction of the access tracks which require a large amount of material.

Further details on the proposed operational activities for the quarry is described in Section 2.1 of the referral form (Appendix A).

2.5.5 Key decommissioning activities

At the completion of the life of the proposed quarry, the site will be rehabilitated to ensure the final land form is consistent with the following principles:

- a final profile that would generally blend into the surrounding landscape and is suitable for return to pasture; and
- naturally draining to ensure water does not pond within the area of extraction.

The basic steps include:

- Battering back the excavated rock slops to no steeper than 5H in 1V, with weathered rock or crusher reject rock used to fill wedges against the excavated rock slopes.
- The top surface of weathered rock will be covered with a layer of top soil which is proposed to be sourced from the stockpile area from the initial stages of the quarry.
- Topsoil area will be grass seeded.

2.6 Potential Variables in the Design

2.6.1 Disturbance Footprint

The turbine layout and other civil and electrical infrastructure impact areas have been refined for the projects to ensure they accurately represent what will be required to construct the Project. The design assumptions used for the infrastructure footprint have been determined using the most conservative design outcomes for:

- the potential wind turbine options available within the specified dimensions, including craneage requirements (i.e. for turbine foundations, hardstands, access road widths and turn swept-paths);
- topography, hydrology and geotechnical conditions (which influence the level of cut and fill and drainage); and
- period of construction (i.e. ground breaking activities during wetter periods are likely to lead to an increased disturbance area).

Table 3 – Wind Energy Facility Footprint Assumptions

Infrastructure	Design Assumptions
Access Tracks	General – 12.5 m wide Trunk – 13.5 m wide
Underground Cable	3 m wide
Hardstands and Foundations	50 m x 70 m including foundations
Temporary Construction Facilities (Concrete Batching Plant / Staging Areas / Compound)	2 x 100 m x 100 m (north/east area and south) 1 x 130 m x 250 m construction compound (west area) 1 x 100 m x 200 m (south area)
Permanent Maintenance Facility	1 (100 m x 40 m)
Substations / Switchyards	4 (100 m x 100 m)
Internal Powerlines	Ground clearance - 10 m wide Aerial clearance – 30 m wide
Road Upgrades	13.5 - 15m wide

The maximum disturbance footprint of the external overhead powerlines comprises approximately 83.4 ha which results from earthworks to accommodate pole foundations and ancillary powerlines installation activities including the creating of access tracks (up to 10 m wide) and hardstands. Additionally, all vegetation which has a height greater than 3 m within a 36 m to 46 m corridor has been assumed to be lost to ensure appropriate

safety clearance has been taken into consideration. However, some vegetation may not be required to be removed (e.g. depending on topography) or only lopped.

The development of the quarry will only occupy approximately 57 ha of land, whilst the terminal station development will impact on 7 ha.

The actual area of disturbance associated with the construction and operation of the projects will be optimised for minimal impact pending final major procurement decisions, detailed civil and electrical design and timing of project construction. As such, the direct impact quantified presented are considered to be the maximum impact, with any in-direct impacts prevented through the use of proposed mitigation measures (discussed further in Section 4 of this report).

2.6.2 Micro-siting of Turbine Locations

The turbine layout shown on Amended Wind Energy Facility Indicative Layout Plans (Appendix F) has been developed using the results of the specialist assessments undertaken, wind monitoring data collected and preliminary construction assessment.

Minor modification to the layout may occur in the future based on detailed design. In accordance with Condition 1 of Planning Permit No. PL-SP/05/0548, before the development starts, development plans which are generally in accordance with the indicative layout plans, must be prepared to the satisfaction of the Minister for Planning. It is anticipated that this requirement will remain unchanged as a result of the amendment process.

2.6.3 Turbine Selection

The final turbine selection will be dependent on commercial negotiations; however, the maximum turbine dimensions outlined in Section 2.2 of this report will not be exceeded. Furthermore, specialist assessments undertaken to inform the referral and the preliminary documentation are based on a worst case design/output scenarios for each study.

3. Impacts to MNES

The following three matters of national environmental significance have been identified in the Project area. The potential impact on these species is the reason for the Project is considered a 'controlled action' under the EPBC Act:

- Striped Legless Lizard (*Delma impar*) - vulnerable;
- Golden Sun Moth (*Synemon plana*) - critically endangered; and
- Natural Temperate Grassland of the Victorian Volcanic Plain ecological community - critically endangered.

Building upon the information provided in the referral documentation (Appendix A) this section provides a summary of the proposed impact on MNES by the Project.

Furthermore, this section is supported by Ecology and Heritage Partners (EHP) MNES summary report contained in Appendix J. The report provides a summary of the extensive survey and assessments undertaken to understand the ecological values of the Project area and to quantify the proposed impacts on MNES (including figures).

3.1 Striped Legless Lizard

Targeted surveys were undertaken for Striped Legless Lizard across the proposed WEF (including road upgrades), as part of the selection of the quarry site, external overhead powerlines and terminal station site between 2012–2014. Further details of the surveys undertaken, including their adequacy, are contained in Appendix J.

The targeted surveys recorded species along Stockyard Hill Road and Dunnets Roads; however no additional individuals were detected throughout project area.

The proposed road upgrades (particularly along Stockyard Hill Road and Dunnets Road) will result in the direct loss of approximately 2.53 ha of known grassland Striped Legless Lizard habitat. In addition, it is predicted that up to 39.63 ha of modified grassland (low to medium quality habitat) for Striped Legless Lizard habitat is proposed to be directly impacted as a result of the construction of internal access tracks and at the turbine hardstand/foundation locations.

The grassland habitat across the WEF infrastructure area is considered to be highly modified and subject to ongoing land use practices (principally grazing) and is connected to extensive areas (i.e. it forms part of an area greater than 0.5 ha) within the agricultural landscape. The areas of available habitat (not impacted by the WEF) are consistent with the areas proposed to be impacted (e.g. is similar habitat) and support the species' breeding and dispersal requirements in the future. It is therefore considered that the breeding and dispersal capabilities of any extant population on the WEF are unlikely to be significantly impacted given the highly localised nature of the proposed works.

The vegetation along the road reserves of Stockyard Hill Road and Dunnets Road (where the proposed road upgrades would occur) is connected to extensive areas within the agricultural landscape. This includes habitat which is likely to support the species' breeding (including the areas proposed as potential on site offset sites (see Section 5.2)). Therefore, the breeding and dispersal capabilities of this population are unlikely to be significantly impacted given the highly localised nature of the proposed road works.

All potential impacts to Striped Legless Lizard by the Project have been identified and are known. The impacts are not likely to lead to any irreversible impacts to the species.

Further information on the potential impacts of the Project on Striped Legless Lizard, including the acceptability of the proposed impact, is contained in Appendix J.

3.2 Golden Sun Moth

Targeted Golden Sun Moth surveys were conducted in areas of potentially suitable habitat, principally in areas comprising a high percentage cover of native grasses, and across areas that support a mix of native and exotic grasses. Specifically, this included areas associated with the WEF and external overhead powerlines. Further details of the surveys undertaken, including their adequacy, are contained in Appendix J.

A large number of Golden Sun Moth were detected during targeted surveys undertaken across a single property (Crown Allotment 23A, 23B, 24A and 24B Parish of Eurambeen) located in the north-west of the proposed WEF site. Given the species was detected during the 2011/12 monitoring period within areas proposed for development, further detailed surveys were undertaken during the 2012/13 monitoring to refine the extent of species distribution across the property. Additional surveys and habitat assessments were undertaken to inform the design of the internal access tracks and turbine locations to ensure that, where possible, suitable Golden Sun Moth habitat was avoided and minimised.

A total of 827 Golden Sun Moth were recorded across the property during the 2012/13 monitoring period (Appendix J), including one female observed in December 2012. The entire property supports high quality grassland habitat for the species and therefore is proposed to be secured as an on-site offset (see Section 5.1, Appendix J and Appendix K).

As presented in the referral documentation (Appendix A), the WEF has the potential to impact approximately 1.57 ha of known Golden Sun Moth habitat (a reduction of approximately 1.1 ha compared with the approved WEF). The other project components were not found to have any impacts on Golden Sun Moth or associated habitat.

