

Maroona Wind Farm

Environmental Management Plan

PLANNING AND ENVIRONMENT ACT  
ARARAT PLANNING SCHEME  
PERMIT NO. PA150016A  
ENDORSED PLAN  
SHEET 1 OF 14  
SIGNED [Signature] FOR  
MINISTER FOR PLANNING  
DATE: 06 JUL 2017

Prepared by:

Future Energy Pty Ltd

June 2017

ENDORSED TO COMPLY  
WITH CONDITION  
25  
OF PLANNING PERMIT  
PA150016A

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## 1 Summary

Under the provisions of the Maroona Wind Farm Planning Permit (PA1500016A), the project proponent Maroona Wind Farm Pty Ltd (MWF), is required to prepare an Environmental Management Plan. The purpose of this document is to address this requirement by detailing procedures and measures by which the Maroona Wind Farm will ensure that the construction and operation of the wind farm will not have undue impacts on the environmental values of the project site or its immediate surrounds.

This Environmental Management Plan (EMP) is required to address a number of specific issues relating to potential environmental impact which are detailed in the planning permit. These specific issues are addressed in sub-plans that are included as appendices to this document. These sub-plans include:

- A Construction and Worksite Management Plan (CWMP);
- A Sediment, Erosion and Water Quality Plan (SEWMP);
- A Hydrocarbon and Hazardous Substances Plan (HHSP);
- A Wildfire Prevention and Emergency Response Plan (WPERP);
- A Vegetation Management Plan (VMP); and
- A Biosecurity Management Plan (BMP).

In addition to these sub-plans the planning permit requires that the Environmental Management Plan include general measures procedures pertaining to training programs, reporting, review processes and timeframes. These general measures are addressed in this document.

As detailed below, MWF has appointed Consolidated Power Projects (CPP) to undertake the balance of plant work for the wind farm. CPP's scope comprises the design, supply, installation, commissioning and testing of all the electrical and civil works required. MWF has appointed Vestas Australia to supply, install and commission the two 3.45 MW V126 Wind Turbine Generators.

Additional detail concerning matters addressed in this EMP will be provided in CPP's Project Work Health Safety and Environmental Management Plan (WHSEMP) and Vestas' Environmental Management Plan (VEMP) and Vestas' Worksite Health and Safety Management Plan (VWHSMP). At the date of issue, sub-contracts are still being negotiated by Vestas and CPP and hence some details of the WHSEMP, VEMP and VWHSMP have not been finalised. Once the WHSEMP, VEMP and VWHSMP have been finalised they will be appended to this EMP and this EMP will be reissued to the Responsible Authority.

## 2 Permit Compliance Summary

This Environmental Management Plan details how MWF will satisfy Permit Conditions No. 25 to 36 of Planning Permit PA1500016A. The table below summarises how the plan achieves this outcome.

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**Table 1: Permit Conditions**

No	Condition	How/Where Addressed
25	<p><i>Before the development starts, an environmental management plan must be prepared, to the satisfaction of the responsible authority. When approved, the environmental management plan will be endorsed by the responsible authority and will then form part of this permit.</i></p> <p><i>The environmental management plan:</i></p> <ul style="list-style-type: none"> <li><i>a. Must be generally in accordance with the Planning Permit Application - Maroona Wind Farm (Volumes 1-3), dated December 2015 and include the specific measures included in the Biodiversity Assessment prepared by Ecology and Heritage Partners (January 2016);</i></li> <li><i>b. Must be in accordance with all relevant EPA requirements and guidelines; and</i></li> <li><i>c. must meet the requirements of conditions 27 to 35 below.</i></li> </ul>	<p>EMP, CWMP, SEWMP, HHSP, WPERP, VMP, BMP</p>
26	<p><i>The use and development must be carried out in accordance with the endorsed environmental management plan, to the satisfaction of the responsible authority.</i></p>	NA
27	<p><i>The environmental management plan must include a construction and work site management plan.</i></p> <p><i>The construction and work site management plan must include:</i></p>	CWMP
27a	<p><i>The identification of fuels, other hazardous materials and all other potential contaminants stored or used on site during the construction phase of the wind energy facility, and appropriate storage, construction and operational methods to control any identified contamination risks;</i></p>	CWMP, Section 4
27b	<p><i>Procedures for managing potential spills and leaks and pollution incidents, including incorporation of appropriate pollution control measures outlined in EPA Publication 480 Environmental Guidelines for Major Construction Sites (February 1996);</i></p>	CWMP, Section 4
27c	<p><i>Procedures to suppress dust emissions from construction-related activities. Appropriate measures may include water spraying of roads and stockpiles, stabilising surfaces, temporary screening and wind fences, modifying construction activities during periods of heightened winds and revegetating exposed areas as soon as practicable;</i></p>	CWMP, Section 5

