Capital Wind Farm

Operational Environmental Management Plan

Document History

CWF-H-2008 (Old document number)

Date	Author	Version	Revision Notes	Approval
18/01/2010	Suzlon	1	Initial Release – Construction Phase	
18/08/2010	Suzlon	2	Updated to reflect management by OMS group	

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CPLW-OEMP

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27/10/2014	Infigen - AM	3.0	Changed from Repower document to Infigen document	
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Distribution List

Company	Position / Role
Infigen Energy (Renewable Power Ventures)	Website
Suzlon	NSW Service Manager
Suzlon	HSEQ Manager
NSW Department of Planning and Infrastructure	Representative
Palerang Council	Representative
Independent	Environmental Representative
NSW OEH (formally DECCW and DEC)	Representative

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Executive Summary

This Operation Environmental Management Plan (OEMP) has been prepared by Renewable Power Ventures Pty Ltd (RPV) and Suzlon Energy Australia Pty Ltd (SEA), to establish the management framework for environment issues relating to the operation phase of the Capital Wind Farm.

Capital Wind Farm is required to comply with 80 key conditions listed within the NSW Minister for Planning's Conditions of Approval issued on 7 November 2006. Details of modifications to these conditions are as follows:

Mod 1 – determined 3/08/07 – Condition 7 Planning agreement;

Mod 2- determined 4/08/08 – Additional four turbines;

Mod 3 – determined 8/12/08 – Relocation of 2 turbines;

Mod 4 – determined 9/02/09 –Condition 52 Construction Hours.

In general terms, the Proponent must implement all practicable measures to prevent and minimise any harm to the environment that may result from the construction, Commissioning, Operations, and Decommissioning of the Development (Condition 1).

The OEMP has been developed in accordance with Conditions 30 and 31 of the Minister's Project Approval (see table below).

Condition #	Condition	Proponent's Response
30	The proponent must implement an OEMP in accordance with the Department's publication entitled *Guideline for the Preparation of Environmental Management Plans (2004)* or its latest revision. The OEMP must be prepared in consultation with the relevant Government Agencies and Councils and must be certified by the ER as being in accordance with the Conditions of Approval. The OEMP is to be submitted for the approval of the Director General no later than one month prior to the commencement of Operation, or within such period otherwise agreed to by the Director General.	This document has been prepared in response to the requirements of Condition 30.
31	Operations must not commence until written approval of the OEMP has been received from the Director General. Upon receipt of the Director General's approval, the Proponent must supply a copy of the OEMP to the DEC and Councils as soon as practicable.	The proponent will comply with this Condition.

In addition to the requirements of Conditions 30 and 31, Conditions 32-34, 43, 59, 69 and 77 specify sub-plans that to form part of the OEMP. The sub-plans are provided with this OEMP as indicated in the Table below.

Condition #	Condition	Proponent's Response
32	An Operation Flora and Fauna Management Sub Plan must be prepared as part of the OEMP.	Flora and Fauna Management Sub Plan in Chapter 2
33	An Operation Soil and Water Management Sub Plan must be prepared as part of the OEMP.	Soil and Water Management Sub Plan in Chapter 3
34	A Bird and Bat Adaptive Management Program must be prepared as part of the OEMP	Bird and Bat Adaptive Management Program in Chapter 7
43	..... must develop and implement an Off-Site Landscape Sub Plan	Off Site Landscape Management Sub Plan in Chapter 8
57	..... must prepare a Noise Compliance Assessment Plan which must be submitted to the DEC prior to Commissioning of the wind turbines.	Noise Compliance Assessment Plan in Chapter 6
69	..... must prepare, in consultation with the Taylors Creek Rural Fire Service, a Bushfire Risk Management Sub Plan.....	Bushfire Risk Management Sub Plan in Chapter 4
77	..... must prepare Waste Management and Re-use Sub Plan.....	Waste Management and Re-use Sub Plan Chapter 5

All persons involved in the operation phase of the Capital Wind Farm project shall undertake their respective activities in accordance with the relevant requirements of this OEMP.