It is considered that the impacts to Golden Sun Moth in the context of the proposed project, constitutes a very small proportional impact across the species known range. Furthermore, the proposed impacts to habitats will be adequately compensated through the proposed on site offset site, resulting in an overall net benefit to the species (see Section 5.1, Appendix J and Appendix K).

Further information on the potential impacts of the Project on Golden Sun Moth, including the acceptability of the proposed impact, is contained in Appendix J.

3.3 Natural Temperate Grassland of the Victorian Volcanic Plain

NTGVVP was recorded during detailed ecological surveys and primarily occurs along road reserves. Further details of the surveys undertaken, including their adequacy, are contained in Appendix J.

Specifically, three patches of NTGVVP comprising a total of 0.08 ha are proposed to be disturbed as part of the WEF. A total of 0.128 ha of NTGVVP is proposed to be impacted by the proposed external overhead powerlines. All potential impacts to NTGVVP have been identified and are known.

The project will result in the total direct impact of 0.208 ha of the NTGVVP ecological community and does not to meet the significant impact thresholds outlined in the significant impact guidelines for this ecological community. Furthermore, there are not considered to be any indirect impacts to NTGVVP, as a result of appropriate mitigation measures being implemented during all stages of the Project (see Section 4 of this report and Appendix J).

As such, with the exception of the permanent removal of a small area of NTGVVP, the proposed action is not likely to lead to any irreversible impacts to this listed ecological community. Further information on the potential impacts of the Project on NTGVVP, including the acceptability of the proposed impact, is contained in Appendix J.

Given the conclusion that the Project is not considered to have a significant impact on NTGVVP, an offset management strategy is not considered warranted for this ecological community and has not been prepared. However, appropriate mitigation measures will be undertaken during all stages of the project to avoid, and where possible, further minimise impacts to NTGVVP (see Section 4 of this report and Appendix J).

4. Proposed Avoidance, Management and Mitigation Measures

4.1 Avoidance measures

The Amended WEF was designed:

- in response to the spacing required for larger rotor diameters to reduce predicted turbulence;
- to ensure compliance with shadow flicker and noise conditions of Planning Permit No. PL-SP/05/0548; and
- to improve project efficiencies and avoid / minimise impact on biodiversity (e.g. significant species or habitat).

Specifically, the revised project has resulted in the avoidance of ecological impacts compared with the Permitted WEF. A comparison of impacts to significant species and ecological communities between the permitted WEF and the amended WEF is as follows:

- A reduction of approximately 0.49 ha of NTGVVP proposed to be impacted, including avoidance of remnant patches;
- The avoidance of populations of White Sunray and Matted Flax-lily;
- The avoidance of a small population of Plume Swamp Wallaby-grass, and Arching Flax-lily;
- A reduction in impact of small population of Golden Cowslips;
- The avoidance of scattered remnant trees along Mt Emu Settlement Road; and
- A reduction of approximately 1.1 ha of confirmed Golden Sun Moth habitat.

SHWFPL have avoided and minimised the removal of remnant native vegetation and areas supporting EPBC Act-listed listed species and communities (e.g. sensitive sites such as roadsides and waterways) by locating the external overhead powerlines in areas of exotic vegetation / areas devoid of ecological values. Furthermore, the alignment selection was informed by a Multi-Criteria Analysis, which was used to select route options (which were further refined with detailed flora and fauna studies), as well as extensive consultation with government agencies and private landowners.

Ecological values were also considered as part of the site selection for the proposed Quarry and Terminal Station, which has resulted in the selection of sites which will not have a significant impact on MNES.

As discussed in Section 2.6.1, the actual disturbance area associated with the construction and operation of the projects will be optimised for minimal impact pending final major procurement decisions, detailed civil and electrical design and timing of project construction.

4.2 Management Measures

The state environment and planning approvals, issued and anticipated, include a number of conditions relating to management measures including requirements for the preparation of Environmental Management Plans and Native Vegetation Management Plans, requirements for fencing around retained native vegetation / tree protection zones etc. These conditions are described in more detail in Section 9.

Furthermore, it is proposed that the following general mitigation measures, identified in Appendix J, will form part of the EMPs for specific areas of sensitivity throughout the project site, as relevant:

- The avoidance of areas supporting of NTGVVP at sensitive sites such as roadsides and waterways;
- Further micro-siting techniques, including fencing retained areas of native vegetation as no-go zones will be undertaken for MNES habitat areas to be retained.
- Information highlighting the importance of MNES communities, populations and habitats, together with the actions that will be implemented to avoid and minimise impacts, will be included in site inductions;

- Signs highlighting the importance and significance of MNES will be erected around the project, specifically at the entrance to the Golden Sun Moth offset site, and within site offices.
- Site operations, including ground disturbance, stockpiling of soils and storage and operation of plant and machinery, will not occur within an area of 12 m radius patches of native vegetation (including NTGVVP);
- The 12 m 'no go zone' will be protected by fencing. Signage on the fencing will state that the area is not be disturbed;
- The spread of weeds and pathogens will be minimised by the following:
  - Vehicles entering and exiting the site will be visually inspected for weeds, and where required vehicles will be cleaned prior to exiting the site;
  - All vehicles exiting the site will pass through a wheel wash to remove soil and weeds prior to leaving the site;
  - Site personnel will be made aware of potential risks associated with removing soil and weeds from the site; and
  - Weeds will be controlled using chemical products with herbicidal action registered by the Australian Pesticides and Veterinary Medicines Authority. Any products used will be applied by personnel experienced and trained in the application of such products.
- Post construction works all grasses and shrubs will be encouraged to regrow within the easement with only a narrow grassed access track required for maintenance and emergency situations;
- All contractors will be aware of ecologically sensitive areas to minimise the likelihood of inadvertent disturbance to areas marked for retention. Habitat zones (areas of sensitivity) will be included as a mapping overlay on all relevant construction plans;
- Construction stockpiles, machinery, roads, and other infrastructure will be placed away from areas supporting native vegetation and/or other ecological sensitive areas;
- Soil disturbance and sedimentation into drainage lines / dams will be avoided or kept to a minimum, to avoid, or minimise impacts to fauna habitats;
- All contractors will be made aware of ecologically sensitive areas to minimise the likelihood of inadvertent disturbance to areas marked for retention; and
- Habitat zones (areas of sensitivity) will be included as a mapping overlay on construction plans.

The following section outlines additional and/or more specific mitigation measures which SHWFPL are committed to implementing to ensure impact on MNES is avoided and minimised.

4.2.1 Striped Legless Lizard

Appendix J identifies specific mitigation measures to further minimise the impact of the Project on known Striped Legless Lizard populations and associated habitat, during detailed design and construction of the Project, including:

- Where possible, access track widths be further reduced, including as part of a commitment as part of the OMS that this will be investigated further;
- Preparation of a Striped Legless Lizard OMS for the site (see Section 5.2); and,
- Fencing and/or bunting will be erected around works areas along Stockyard Hill Road and Dunnets Road to restrict impacts on known habitat.

4.2.2 Golden Sun Moth

Specific measures to avoid and minimise impacts to the Golden Sun Moth habitat will be incorporated into the Golden Sun Moth OMS (as well as the relevant EMPs) as identified in Appendix J, including:

- Further minor adjustments to the infrastructure layout (at the detailed design level) will, where possible, be undertaken to reduce the area of impact. This may be through the use of micro-sited track routes or

configuration of construction areas on a case-by-case basis to minimise the overall impact of 1.57 ha of disturbance;

- Where possible, access track widths may be further reduced, and there is a commitment as part of the OMS that this will be investigated further; and
- Reduction in turbine construction area footprints may be achieved within the proposed Golden Sun Moth on the onsite offset site;
- Preparation of a Golden Sun Moth OMS for the site (Section 5.1).
- Fencing and/or bunting will be erected around works areas in within the proposed Golden Sun Moth on site offset site to restrict impacts on habitat;
- Where areas are designed for rehabilitation after construction, this will include replanting of locally indigenous species; and
- Implement all aspects associated within the Golden Sun Moth OMS during the operational phase.

4.2.3 Natural Temperate Grassland of the Victorian Volcanic Plain

The general measures identified in Section 4.2 will appropriately mitigate impacts, and where possible, further minimise impacts to NTGVVP (Appendix J).