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27d	<i>Procedures for managing noise emissions from construction-related activities;</i>	CWMP, Section 6
27e	<i>Appropriate sanitary facilities to be provided for construction and maintenance staff, which must be designed and operated in accordance with EPA Publication 891.3 Code of Practice – Onsite wastewater management (February 2013);</i>	CWMP, Section 7
27f	<i>The identification of waste re-use, recycling and disposal procedures;</i>	CWMP, Section 8
27g	<i>Procedures to ensure that construction vehicles and equipment use designated tracks and works areas to avoid impacts on native vegetation; and</i>	CWMP, Section 9
27h	<i>The removal of works, buildings and staging areas on completion of the construction phase of the project.</i>	CWMP, Section 10
28	<i>The environmental management plan must include a sediment, erosion and water quality management plan which must be prepared in consultation with the Glenelg Hopkins Catchment Management Authority prior to its submission to the responsible authority.</i>  <i>The sediment, erosion and water quality management plan must include:</i>	SEWMP, Section 3, Appendix A
28a	<i>Identification of all construction and operational processes that could potentially lead to water contamination;</i>	SEWMP, Section 4
28b	<i>Procedures to ensure that silt from batters, cut-off drains, table drains and road works is retained on the site during and after construction and replaced as soon as possible. To this end:</i>  <i>i. All land disturbances must be confined to a minimum practical working area;</i> <i>ii. Soil to be removed must be stockpiled and separate soil horizons must be retained in separate stockpiles and not mixed, and soil must be replaced as soon as possible in sequence; and</i> <i>iii. Stockpiles must be located away from drainage lines;</i>	SEWMP, Section 5
28c	<i>The installation of geo-textile silt fences (with sedimentation basins where appropriate) on all drainage lines from the site which are likely to receive run-off from disturbed areas;</i>	SEWMP, Section 5.3

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28d	<i>Procedures to ensure that steep batters are treated in accordance with EPA Publication 275 Construction Techniques for Sediment Pollution Control (May 1991);</i>	SEWMP, Section 8
28e	<i>Procedures for waste water discharge management;</i>	SEWMP, Section 9
28f	<i>A process for overland flow management to prevent the concentration and diversion of waters onto steep or erosion prone slopes;</i>	SEWMP, Section 8
28g	<i>Pollution management measures for stored and stockpiled materials including waste materials, litter, contaminated run-off and any other potential source of pollution to ground or surface waters;</i>	SEWMP, Section 9
28h	<i>Incorporation of appropriate pollution control measures outlined in EPA Publication 480 Environmental Guidelines for Major Construction Sites (May 1996);</i>	SEWMP, Section 5, Section 8, Section 9
28i	<i>A program and appropriate capacity for annual inspection and regular maintenance of any on-site wastewater management system;</i>	SEWMP, Section 7.2
28j	<i>Procedures to manage dust from access tracks to prevent adverse impacts on the amenity of neighbouring residential properties; and</i>	SEWMP, Section 10
28k	<i>A program of inspection and remediation of localised erosion within a specified response time.</i>	SEWMP, Section 11
29	<i>The environmental management plan must include a hydrocarbon and hazardous substances plan. The hydrocarbon and hazardous substances plan must include:</i>	HHSP
29a	<i>Procedures for any on-site, permanent post-construction storage of fuels, lubricants, waste oil or other hazardous substances or potential contaminants to be in bunded areas; and</i>	HHSP, Section 4
29b	<i>Contingency measures to ensure that any chemical or oil spills are contained on-site and cleaned up in accordance with EPA requirements.</i>	HHSP, Section 5

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30	<p><i>The environmental management plan must include a fire prevention and emergency response plan prepared in consultation with and to the satisfaction of the CFA and DELWP. Consultation with the CFA must include consultation at the region and local level. The Ararat Rural City Council must also be consulted in the preparation of the plan.</i></p> <p><i>The fire prevention and emergency response plan must be generally in accordance with the Emergency Management Guidelines for Wind Farms – Version 4, CFA February 2012, and must include:</i></p>	WPERP, Section 3, Appendix A
30a	<p><i>Consideration of weather based threshold criteria for brigade call out and use of aerial appliances;</i></p>	WPERP, Section 9, Section 10
30b	<p><i>Criteria for the provision of static water supply tanks solely for fire-fighting purposes, including minimum capacities, appropriate connections and signage;</i></p>	WPERP, Section 6
30c	<p><i>Procedures for vegetation management, fuel control and the provision of fire-fighting equipment during declared fire danger periods;</i></p>	WPERP, Section 8, Section 9, Section 10
30d	<p><i>Minimum standards for access roads and tracks to allow access for fire fighting vehicles, including criteria for access to static water supply tanks for fire-fighting vehicles;</i></p>	WPERP, Section 5
30e	<p><i>A requirement that, within one month after the commencement of the operation of the wind energy facility, the operator of the wind energy facility facilitates a familiarisation visit to the site and explanation of emergency services procedures for:</i></p> <ul style="list-style-type: none"> <li><i>i. The CFA (including headquarters level, the CFA Regional Office and local volunteer brigades as specified by the CFA Regional Office);</i></li> <li><i>ii. Rural Ambulance Victoria;</i></li> <li><i>iii. Ararat Municipal Emergency Management Planning Committee; and</i></li> <li><i>iv. Victoria Police;</i></li> </ul>	WPERP, Section 11
30f	<p><i>Subsequent familiarisation sessions for new personnel of the organisations referred to in condition 30(e) on a periodic basis as required;</i></p>	WPERP, Section 11
30g	<p><i>If requested, training of personnel of the organisations referred to in condition 30(e) in relation to suppression of wind energy facility fires.</i></p>	WPERP, Section 11