The OEMP shall be read in conjunction with all related Capital Wind Farm Health, Safety, and Environmental documents as well as the CWF Service Management Plan and CWF and WWF Emergency Response Plan.

The environmental impacts addressed in this OEMP reflect the scope and level of environmental protection and care and authorisations obtained during the operation phase of the project. It formalises the processes and procedures which will ensure compliance with the obligations set out in these documents, and that the appropriate levels of environmental standards are achieved.

References:

Plan: Capital Wind Farm – Service Management Plan

Plan: Capital and Woodlawn Wind Farm – Emergency Response Plan

Definitions

Term	Meaning
BBAMP	Bird and Bat Adaptive Management Program
Contractor	Suzlon, the organisation responsible for the total performance of the works under the Operations and Maintenance Agreement on behalf of SEA.
CWF	Capital Wind Farm
Emergency Response Plan (ERP)	A document that defines the procedures processes and contact details in the event of an emergency.
ER	Environmental Representative
HSEC	Health, Safety, Environment and Community
JSA/SWMS	Job Safety Analysis or Safe Work method Statement. A document that identifies and ranks the likelihood and severity of any potential risks and determines control measures required to mitigate those risks.
OEMP	Operation Environmental Management Plan
OMS	Suzlon's Operation, Maintenance and Service Group.
Proponent	Renewable Power Ventures Pty. Ltd.
RPV	Renewable Power Ventures Pty. Ltd.
SEA	Suzlon Energy Australia Pty Ltd. Part of the Suzlon Group.
Site	The area defined for the Capital Wind Farm.
SMP	Service Management Plan. Reference to this document which sets out the specific HSEC and Quality practices, resources, activities and responsibilities as prepared by Suzlon and as required by the Energy Safety, Safety & Standards Office of Fair Trading (NSW).
Subcontractor	Any company, body or person who is contracted to SEA, Suzlonor RPV for the purpose of supplying goods and/or services.
WTG	Wind Turbine Generator.
WWF	Woodlawn Wind Farm

Introduction

1.1 Background

Suzlon Energy Australia Pty Ltd is contracted by Renewable Power Ventures Pty Ltd to carry out the service and maintenance for the Capital Wind Farm, New South Wales.

The wind farm site is situated roughly half way between Goulburn and Canberra in the Southern Tablelands of NSW, and is geographically located to the east of Lake George on the Great Dividing Range and to the south west of Tarago and to the north of Bungendore.

Capital Wind Farm consists of 67 Suzlon S88 2.1 MW wind turbine generators (WTGs), an electrical substation to facilitate connection to an existing TransGrid 330 000 volt transmission line, facilities buildings, temporary and permanent wind monitoring towers, underground cables, a twelve kilometre internal overhead power line, access tracks, wind tower hardstands, and ancillary works.

The 67 turbines are distributed in three groups referred to as the Ellendon Group, Hammonds Hill Group and the Groses Hill Group. The 33,000 volt/330,000 volt substation is located to the south east of the Hammonds Hill Group of turbines.

All access tracks, hardstands, underground and overhead electrical lines have been constructed, and wind turbine generators have been erected. Following energisation of the substation on 3 July 2009, commissioning of the 67 turbines commenced on 3 July 2009. The electrical substation and the associated facilities and services buildings provide the automated control centre for the wind farm during operation.

1.2 Purpose and Objectives

The purpose of this OEMP is to:

- Provide a management framework that aims to control potential operation impacts on the environment. It includes practical and achievable performance requirements; mitigation strategies; a system of monitoring, reporting and auditing; and process for implementation of corrective action;
- Ensure all operation staff are made aware of the potential operation impacts on the environment, and the associated management strategies within which they are expected to conduct their activities;
- Provide evidence of compliance with relevant legislation, policies, guidelines and requirements to Local, State and Commonwealth Authorities, and;
- Provide stakeholders with the assurance that the operation of the site is being managed in an environmentally acceptable manner.