5. Offsets

As outlined in Section 3 the WEF is likely to impact Golden Sun Moth and known habitat and Striped Legless Lizard habitat. As such, SHWFPL propose a number of measures to ensure there is no net impact on these species, including:

- the use of a Conservation Management Plan on the property where the Golden Sun Moth and the known habitat have been found, it provides an opportunity for a defined offset area to protect the Golden Sun Moth and its 'known' habitat as a conservation reserve in perpetuity, resulting in a net benefit to the species.
- secure an on-site offset (including the preparation of a Conservation Management Plan) or an off-site offset where an existing population is known.

The proposed Golden Sun Moth OMS and Striped Legless Lizard OMS are contained in Appendix L and Appendix K, on which the Conservation Management Plans would be based. The strategies include how SHWFPL has and will continue to follow the 'avoid, minimise and offset' approach. It also provides an evaluation of the suitability of the proposed offset, and a management framework to ensure that the Conservation Management Plans (and therefore management of the offset sites) address the required objective set by each OMS.

As identified in Appendix J, the management objective within each OMS is to prevent any decline in the overall vegetation and habitat conditions. It is essential that management is undertaken to an adequate standard, which manages key threatening processes such as pest plant and animal control, and biomass control. Other requirements such as monitoring and reporting are important management components which will be implemented over a 10 year period within each OMS.

The overall objectives of each OMS are to:

- Protect and secure the environmental values of the site, ensuring that indigenous species survive;
- Maintain and enhance the biodiversity of the site by maintaining natural ecosystem processes;
- Maintain and if possible expand Striped Legless Lizard and Golden Sun Moth populations and associated habitats;
- Control and if possible eliminate populations of pest plants and animals; and
- Achieve a high level of ecologically sound on-ground management.

Furthermore, whilst the conservation of MNES is considered the first priority, the overall aims and formulation of management from a farming perspective is for the land to be as productive as possible, without compromising ecological values (e.g. the offset sites will be managed for MNES conservation by using 'farm' management tools).

The following section describes the proposed offset package to compensate for the residual significant impacts on these species.

5.1 Golden Sun Moth

A copy of the proposed Golden Sun Moth OMS is contained in Appendix K and aims to:

- Protect and secure the environmental values of the site, ensuring that indigenous species survive;
- Maintain and enhance the biodiversity of the site by maintaining natural ecosystem processes;
- Maintain and if possible expand Golden Sun Moth populations and associated habitats;
- Control and if possible eliminate populations of pest plants and animals; and
- Achieve a high level of ecologically sound on-ground management.

Golden Sun Moths are known to occur across approximately 120 ha of Crown Allotment 23A, 23B, 24A and 24B Parish of Eurambeen, within the proposed WEF site boundary. A total of 173 ha of this property is proposed to be used as an offset site for the species (i.e. a conservation covenant will be placed over the land). Given that the 173 ha will exceed the offset requirement for this Project, 9 ha of this site will be used to compensate for the removal of suitable habitat associated with the Project. In accordance with the EPBC Act Offset Assessment Guide, this area will meet the offset requirements associated with the proposed removal of Golden Sun Moth habitat. Further details on the suitability of these sites are contained in Appendix J and Appendix K.

SHWFPL is confident that the proposed Golden Sun Moth OMS will deliver a conservation outcome that will help maintain and improve the viability of the relevant species. Table 5 assesses the Golden Sun Moth OMS against the EPBC Act Environmental Offsets Policy (summarised from the assessment provided in Appendix K).

Table 4 – Assessment of Golden Sun Moth offset against principles in the EPBC Act Environmental Offsets Policy

Principles for suitable offsets	Assessment
Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.	Golden Sun Moth is known to occur across approximately 120 hectares of the entire 263 hectare offset property. A total of 173 hectares is proposed to be secured as an offset property for the species (i.e. a conservation covenant will be placed over the 173 hectares). In accordance with the EPBC Act Offset Assessment Guide, given that 173 hectares will exceed the offset requirement (i.e. 1.57 hectares of GSM habitat) only nine hectares will be used to compensate for the removal of suitable habitat associated with this project.
Be built around direct offsets but may include other compensatory measures.	No additional compensatory measures are proposed with the exception of those mitigation measures outlined in Section 4 and the associated land management costs listed within of Appendix C of Appendix K.
Be in proportion to the level of statutory protection that applies to the protected matter.	In accordance with the EPBC Act Offset Assessment Guide, if managed appropriately (as planned), the offset site that comprises nine hectares of high quality habitat will exceed the offset requirements associated with the proposed removal of 1.57 hectares of Golden Sun Moth habitat as part of the development.
Be of a size and scale proportionate to the residual impacts on the protected matter.	In accordance with the EPBC Act Offset Assessment Guide, given that 173 hectares will exceed the offset requirement (i.e. 1.57 hectares of Golden Sun Moth habitat) only six hectares will be used to compensate for the removal of suitable habitat associated with this project.
Effectively account for and manage the risks of the offset not succeeding.	Appropriate management actions detailed in Section 6 of Appendix K will be implemented for a 10 year period and are designed to maintain and enhance current Golden Sun Moth habitat within the offset site.
Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action).	This offset relates directly with the impacts to Golden Sun Moth habitat removed as part of the WEF and associated access tracks and turbine locations onsite within this proposed offset site.
Be efficient, effective, timely, transparent, scientifically robust and reasonable.	The proposed offsets will provide sufficient offset outcomes for the impacts to Golden Sun Moth as part of this project. The offset strategy will be supported by species population monitoring and habitat management for a minimum of 10 years (Section 6 of f Appendix K).

5.2 Striped Legless Lizard

A copy of the proposed Striped Legless Lizard OMS is contained in Appendix L. In accordance with the National Recovery Plan for Striped Legless Lizard (Smith and Robertson, 1999), the OMS aims to:

- Acquire baseline data at the OMS;
- Assess habitat condition including ecological and biological function, and

- Protect populations to maintain or improve population growth. On-ground site management will aim to mitigate threatening processes and thereby insure against extinction.

Three proposed offset sites are being considered as offset sites for the Striped Legless Lizard OMS, and include:

- Option 1 – Dunnets North Offset Site: 30 ha of habitat north of Dunnets Road (on site)
- Option 2 – Dunnets South Offset Site: 30 ha of habitat south of Dunnets Road (on site)
- Option 3 – Cressy (offsite)

It is SHWFPLs preference for an offset to be secured on-site (with a minimum of 43 ha secured across the two options). However, it is acknowledged that the on-site options (Options 1 and 2, or part thereof) are subject to confirming habitat and species during the next survey period (anticipated to be a condition of approval). If the onsite option is not deemed suitable then an off-site offset can be secured (e.g. Option 3).

In accordance with the EPBC Act Offset Assessment Guide (SEWPaC, 2012), these areas will meet the offset requirements associated with the proposed removal of GSM habitat. Further details on the suitability of these sites are contained in Appendix J and Appendix L.

SHWFPL is confident that the proposed Striped Legless Lizard OMS will deliver a conservation outcome that will help maintain and improve the viability of the relevant species. Table 5 assesses the Striped Legless Lizard OMS against the EPBC Act Environmental Offsets Policy (summarised from the assessment provided in Appendix L).