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31	<p><i>The environmental management plan must include a vegetation management plan to be prepared in consultation with DELWP – Environment Portfolio and approved by the responsible authority.</i></p> <p><i>The vegetation management plan must include:</i></p>	VMP, Section 3, Appendix A
31a	<p><i>Identification of the siting and extent of native vegetation; and</i></p>	VMP, Section 4
31b	<p><i>Procedures for ensuring that native vegetation to be retained near wind energy facility infrastructure, including access tracks, will not be adversely affected by construction of the wind energy facility.</i></p>	VMP, Section 5, Section 6
32	<p><i>The environmental management plan must include a biosecurity management plan to be prepared in consultation with DEDJTR and to the satisfaction of the responsible authority.</i></p> <p><i>The biosecurity management plan must include:</i></p>	BMP, Section 3
32a	<p><i>Procedures to prevent biosecurity risks, which may include (but are not limited to):</i></p> <ul style="list-style-type: none"> <li><i>i. The cleaning of all plant and equipment before transport onto and off the site; and</i></li> <li><i>ii. The use of material/products on site which are free of invasive plants and animals;</i></li> </ul>	BMP, Section 5
32b	<p><i>A protocol for effective identification of biosecurity risks, early intervention to manage biosecurity risks, ongoing monitoring of biosecurity risks, trace-backs, and integrated control measures when entry, establishment or spread of specific risk targets is identified;</i></p>	BMP, Section 6
32c	<p><i>A requirement to comply with approved government or industry standards and procedures for the identification, prevention and management of biosecurity risks that apply from time to time, which include (but are not necessarily limited to):</i></p> <ul style="list-style-type: none"> <li><i>i. The DEDJTR's Invasive Plant and Animal Management Policy Framework (undated);</i></li> <li><i>ii. The DEDJTR's Biosecurity Guidelines for Movement of Equipment Contractors Between Farms (Note Number: AG1171) published in January 2005 and updated in July 2009; and</i></li> <li><i>iii. The DEDJTR's recommended standards and practices for managing viticulture biosecurity and plant biosecurity risks.</i></li> </ul>	BMP, Section 5.1, Section 6, Section 7

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33	<i>The environmental management plan must include a training program for construction workers and permanent employees or contractors at the wind energy facility site, including a site induction program relating to the range of issues addressed by the environmental management plan.</i>	EMP, Section 3
34	<i>The environmental management plan must include a program for reporting environmental incidents, including:</i>	EMP, Section 4
34a	<i>A register of environmental incidents, non-conformances and complaints, together with corrective actions taken in response to such incidents, non-conformances or complaints; and</i>	EMP, Section 4
34b	<i>Identification of the person to whom reports of environmental incidents, non-conformances and complaints should be made.</i>	EMP, Section 4
35	<i>The environmental management plan must be reviewed and if necessary amended every five years in consultation with the responsible authority and other authorities as directed by the responsible authority, to reflect operational experience and changes in environmental management standards and techniques.</i>  <i>The amended environmental management plan must be submitted to the responsible authority for re-endorsement. Once re-endorsed, the amended environmental management plan will take the place of the earlier environmental management plan and will form part of this permit.</i>	NA
36	<i>The environmental management plan must include a timetable for implementation of all programs and works referred to in conditions 27 to 35 above.</i>	EMP, Section 6

### 3 Project Summary

The Maroona Wind Farm will consist of two 3.45 MW wind turbines located on Andrews Lane, Maroona, Victoria. These two turbines will be connected to an overhead 22 kV line that runs along Andrews Lane internally to the site. As all cabling will be run underground the wind farm will not result in additional overhead power lines. Due to the relatively small size of the project a switchyard will not be required. Instead a small control building will house the electrical equipment required to connect the wind farm to the grid.