The objectives of this OEMP are to:

- Provide for the effective management of the environmental concerns and potential adverse environmental effects arising from the Capital Wind Farm project;
- Assign management responsibilities and to define reporting requirements;
- Identify appropriate impact mitigation measures and management strategies in response to potential adverse environmental effects;
- Establish a system to test the effectiveness of environmental management actions implementation, by way of audits and inspections.

The scope of the development and its environmental management is to be in accordance with the with 80 approval conditions listed within the NSW Minister for Planning's Conditions of Approval issued on 7 November 2006.

Details of modifications to these conditions are as follows:

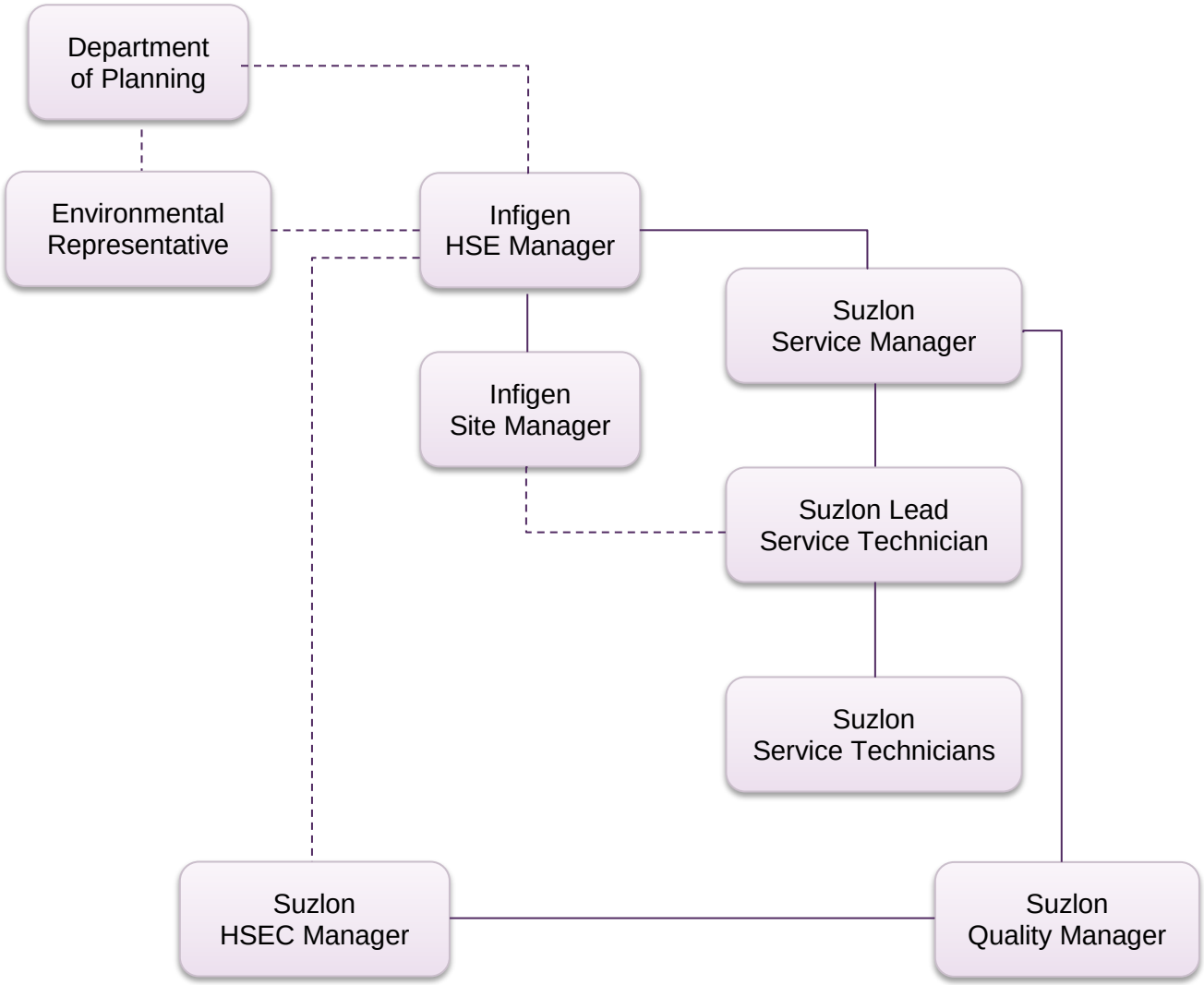
- Mod 1 – determined 3/08/07 – Condition 7 Planning agreement;
- Mod 2 - determined 4/08/08 – Additional four turbines;
- Mod 3 – determined 8/12/08 – Relocation of 2 turbines;
- Mod 4 – determined 9/02/09 – Condition 52 Construction Hours.