Table 5 – Assessment of Striped Legless Lizard offset against principles in the EPBC Act Environmental Offsets Policy

Principles for suitable offsets	Assessment
Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action.	The proposed onsite offset sites will protect a minimum of 43 hectares of land, comprising suitable habitat for the species. The protection of at least 43 hectares will meet the offset requirements associated with the proposed removal of 42.16 hectares of Striped Legless Lizard habitat as part of the development. This is based on the majority of impacted habitat (39.63 hectares) comprising highly modified pasture grasses. Given the offset sites adjoin areas of confirmed Striped Legless Lizard habitat along Dunnets road, which extends into the both offset sites, the ongoing habitat management and enhancement associated with the OMS will provide an overall conservation gain for the species. Potential additional measures such as direct seeding may also enhance the overall offset site through indirect conservation offsets for Striped Legless Lizard and associated habitats.
Be built around direct offsets but may include other compensatory measures.	Additional compensatory measures may also be undertaken in the form of direct seeding areas of unknown or modified habitats within the offset sites. Specific details have not been included but costings and preliminary information on the methods are available within Appendix L.
Be in proportion to the level of statutory protection that applies to the protected matter.	In accordance with the EPBC Act Offset Assessment Guide, if managed appropriately (as planned), this area will meet the offset requirements associated with the proposed removal of Striped Legless Lizard habitats as part of the development.
Be of a size and scale proportionate to the residual impacts on the protected matter.	The protection of up to a minimum of 43 hectares will meet the offset requirements associated with the proposed removal of Striped Legless Lizard habitats as part of the development given the highly modified nature of habitat being removed and the proposed management regime for the offset site, including habitat enhancements such as direct seeding (if undertaken).
Effectively account for and manage the risks of the offset not succeeding.	Appropriate management actions detailed in Section 6 of Appendix L will be implemented for a 10 year period and are designed to maintain and enhance current Striped Legless Lizard habitat within the offset site.
Be additional to what is already required, determined by law or planning regulations	This offset is solely for the impact to Striped Legless Lizard habitats associated with the WEF and associated projects.

Principles for suitable offsets	Assessment
or agreed to under other schemes or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action).	
Be efficient, effective, timely, transparent, scientifically robust and reasonable.	The proposed offsets will provide sufficient offset outcomes for the impacts to Striped Legless Lizard as part of this project. The OMS will be supported by species population monitoring and habitat management for a minimum of 10 years.

6. Social and Economic

6.1 Project Impacts and Benefits

The Project will result in economic, social and environmental benefits to the broader community. Stockyard Hill Wind Farm will produce approximately 1,900 GWh of electricity per year, the equivalent of energy to power an estimated 326,600 average households [1] (94,500 additional average households per annum, and an improvement in output of approximately 40% from the permitted WEF).

A key threatening process listed under the EPBC Act is the 'Loss of terrestrial climatic habitat by anthropogenic emissions of greenhouse gases'. The Project represents development of a renewable energy project that provides a low greenhouse gas emission form of electricity generation consistent with the Federal Government RET objectives. The Project will result in the displacement of approximately 1.9 million tonnes of CO_2 per year[2] (0.55 million tonnes more than the permitted WEF).

The development of the Project will provide economic benefits to the region by providing a source of non-rainfall dependent income to turbine host landowners, other infrastructure lessors and neighbouring dwelling owners. Once construction has commenced annual payments will be approximately $4.1 million depending on final turbine selection.

Since 2009, SHWFPL has conducted a community investment program that contributes $10,000 annually to communities surrounding the project area. The investment program supports projects and organisations which contribute to one or more of the following:

- Skills, education and training.
- Community safety, health and wellbeing.
- Sustainable population growth.
- Natural resource stewardship.
- Community events and activities that promote and enhance community connection.

To date, SHWFPL has supported local kindergartens, primary and secondary schools, local Landcare groups, Country Fire Authority and community and sporting groups in general.

This investment program will increase to $120,000 per annum on constructing of primary works commencing and will be used to assist similar groups with major projects that will enhance and build community capacity within the local region.

Furthermore, rates-in-lieu payments to the Pyrenees Shire Council will exceed $500,000 per year.

A socio-economic assessment (PB, 2008) was completed for the Project in 2008 and informed the original state planning permit application. Whilst there has been modifications to the project since this time the findings of the assessment are still considered relevant, including:

- At a regional, state and national level, the construction of the Project is expected to increase demand for goods and services and is expected to support employment opportunities during construction and operation of the Project (directly and indirectly).
- The Project will have a number of positive implications for business and industry development in region, including a greater private section investment in the Shire of Pyrenees and Shire of Corangamite, as new and emerging businesses seek to supply the increase in demand for goods and services. Furthermore,

[1] These calculations are based on a household average of 5.817 MWh per annum, sourced from ACIL Allen Consulting, A report to the Australian Energy Regulator Electricity Bill Benchmarks for Residential Customers, March 2015.
[2] These calculations are based on the formula provided in DELWP's "Greenhouse Benefits, A guide to calculating greenhouse benefits of wind energy facility proposals, April 2015".

there may be an increase in the number and type of businesses across new and existing development areas, reflecting increased demand for goods and services.

- At a regional level, the Project will stimulate additional economic activity during construction in non-residential building and construction trade services.
- The Project will increase the demand for local services and infrastructure. Supplies could be sourced from larger regional centres (e.g. Ballarat, Ararat, Portland, Warrnambool, Colac, etc.) and accommodation for the workers could be serviced through existing vacancy rates. The increase in demand presents an opportunity for growth for local and regional services and suppliers, including the upskilling of local workers.

Additionally, to inform the Preliminary Documentation an assessment of the employment impacts has been undertaken (Jacobs, 2017). Using assumptions on the phasing of construction / capital expenditure over the construction and operational period of the Project the assessment was able to estimate the direct and indirect employment (measured in terms of Full Time Equivalents) generated by the Project. The findings of the assessment are outlined in Table 6.

Table 6 – Average Annual Employment FTEs (Jacobs, 2017)

Regional	Construction Phase (2016-2021)				Operations Phase (2022 onwards)			
	Direct (FTEs)	Indirect (FTEs)	Induced (FTEs)	Total (FTEs)	Direct (FTEs)	Indirect (FTEs)	Induced (FTEs)	Total (FTEs)
Victoria	475	439	305	1,219	51	34	23	108
Australia Total	596	681	691	1,968	46	57	67	171

The proposed use of an on- site quarry will provide further environmental and social benefits. Recently the region has seen a number of major projects developed with several more proposed including wind farms and the duplications of the Princes Highway and the Western Highway. In at least one project, the cartage of crushed rock from off-site quarries has resulted in community concern in relation to perceived impacts on road safety and damage to roads caused by heavy vehicles.

Additionally, these projects cumulatively place significant demand on crushed rock in the region. If this cumulative demand continues to grow, the price will increase potentially impacting the ability of local landholders to secure crushed rock for their properties and could also affect the feasibility of major projects, including the SHWF, endangering the employment opportunities that these projects may generate.

The establishment of a dedicated on-site quarry for the Project will enable potential impacts on the local community, including roads, traffic and local material supplies to be minimised.

The Project has the potential to have negative impacts on the local area during construction of the Project (e.g. traffic, emission of dust and construction noise). However, the conditions of the planning permit(s) are considered to adequately manage these temporary impacts during the estimated 36 month construction period.

Furthermore, planning permit conditions will ensure that any operational impacts will be managed to ensure there is no unacceptable adverse impacts on the local community (e.g. noise and shadow flicker limits, and landscaping requirements).

6.2 Stakeholder Engagement

6.2.1 Public

In order to better understand the community, research was conducted in 2012 including a Risk Assessment, Stakeholder Identification and Mapping, Baseline Socio-economic Assessment, Social Impact Assessment, Social Impact Management Plan and Community Needs and Resources Analysis.

The outcome of these assessments and reports guided the development of the SHWF Stakeholder and Community Engagement Plan and associated strategies to minimise risks and assist SHWFPL to meet the needs of the community through the development of the SHWF.

The Stakeholder and Community Engagement Plan outlines community and government (local, state and federal) areas of interest shaping on the way SHWFPL operate and engage with the project stakeholders. The plan is guided by the Principles, Commitments and Values which form Origin's Compass.

A summary of these plans, including the engagement actions undertaken and planned is provided in the following sections.

Additionally, a Stakeholder Engagement Plan has been prepared (as part of the Endorsed Work Plan) to assist SHWFPL to consult and communicate with stakeholders about the development and operation of the quarry. In particular the plan has been developed in line with the relevant extractive industry guidelines and considers the scale, nature and potential community related aspects of the quarry.

The plan includes discussion of:

- Consultation undertaken to date
- Identifies affected communities and stakeholders
- The overall quarry engagement strategy
- Consultation planned and achieved for the development and approvals phase
- Proposals for communication and engagement measures to be employed during the operational phase.

The plan also includes a proposal for registering, documenting and responding to complaints and other communications from the community in relation to the quarry.