Construction of the wind farm will take approximately 8 – 9 months. There are three main stages to the construction process, starting with construction of the access tracks, hardstands, foundations and underground cabling. Stage two sees the turbines delivered and installed using specialised cranes and

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highly skilled operators. The final stage involves commissioning and testing the wind farm, and connecting it to the electricity grid so that the export of energy can begin.

MWF has appointed Consolidated Power Projects (CPP) to undertake the balance of plant work for the wind farm. CPP's scope comprises the design, supply, installation, commissioning and testing of all the electrical and civil works required. MWF has appointed Vestas Australia to supply, install and commission the two 3.45 MW V126 Wind Turbine Generators. Powercor Australia will carry out the necessary works at the site and the local sub-station to connect the wind farm to the local electricity grid.

During the operational period of the wind farm there will be very little activity on the site. The operation of the wind farm will not require anyone to be in attendance. Wind turbines automatically commence producing energy as the wind reaches a cut-in speed, and they likewise cease operating as soon as high wind speeds are reached. Energy produced is automatically fed into the local grid where it is utilised in the local area.

Like all modern wind farms, the Maroona Wind Farm will be remotely monitored 24 hours a day by the chosen maintenance provider. Under a long term maintenance agreement, routine scheduled maintenance will be undertaken on each turbine every six months. The maintenance function will be carried out by representatives of the turbine supply company, Vestas Australia. This maintenance will take approximately one day per turbine.

#### 4 Training Program

Prior to starting work on the site, all personnel will be made aware of the range of issues addressed in this EMP through a site specific induction program.

The site induction program will cover the following:

- As outlined in the Construction and Worksite Management Plan:
  - Identification of fuels and other hazardous materials to be stored or used on site during the construction period;
  - Procedures for managing spills and leaks and pollution incidents in accordance with EPA requirements;
  - Procedures for managing dust emissions;
  - Procedures for managing noise emissions;
  - Procedures for waste re-use, recycling and disposal;
  - Procedures relating to construction vehicles and personnel use of designated tracks and works areas;
- As outlined in the Sediment, Erosion and Water Quality Management Plan:
  - Procedures for minimising soil disturbance;
  - Procedures for stockpiling;
  - Procedures for treatment of steep batters in accordance with EPA requirements;
  - Procedures for waste water discharge;
  - Procedures for management of overland flows;
  - Procedures for pollution control in accordance with EPA requirements;

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- As outlined in the Hydrocarbon and Hazardous Substances Plan:
  - Procedures for managing spills in accordance with EPA requirements;
- As outlined in the Wildfire Prevention and Emergency Response Plan:
  - Procedures for vegetation management in the vicinity of works;
  - Emergency response procedures;
- As outlined in the Vegetation Management Plan:
  - Location and nature of Environmental Exclusion Zones;
  - Procedures pertaining to Environmental Exclusion Zones;
- As outlined in the Biosecurity Plan:
  - Procedures pertaining to cleaning of footwear, vehicles and machinery prior to entry and exit;
  - Procedures pertaining to the use of materials that are free of invasive species; and
  - The requirement to comply with approved government or industry standards and procedures for the identification, prevention and management of biosecurity risks.

## 5 Reporting of Environmental Incidents

Environmental non-conformances, incidents and complaints will be reported to the MWF Project Manager.

The MWF Project Manager will record all environmental non-conformances, incidents and complaints in an Environmental Incidents Register which will include the following information:

- Time, date and location of incident;
- Nature of incident;
- Personnel and machinery involved in incident; and
- Corrective measures taken in response to incident.

The MWF Project Manager will make available the Environmental Incidents Register to the Responsible Authority upon request.

## 6 Timetable for Implementation of Works

Table 3 shows the current work plan for MWF with construction work on site commencing at the end of June 2017, and commissioning and demobilisation at the site occurring in January 2018.

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**Table 2: Schedule of Works**

Works	Timing										
	2017							2018			
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Civil works											
Substation Construction											
22 kV Grid Works											
Turbine Construction											
Commissioning & Testing											
Turbines Operational											

As detailed later in this EMP, a range of environmental and management programs will be scheduled throughout the construction period and at regular intervals once the wind farm is operational. Table 3 shows the programs and their approximate timing.

**Table 3: Schedule of Programs**

Works	Timing													
	2017							2018					2019	
	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Q2	H2	H1	H2
Training Program														
Monitoring & Reporting														
Develop Biosecurity Risk Management Program														
Implement Biosecurity Risk Management Program														
Develop Emergency Response Plan														
Emergency Services Familiarisation Visit/s														
Installation of Water Tank														
Erosion Monitoring Assessments														
Cordoning of Environmental Values														

**Appendices—Environmental Sub-Plans**

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