1.3 Environmental Management Structure and Responsibility

The Project Approval has been granted for Renewable Power Ventures Pty Ltd (RPV) and ultimate responsibility for the project implementation rests with RPV. RPV has engaged SEA to

operate the wind farm on its behalf according to the Project Approval conditions and to the extent of the contract arrangement.

The organisation structure that describes the environmental management hierarchy for the project is shown below.



The NSW Department of Planning has provided clear guidance for the project environmental management requirements through the Project Approval Conditions and expects the proponent to maintain systems that ensure compliance with these conditions and all associated approvals, permits, licences or agreements.

RPV has the responsibility to oversee the environmentally responsible implementation of the project, and requires its contractor (SEA) to conduct all its operations in accordance with the relevant requirements. To ensure compliance, RPV and SEA have:

- identified the approval and other statutory requirements;
- allocated responsibilities for management of issues;
- reviewed the proposed activities in the context of potential impacts;
- developed suitable environmental management controls to mitigate the project's impacts.

Details regarding the frequency and scope of environmental monitoring and recording, the complaints management system, and the emergency response system can be found in the management plans contained within this document.

1.4 Inspections, Audits, and Complaints

Suzlon's system for reviewing the environmental performance of operational activities will be based on regular inspections, audits, sound environmental monitoring programs, and an efficient complaints management system.

1.4.1 Incidents

All incidents and the responsive action taken are to be recorded using the Suzlon Incident Report Form, and must be completed and submitted to Health, Safety, Environment, and Community management within one hour wherever possible as per the Suzlon Incident Reporting Communication Protocol.

All serious environmental incidents shall be communicated to RPV and the ER within 24 hours. The Suzlon Service Manager shall be notified within 24 hours of the incident and shall determine the need and the timing for reporting to appropriate regulatory authorities.

Where an incident or potential incident occurs that is likely to cause significant off-site impacts on people or the environment, a report shall be supplied to the Department of Planning and Palerang Council detailing all relevant facts within 48 hours of the incident occurring.

A further detailed report outlining investigations of the causes and identification of additional preventative measures shall be submitted within fourteen (14) days of the incident (or as otherwise required by the regulatory authority).

An Incident Register of all environmental incidents, accidents or potential incidents shall be maintained by Suzlon. This register will be made available for inspection by appropriate regulatory authorities and RPV.

Emergency Response Plans for major and minor Hazardous Substance Spills and major erosion incidents are located within this OEMP (within the Soil and Water Management Sub Plan), as is the Emergency Response Plan for bushfire events (within the Bushfire Risk Management Plan).

Suzlon will review the environmental performance of service activities, and their compliance with this environmental management plan as part of their normal day to day inspections.

Six month inspections of site activities and environmental performance will be undertaken by Environmental Officer / RPV Site Manager/ Lead Technician using a site checklist, which will be kept in an on-site register.