Since the commencement of the project, SHWFPL has been communicating, informing and listening to the local community (including the host landowners, neighbours (within 2 km of a permitted turbine), objectors of original planning permit application, the wider community, and the Pyrenees Shire Councillors). Engagement has been undertaken through a number of forums[3], including:

- Operating a project specific website providing information and updates.
- Operating a project specific 1800 phone number for community members to call for further information.
- Distributing project newsletters on a quarterly (or otherwise as appropriate given the level of development progress) basis distributed through the local postal service.
- Briefings of the councillors and officers of the local councils (Pyrenees and Corangamite) on a quarterly (or otherwise as appropriate given the level of development progress) basis.
- A dedicated full-time SHWFPL project representative is regularly on-site to meet face-to-face with landowners and the general community regarding the project, including meeting with all landowners (host landowners and neighbours with 2 km of a permitted turbine) several times though all stages of the planning process.

SHWFPL also regularly advertises and provides information via the local media through advertisements and media articles; it has also sponsored the local community calendar which features in the local paper.

Additionally, Figure 7 outlines the timeline of specific stakeholder engagement activities undertaken since the WEF Planning Permit PL-SP/05/0548 was issued in 2010. These are in are in addition to the 'business as usual' engagement activities undertaken as part of the normal development activities regarding the SHWF.

[3] This consultation continues to be undertaken as part of the projects on-going community engagement activities.

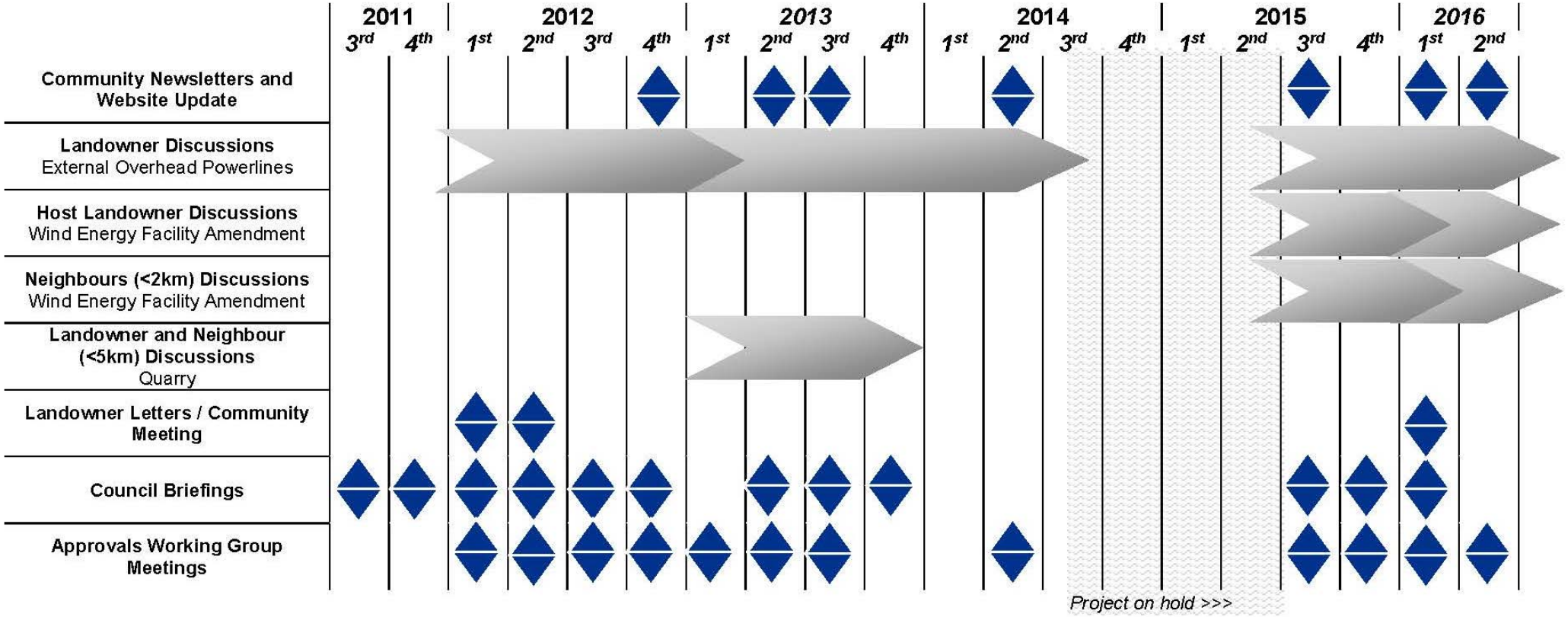


Figure 7 – Stakeholder Engagement Timeline

6.2.2 Agencies

It has been important to work with government stakeholders through the various development stages of the Stockyard Hill Wind Farm and Related Projects, to obtain a common understanding of the key issues of the different agencies, the different approval requirements and the level of detail required for assessments and approval applications.

An Approvals Working Group was established in March 2012 to provide guidance on approval related matters for all components of the Project. The group originally met on a four week cycle; however this has now moved to a milestone basis. All members of the Approvals Working Group were invited to review a draft version of this planning permit amendment application.

The key agencies that form the Approvals Working Group include:

- Aboriginal Victoria (AV)
- Australian Rail Track Corporation (ARTC)
- CFA
- Corangamite Catchment Management Authority (CCMA)
- Department of Economic Development, Jobs, Transport and Resources (DEDJTR) *(Earth Resources and Economic Development divisions)*

  Department of Environment, and Land, Water and Planning (DELWP) *(includes the Planning and Environment divisions)*
- Environment Protection Authority (EPA)
- Glenelg Hopkins Catchment Management Authority (GHCMA)
- Heritage Victoria
- Shire of Corangamite
- Shire of Pyrenees
- VicRoads
- VicTrack
- V-Line

Additionally, consultation has been undertaken with DOEE, Civil Aviation Safety Authority, Department of Defence, Airservices Australia and Central Highlands Water.

6.2.3 Indigenous stakeholders

Registered Aboriginal Party (RAP) applicants, the Wathaurung Aboriginal Corporation and Aboriginal Victoria, were consulted and participated in the fieldwork for preparation of the Cultural Heritage Management Plans (CHMPs) in accordance with the *Aboriginal Heritage Act 2006*.

Further detail on the CHMPs for the area is contained in Section 9.4.

7. Ecological Sustainable Development

The National Strategy for Ecologically Sustainable Development (1992) sets out the policy framework for the Australian Government to make decisions and take actions to pursue ecologically sustainable development (ESD). The National Strategy defines ESD as '*development which aims to meet the needs of Australians today, while conserving our ecosystems for the benefit of future generations… to develop ways of using those environmental resources which form the basis of our economy in a way which maintains and, where possible, improves their range, variety and quality. At the same time we need to utilise those resources to develop industry and generate employment*' (Commonwealth of Australia, 1992).

The principals of ecological sustainable development, as defined by the EPBC Act, are:

a) *decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;*

b) *if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;*

c) *the principle of inter-generational equity--that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;*

d) *the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;*

e) *improved valuation, pricing and incentive mechanisms should be promoted*.

Table 7 summarises the assessment of the Stockyard Hill Wind Farm and Related Projects against these principles.

Table 7 – Response to EPBC Act Principles

EPVC Act Guiding Principle	Response
Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.	The Project will provide social and economic benefits on a regional, state and national level. Whilst conditions of the current and anticipated state and federal approvals will adequately manage any potential adverse impacts. Economically, the Project is currently providing economic benefits to the area through lease and easement agreements. This economic stimulus will further increased once construction commences, and for the operational life of the Project. The WEF will produce approximately 1,900 GWh of electricity per year, the equivalent of energy to power an estimated 326,600 average households4 (94,500 additional average households per annum, and an improvement in output of approximately 40% from the permitted WEF).
If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.	The Project will not result in threats of serious or irreversible environmental damage, nor is a lack of full scientific certainty being used as a reason for postponing measures to prevent environmental degradation.
The principle of inter-generational equity--that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the	The potential impact to Golden Sun Moth, Striped Legless Lizard and Natural Temperate Grasslands of Victorian Volcanic Plain will be managed through the proposed mitigation and offset measures to ensure there is no net impact on MNES. The Project represents the development of a renewable energy project that provides a

[4] These calculations are based on a household average of 5.817 MWh per annum, sourced from ACIL Allen Consulting, A report to the Australian Energy Regulator Electricity Bill Benchmarks for Residential Customers, March 2015.