The checklists and investigative reports for any incidents identified shall be forwarded to RPV on a monthly basis (or as otherwise agreed). The effectiveness of the inspections will be reviewed and where necessary, the level, scope and timing of inspections will be improved through the life of the project to achieve the required environmental performance.

References:

Procedure: Incident Reporting

Form: Incident Report

Form: Incident Report Communication Protocol

Register: CWF – Incident Register

1.4.2 Audits

Suzlon's Quality Manager, in conjunction with RPV, will carry out an audit of all operation management plans including the OEMP and its Sub-Plans once every year unless circumstances require these audits to be more frequent.

Non-conformances noted during an audit will be listed in a Corrective Action Register with required actions and completion dates assigned.

RPV's 3rd party independent auditor will also undertake annual audits of compliance with the OEMP and its Sub-Plans.

The Department of Planning and Palerang Council are also able to undertake audits of project compliance with approval conditions and relevant legislation at any time.

Reference:

Procedure: Internal Audits

Schedule: CWF – Audit Schedule

Register: CWF – Corrective Action Register

1.4.3 Complaints

Complaints may come from several avenues, for example the complaints line, direct contact with the client or client's representative, direct to the site manager by phone (telephone number is displayed on the site notice board) or by personal contact with staff at the site office.

Any complaints received from Government Departmental Officers, landowners, interest groups, or the general public shall be treated with respect. Should any complaints be received, they shall be recorded immediately on the Complaints Register by the Lead Technician. The Complaints Register will record the details of the complaint, action taken to investigate, any actions taken to address the problem, and any recommendations for further action.

An updated copy of the Complaints Register will be included in the monthly report and made available to the Environmental Representative upon request. Any complaints will be reported to RPV and managed by Infigen's Site Manager.

Provided initial investigations show the complaint is valid, the Lead Technician shall fully investigate the complaint, undertake all practical measures to immediately modify the activity causing the impacts, and complete an Incident Report Form, and submit this to Health, Safety, Environment, and Community management within one hour wherever possible as per the Incident Reporting Communication Protocol, undertake all practical measures to immediately modify the activity causing the impacts.

For complaints regarding significant matters, these shall be referred to Suzlon's Head of OMS, Service Manager, and the Environmental Representative within 24 hours.

Where appropriate, an initial response to the complainant will be provided within three (3) days of receipt of the complaint. An additional detailed response will be provided to the complainant within fourteen (14) days following receipt of the complaint.

Reference:

Register: CWF – Complaints Register

1.5 Environmental Policy

Infigen is committed to having a positive impact on the environment.

All employees, contractors (including Suzlon) and visitors are required to comply with the Environment Policy.

Infigen's Environment Policy can be viewed in any Infigen site building.

Suzlon is committed to achieving environmental superiority as the best renewable energy company in the world. The environmental management of all operations will focus on sustainable and minimal impact procedures, and will continually assess all operations to maintain compliance and identify opportunities for improvement.

As per its policy, the expectations of this policy will be communicated to all employees, subcontractors, and stakeholders. This will be achieved through site inductions for all personnel regularly working or visiting the site.

It is obligatory for all Suzlon subcontractors and suppliers to comply with all environmental requirements as outlined in this OEMP.

Suzlon's Environmental Policy can be viewed in any Suzlon site building.

Reference:

Policy:	Infigen Environment Policy
Policy:	Suzlon Environmental Policy

1.6 Corrective Action

The operation of Capital Wind Farm shall be undertaken to avoid instances of non-compliance with the project approval requirements and instances of environmental harm. In the event that a non-conformance involving failure to implement or adhere to the identified requirements of the OEMP or its Sub Plans does occur, the incident will be reported, investigated, and corrective action taken to ensure effective environmental management practices are maintained at all times on site.

Similarly, complaints may also occur in relation to the wind farm operation and require review. Results of such a review including any investigation findings and corrective action taken will be provided to the client.