EPVC Act Guiding Principle	Response
benefit of future generations;	low greenhouse gas emission form of electricity generation consistent with the Federal Government RET objectives. The Project will result in the displacement of approximately 1.9 million tonnes of CO_2 per year.
The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;	The design of all components of the Project have considered potential impacts on MNES. Desktop and detailed field assessments have been undertaken (including targeted surveys). These assessments have been used to inform the different design stages of the Project, including site selection studies, multi-criteria analysis, and to inform the preparation of approval applications and referrals. The state environment and planning approvals, issued and anticipated, include a number of conditions relating to management measures including requirements for the preparation of Environmental Management Plans and Native Vegetation Management Plans, requirements for fencing around retained native vegetation / tree protection zones etc.
Improved valuation, pricing and incentive mechanisms should be promoted.	This does not apply to the project.

8. Environmental Record of Person(s) Proposing to Take the Action

SHWFPL is a subsidiary of Origin Energy (Origin); as such this section has been prepared based on the environmental record of Origin.

8.1 Record of responsible environmental management

Origin Energy believes that it has a satisfactory record of responsible environmental management. Origin's operations are subject to environmental regulation under Commonwealth, State and Territory legislation. Our activities, products and services have potential to impact the environment so these are managed to comply with applicable laws as well as in accordance with the company's integrated Health, Safety and Environment management system. Whenever there are environment-related incidents, these are recorded and follow-up action implemented commensurate with the actual and environment impacts associated with the incident.

By way of example, during the year ended 30 June 2015, the Company's Australian operations recorded a number of environmental incidents arising from Origin's activities including those where Origin was the operator of a joint venture. These incidents resulted in environmental impacts of a minor and/or temporary nature. Regulators were notified of reportable environmental incidents and there were no prosecutions or fines resulting from these reportable incidents. Appropriate remedial actions have been taken or are being undertaken in response to each notice and reportable environmental incident.

Origin Energy has not been subject to legal court proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

8.2 Environmental policy and planning framework

The project will be managed within Origin's our integrated Health, Safety and Environment management system (HSEMS). with additional detailed controls specified in a suite of HSE and operational risk directives Origin operates its business in accordance with our HSEMS, with additional detailed controls specified in a suite of HSE and operational risk directives. Leading the HSEMS is the Company Health, Safety and Environment Policy which has an overriding aspiration to conduct our business in a way that causes no harm to the health and safety of people and has no unforeseen impacts to the environment. A copy of the HSE Policy is located in Appendix M.

The HSEMS is aligned with the requirements of company HSE Policy and recognised international and Australian standards including ISO 14001, OHSAS 18001, ISO 31000 and AS 4801 and supports the Company in its efforts to comply with legal obligations. The HSEMS includes a suite of environmental controls to reduce the risk of environmental harm through:

- exercising due care in complying with legal and other obligations
- identifying environmental hazards and managing the associated risks
- using energy and resources efficiently
- minimising wastes and emissions
- supporting business units achieve appropriate objectives and conduct ongoing monitoring and reporting.

The HSEMS ensures we are all contributing to the delivery of a world class energy business through leading environmental practices to leave a positive environmental legacy.

8.3 Actions previously referred under the EPBC Act

Origin Energy has previously referred or has been responsible for referring an action under the EPBC Act. The most significant referral was in relation to the Australia Pacific LNG project for the development, construction,

operation and decommissioning of infrastructure associated with Origin's coal seam gas resources in south central Queensland. Origin is a joint venture partner with Australia Pacific LNG holding 37.5% interest in the project. The Commonwealth approved the project under the EPBC Act including approval for the development of the gas fields, construction of transmission pipelines and an LNG (liquefied natural gas) plant on Curtis Island.

Origin Energy has submitted other referrals under the EPBC Act some of which were not deemed to be controlled actions. Previous referrals include:

2016/7800	Origin Energy Resources Limited/Exploration (mineral, oil and gas - marine)/west of Peterborough, to east of Port Campbell/Victoria/Enterprise Three-dimensional Transition Zone Seismic Survey, Victoria
2016/7694	Origin Energy Darling Downs Solar Farm Pty Ltd/Energy Generation and Supply (renewable)/Lot 119 SP227731/Queensland/Darling Downs Solar Farm, west of Dalby, Qld
2015/7551	Origin Energy Resources Ltd/Energy generation and supply (non-renewable)/Otway Basin/VIC/Halladale and Speculant Gas Pipeline Project, North of Port Campbell, Vic
2012/6565	Origin Energy Resources Limited/Exploration (mineral, oil and gas - marine)/Otway Basin/VIC/The Enterprise 3D Seismic Acquisition Survey, Otway Basin, Vic
2012/6421	Origin Energy Resources Limited /Exploration (mineral, oil and gas - marine)/Otway Basin/Commonwealth Marine/Otway Astrolabe 3D Marine Seismic Survey, Otway Basin
2011/6125	Origin Energy Resources Limited /Exploration (mineral, oil and gas - marine)/S of Vic, the Otway Basin, Southern Eastern Marine region/Commonwealth Marine/Otway Basin Exploration Drilling Campaign, Vic
2011/6091	Origin Energy ATP Pty Limited/Mining/300km west of Brisbane /QLD/Ironbark Coal Seam Gas Project
2011/6048	Origin Energy Resources Ltd/Exploration (mineral, oil and gas - marine)/100km northwest King Island/VIC/Astrolabe 3D Marine Seismic Survey
2011/5879	Origin Energy Resources Limited /Energy Generation and Supply (non-renewable)/Halladale and Black Watch/Victoria/Gas Fields Development
2010/5702	Origin Energy Resources Limited /Exploration (mineral, oil and gas - marine)/Exploration permit T/44P within the Bass Basin/Commonwealth Marine/Origin Energy Silvereye-1 Exploration Drilling Programme
2010/5558	Origin Energy Resources Limited /Exploration (mineral, oil and gas - marine)/VIC/RL2, PEP168, PPL10, Otway region 10km NW of Peterborough/Victoria/Speculant 3D Transition Zone Seismic Survey
2010/5417	Origin Energy Resources Limited /Energy Generation and Supply (non-renewable)/qld/Queensland/Darling Downs Power Station 2
2009/4913	Origin Energy Resources Limited /Energy Generation and Supply (non-renewable)/Approx. 2.2 kms SE of Garvoc/Victoria/Gas Pipeline Crossing at Mount Emu Creek
2009/4776	Origin Energy Resources Ltd/Exploration (mineral, oil and gas - marine)/Approx 160kms North-West of Devonport/TAS/Rockhopper-1 and Trefoil-2 Exploration Drilling in Permit Area T/18P
2009/4719	Stockyard Hill Wind Farm Pty Ltd/Energy Generation and Supply (renewable)/150km south-west Melbourne, 35 km west of Ballarat /Victoria/Stockyard Hill Wind Farm
2008/4456	Origin Energy CSG Limited/Mining/Condamine-Kogan Rd, Chinchilla/QLD/Proposed Coal Seam Gas Development & Associated Infrastructure
2007/3551	Origin Energy Resources Limited/Exploration (mineral, oil and gas - marine)/Bass Basin of Bass Strait/Commonwealth Marine/Silvereye 3D Seismic Survey
2006/2881	Origin Energy Power Limited/Transport - Water/Mortlake/Victoria/Water pipelines, Mortlake Power Station

2005/2180	Origin Energy /Exploration (mineral, oil, gas)/Bass Strait/TAS/Shearwater 2D and 3D marine seismic survey
2005/1995	Origin Energy Power Ltd/Energy generation and supply/Spring Gully/QLD/Construction and operation of a gas fired power station
2005/1984	Origin Energy Power Limited/Energy Generation and Supply (non-renewable)/Port Campbell-Mortlake/Victoria/Victorian Generator Project
2005/1942	Origin Energy Retail Ltd/Energy generation and supply/Poolaijelo to Penola/VIC/SESA Pipeline
2004/1924	Origin Energy CSG Limited /Energy Generation and Supply (non-renewable)/Spring Gully/Queensland/Spring Gully Gas Field (Stage 2)
2004/1644	Origin Energy CSG Limited/Energy generation and supply (non-renewable)/Spring Gully/QLD/Spring Gully gas field development (Stage 1) within petroleum leases PL195, PL204, PL200 and PL203
2003/1058	Origin Energy Resources Limited/Exploration (mineral, oil, gas)/Bass Strait/Commonwealth Marine/Exploration Drilling Well Trefoil-1
2001/321	Origin Energy Resources Limited /Mining/Bass Strait/Victoria/Yolla Gas Field (TRL1) Development

9. Other Approvals and Conditions

9.1 Environment Effects Act 1978

A referral of the current project under the *Environment Effects Act 1978* (Referral Number 2016-R05) was lodged with the Minister for Planning on 25 July 2016. A no EES decision (with no conditions) was made by the Minister for Planning on 7 September 2016.

9.2 Mineral Resources (Sustainable Development) Act 1990

A Work Plan and Work Authority are required to be obtained under the *Mineral Resources (Sustainable Development) Act 1990* for the quarry. As part of a Work Authority process, a draft Work Plan (WA1518) was prepared and endorsed by the Department of State Development and Business Innovation, now the Department of Economic Development, Jobs, Transport and Resources, on 5 May 2014.

Once a planning permit is issued, under the *Planning and Environment Act 1987,* the following will need to be undertaken:

- Lodge 'Information Package' (including planning permit and Work Plan) with DEDJTR.
- Once Work Plan is approved, submit Work Authority Application (including the payment of a rehabilitation bond) to the DEDJTR.

An Environmental Management Plan forms part of the Work Plan to address the environmental impact of the quarry through construction and operation. The Environmental Management Plan includes the following measures:

- While native vegetation that is classified as Minor Treeless Vegetation will be removed (and does not meet the threshold for remnant vegetation patch), no remnant vegetation patches or scattered indigenous trees will be removed from the site.
- Site operations, including ground disturbance, stockpiling of soils and storage and operation of plant and machinery, will not occur within an area of 12 m around the tree and remnant patches of native vegetation
- The tree and a 12 m 'no go zone' will be protected by fencing. Signage on the fencing will state that the area is not be disturbed
- A Striped Legless Lizard Salvage and Translocation Plan will be developed before construction commences. This has been recommended as a precautionary measure given the low probability of occurrence of the species within the quarry areas
- The spread of weeds and pathogens will be minimised through the implementation :
    - Vehicles entering and exiting the site will be visually inspected for weeds, and where required vehicles will be cleaned prior to exiting the site
    - All vehicles exiting the site will pass through a wheel wash to remove soil and weeds prior to leaving the site
    - Site personnel will be made aware of potential risks associated with removing soil and weeds from the site
    - Weeds will be controlled using chemical products with herbicidal action registered by the Australian Pesticides and Veterinary Medicines Authority. Any products used will be applied by personnel experienced and trained in the application of such products.

Additionally, as part of the approval of the Work Plan there will a number of additional conditions which will apply, including (but not limiting to) vegetation management and buffer zones, noxious weeds and pests mitigation measures, and erosion, drainage and discharge controls.

9.3 Planning and Environment Act 1987

9.3.1 Wind Energy Facility

A planning permit (Permit No: PL-SP/05/0548) was issued by the Minister for Planning for the WEF on 26 October 2010 under the provisions of the Pyrenees Planning Scheme. An application to amend the existing WEF Planning Permit was submitted with the Minister for Planning on 12 May 2016 (Application No. PL-SP/05/0548-1). The primary purpose of the amendment application was to amend the planning permit to allow for taller turbines to achieve more efficient generation of energy and other miscellaneous changes, consistent with the project parameters currently being assessed under the EPBC Act.

The Minister for Planning determined to call-in the application from himself, on 8 August 2016, for concurrent assessment with the other related projects (including the planning permit applications associated with external overhead powerlines and quarry, discussed below).

The applications were publically exhibited in October and November 2016 with a Panel Hearing concluded on Monday 20 February 2017.

Permit No: PL-SP/05/0548 currently includes conditions relating to the management and mitigation of potential environmental (and social) impacts. The application to amend this permit does not seek to reduce these requirements.

Planning Permit No. PL-SP/05/0548 requires the preparation of an Environmental Management Plan, including (but not limited to):

- construction and site works management plan
- sediment, erosion, and water quality management plan
- blasting plan
- hydrocarbon and hazardous substances plan (Condition 6d)
- native vegetation management plan

Additionally, as part of the planning permit amendment application assessment process, DELWP have recommended that the following conditions are included in an amended permit:

- *Notification of permit conditions*

  Before works start, the permit holder must advise all persons undertaking the vegetation removal or works on site of all relevant permit conditions and associated statutory requirements or approvals.

- *Protection of Native Vegetation*

  Before any permitted clearing of native vegetation starts, a report to the satisfaction of the Minister for Planning must be submitted to and approved by the Minister for Planning detailing the measures to be implemented to protect the native vegetation to be retained during construction works, and the person/s responsible for implementation and compliance

- *Protection of remnant vegetation and trees*

  Before works start, a native vegetation protection fence must be erected around all remnant patches and trees to be retained on site. This fence must be erected around the remnant patch at a minimum distance of 15 metres from retained native vegetation. The fence must be constructed to the satisfaction of the responsible authority. The fence must remain in place until all works are completed.

  Except with the written consent of the responsible authority within the area of native vegetation to be retained and any tree protection zone associated with the permitted use and/or development, the following is prohibited:

  a) vehicular or pedestrian access

b) trenching or soil excavation

c) storage or dumping of any soils, materials, equipment, vehicles, machinery or waste products

d) entry and exit pits for underground services

e) any other actions or activities that may result in adverse impacts to retained native vegetation.

- *Protection of scattered trees*

Before works start, a fence must be erected around all scattered trees to be retained on site. This fence will protect the tree by demarcating the tree protection zone and must be erected at a radius of 12 x the diameter at a height of 1.3 metres to a maximum of 15 metres but no less than 2 metres from the base of the trunk of the tree. The fence must be constructed of star pickets, flagging or similar to the satisfaction of the responsible authority. The fence must remain in place until all works are completed to the satisfaction of the responsible authority.

9.3.2 External Overhead Powerlines

Planning permit applications was lodged with the Minster for Planning on 12 May 2016 for the removal of native vegetation and the creation / alteration of access to the Road Zone Category 1 within the Shire of Pyrenees (Application No. PA1600101) and Shire of Corangamite (Application No. PA1600126).

The applications seek planning permits for:

- The removal of native vegetation
  - Pyrenees – 0.523 ha remnant patch and 37 scattered indigenous trees (including 3 scattered remnant trees and one remnant patch (0.08 ha) within the Environmental Significance Overlay – Schedule 2 Water Course Protection').
  - Corangamite – 1.422 ha remnant patch and 4 scattered indigenous trees (including three remnant patches (0.23 ha) within the Environmental Significance Overlay – Schedule 1 'Watercourse, water body and wetland protection overlay).
- The creation / alteration of access to the Road Zone Category 1
  - Pyrenees – Old Geelong Road, Skipton Road.
  - Corangamite – Hamilton Highway, Rokewood-Skipton Road and Glenelg Highway

The Minister for Planning determined to call-in the applications from himself, on 8 August 2016, for concurrent assessment with the other related projects. The applications were exhibited for public in October and November 2016 and a Panel Hearing concluded on Monday 20 February 2017.

Additionally, as part of the planning permit amendment application assessment process, the DELWP have recommended that the following conditions are included in the planning permits:

- *Notification of Permit Conditions*

  Before works start, the permit holder must advise all persons undertaking the vegetation removal or works on site of all relevant permit conditions and associated statutory requirements or approvals.

- *Protection of Native Vegetation*

  Before any permitted clearing of native vegetation starts, a report to the satisfaction of the Minister for Planning must be submitted to and approved by the Minister for Planning detailing the measures to be implemented to protect the native vegetation to be retained during construction works, and the person/s responsible for implementation and compliance

- *Protection of Remnant Vegetation and Trees*

  Before the works start, a native vegetation protection fence must be erected around all remnant patches and trees to be retained on site. This fence must be erected around the remnant patch at a minimum

distance of 15 metres from retained native vegetation. The fence must be constructed to the satisfaction of the Minister for Planning. The fence must remain in place until all works are completed.

Except with the written consent of the Minister for Planning within the area of native vegetation to be retained and any tree protection zone associated with the permitted use and/or development, the following is prohibited:

a) vehicular or pedestrian access;

b) trenching or soil excavation;

c) storage or dumping of any soils, materials, equipment, vehicles, machinery or waste products;

d) entry and exit pits for underground services; or

e) any other actions or activities that may result in adverse impacts to retained native vegetation.

Protection of Scattered Trees

Before the works start, a fence must be erected around all scattered trees to be retained on site. This fence will protect the tree by demarcating the tree protection zone and must be erected at a radius of 12 x the diameter at a height of 1.3 metres to a maximum of 15 metres but no less than 2 metres from the base of the trunk of the tree. The fence must be constructed of star pickets, flagging or similar to the satisfaction of the Minister for Planning. The fence must remain in place until all works are completed to the satisfaction of the Minister for Planning.

9.3.3 Terminal Station

Planning Permit PP2012/152.A was issued by the Shire of Corangamite on 22 February 2013. An amendment to the expiry date condition of the permit was made by the Shire of Corangamite on 16 November 2015.

An Environmental Management Plan will be prepared to address the environmental impact of the proposal. In accordance with Condition 6 of Planning Permit No. PP2012/152.A, the Environmental Management Plan will address:

- Construction and site works management
- Erosion, sediment and water quality management
- Hydrocarbon and hazardous substances management
- Blasting management
- Fire prevention and emergency response management
- Native vegetation management
- Fauna management
- Pest animal management
- Traffic management
- Cultural Heritage Management
- Landscape Management
- Operational and Maintenance Management

Planning Permit No. PP2012/152.A also prescribes other conditions relating (but not limited) to general amenity provisions, noise and dust control, control of light spill, run off control, ongoing soil erosion control, and batters. Additionally, Planning Permit No. PP2012/152.A requires the following plans to be prepared:

- Construction Management Plan (Condition 4)
- Traffic Management Plan (Condition 5)
- Drainage and Water Storage Management Plan (Condition 8)

9.3.4 Quarry

A planning permit application for the quarry was submitted to the Pyrenees Shire Council on 13 May 2016 (Application No. PA2499/16). On 19 May 2016, the Pyrenees Shire Council requested in writing that the Minister for Planning call-in the application for assessment with the other applications for related projects (WEF planning permit amendment application and native vegetation removals associated with powerlines).

The Minister for Planning determined to call-in the application from the Shire of Pyrenees, on 8 August 2016, for concurrent assessment with the other related projects. The applications were exhibited for public in October and November 2016 and a Panel Hearing concluded on Monday 20 February 2017.

In addition to the controls and conditions pursuant to the Work Plan and Work Authority (discussed in Section 9.2), if issued, the planning permit for the quarry will also include conditions to manage environmental impacts. As part of the planning permit amendment application assessment process draft conditions have been prepared for consideration during the planning panel hearings. The draft conditions include requirements for a drainage and water storage management plan, dust avoidance, soil erosion measures and topsoil management, etc.

9.4 Aboriginal Heritage Act 2006

A number of CHMPs have been approved or are currently being assessed for the Project. The table below identifies each the CHMPs relevant to each related project.

Table 8: Cultural Heritage Management Plans

Project	Cultural Heritage Management Plans
Wind Energy Facility	• Archaeology At Tardis, 'Stockyard Hill Wind Farm, Stockyard Hill, Cultural Heritage Management Plan, AAV CHMP No. 10530' (21 October 2009). *Approved by AV on 22 October 2009.* • Archaeology At Tardis, 'Cultural Heritage Management Plan No. 14279, Road and Intersection Upgrades' (23 November 2016). *Approved by Wathaurung Aboriginal Corporation on 24 November 2cara016.* • Archaeology At Tardis, 'Cultural Heritage Management Plan No. 14281, Additional Wind Energy Facility Works'. *Approved by Wathaurung Aboriginal Corporation on 1 March 2017.*
External Overhead Powerlines	• Archaeology At Tardis, 'Cultural Heritage Management Plan No. 12177, Stockyard Hill Wind Farm 'External Overhead Powerline' – *Approved by Wathaurung Aboriginal Corporation on 16 March 2017.* • Archaeology At Tardis, 'Cultural Heritage Management Plan 14449, Stockyard Hill Wind Farm 'External Overhead Powerlines, Western SG Railway Line to Lot 1 TP851465, Lower Darlington Road, Lismore' (23 November 2016). *Approved by AV on 22 December 2016.*
Terminal Station	• Archaeology At Tardis, 'Cultural Heritage Management Plan 12081, Stockyard Hill Wind Farm Terminal Station Lower Darlington Road Lismore' (June 2012). *Approved by AV on 19 July 2012.* • Archaeology At Tardis, 'Cultural Heritage Management Plan No. 12402, Intersection Upgrade of Camperdown-Lismore Road and Lower Darlington Road, Lismore' (11 January 2013). *Approved by AV on 15 January 2013.*
Quarry	• Archaeology At Tardis Pty Ltd, 'Cultural Heritage Management Plan 12648, Stockyard Hill Wind Farm Quarry Lot 2 PS604561 143 Stockyard Hill - Wangatta Road Stockyard Hill' (9 May 2014). *Approved by Wathaurung Aboriginal Corporation on 14 May 2014.*

The above listed CHMPs have been prepared to mitigate potential cultural heritage effects specific to each activity / area, including measures such as the use of fencing and signage to avoid sites, salvage and training for contractors. Additionally, Contingency Plan forms part of each CHMP to manage potential issues including:

- specific measures in the unlikely event that any Aboriginal cultural heritage is unexpectedly discovered during the activity;
- any contingency plans required in relation to disputes, delays and other obstacles that may affect the conduct of the activity;

- reviewing compliance with the cultural heritage management plan and mechanisms for remedying non-compliance;
- the notification of the discovery of Aboriginal cultural heritage during the carrying out of the activity; and
- requirements relating to the custody and management of any Aboriginal cultural heritage found during the course of the activity.

9.5 Other

The requirements of other relevant Acts, including (but not limited to) the following, will also be addressed through the development of the Stockyard Hill Wind Farm and Related Projects:

- *Civil Aviation Act 1988*
- *Crown Land (Reserves) Act 1978*
- *Land Act 1958*
- *Electricity Industry Act 2000*
- *Electricity Safety Act 1988*
- *Environment Protection Act 1970*
- *Flora and Fauna Guarantee Act 1988*
- *Heritage Act 1995*
- *Land Acquisition and Compensation Act 1986*
- *Road Management Act 2004*
- *Rail Corporation Act 1996*
- *Water Act 1989*
- *Wildlife Act 1975*

10. Conclusion

This Preliminary Documentation report provides information requested by the DoEE to assist in assessing the relevant impacts of the Stockyard Hill Wind Farm and Related Projects. As detailed in previous referral documentation (Appendix A) and this report, management and offset measures are proposed to adequately address any potential impacts to matters of national environmental significance resulting from the action. Furthermore, the potential impacts to matters of national environmental significance resulting from the action are less than those previously contemplated (and approved) by the 2011 EPBC Decision 2009/4719.

References

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SEWPaC 2012. Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy, October 2012.

Appendix A. EPBC 2016/7746 Referral Form (excluding appendices)

Appendix B. EPBC 2016/7746 Controlled Action Decision

Appendix C. DoE Guidelines for Preliminary Documentation

.

Appendix D. EPBC 2009/4719 Approval Decision

Appendix E. Land Tenure

Appendix F. Amended Wind Energy Facility Indicative Layout Plan

Appendix G. External Overhead Powerlines Map Series

Appendix H. Terminal Station Concept Design

Appendix I. Quarry Indicative Layout Plan

Appendix J. MNES Summary Report

Appendix K. Golden Sun Moth Offset Management Strategy

Appendix L. Striped Legless Lizard Offset Management Strategy

Appendix M. Origin HSE Policy