A record of each incident or complaint, its investigation, and the action taken to prevent a reoccurrence must be recorded on the Incident Report Form, and should be completed and submitted to Health, Safety, Environment, and Community within one hour as per the Incident Reporting Communication Protocol.

Corrective actions required as a result of an incident or complaint will be recorded in the CWF Corrective Action Register.

Reference:

Register:	CWF – Corrective Action Register

1.7 Related Documentation

All persons involved with the operational phase of the Capital Wind Farm shall undertake their respective activities in accordance with the relevant requirements of the OEMP. The OEMP shall also be read in conjunction with the following related Suzlon documents which exist as separate documents:

- CWF - Service Management Plan
- CWF and WWF – Emergency Response Plan
- Site Induction Handbook (Service)

The operation will also be carried out in accordance with the following documents:

- Capital Wind Farm - Environmental Assessment - February 2006 (Volumes 1 and 2);
- Capital Wind Farm - Supplementary Environmental Assessments - March 2008 (Volumes 1 and 2) and November 2008;
- The consolidated Conditions of Project Approval.

If there is any inconsistency between the Conditions of Approval and a document listed above, the Conditions of Approval shall prevail to the extent of the inconsistency. If there is any inconsistency between documents listed above (other than the Conditions of Approval) then the most recent document shall prevail to the extent of the inconsistency.

1.8 Key Emergency Service Contact Details

Organisation	**Telephone Number**
All Emergencies (Fire, Ambulance, Police)	000
NSW Rural Fire Service	000
NSW State Emergency Services	000
Goulburn Hospital	(02) 4827 3111
Queanbeyan Hospital	(02) 6298 9211
Canberra Hospital	(02) 6244 2222
Poisons Information Centre	131 126
WIRES (Wildlife Rescue)	1300 094 737
State Emergency Services - Palerang	0429 033 371

1.9 Other Key Environmental Contact Details

Organisation	Telephone Number	To be notified by RPV or Lead Service Technician when…
NSW Department of Planning and Infrastructure	Sydney HO 02 9228 6111 Queanbeyan 02 6229 7900	Any non-compliance with approval conditions or any proposed departure from the conditions of Project Approval
Palerang Council (Appropriate regulatory authority under the POEO Act)	02 6238 8111	Major hazardous substance spills or erosion events, especially those that impact upon waterways.
NSW OEH (formally DECCW)	131 555	Advice in relation to clean-up of spills or leaks or restoration of site.
NSW OEH (formally DECCW)	Queanbeyan 6229 7000	Significant impact on Flora or Fauna

Flora and Fauna Management Sub Plan

2.1 Introduction

This Flora and Fauna Management Sub Plan comprises part of the Operation Environmental Management Plan for the Capital Wind Farm. This sub plan has been developed in response to Condition number 32 of the Minister of Planning's Conditions of Approval.

Condition 32 requires the preparation of a Flora and Fauna Management Sub Plan. It is to be prepared to form part of the Operation Environmental Management Plan and include;

(a) plans showing terrestrial vegetation communities, important flora and fauna habitat areas, areas to be protected, and areas to be planted;	See section 2.6.3.
(b) methods for managing flora and fauna and their habitats which are directly or indirectly affected by the Development;	See section 2.4.
(c) the mitigation measures outlined in Section 7.6 of the Environmental Assessment report; and	See section 2.4.
(d) strategies to control the spread of weeds during Operation.	See section 2.6.

It must be noted that the site disturbance associated with the construction works will not continue during the operation phase.

Remaining rehabilitation works of disturbed areas will be completed and monitored to ensure they meet the set performance criteria (Section 2.3).

2.2 Legislative Requirement and Guidelines

Key legislative requirements relevant to flora and fauna management are listed in Table 2.2.1 below.

Table 2.2.1: Key legislative requirements

Legislation / Guideline	Brief Description
Environmental Planning and Assessment Act 1979	Project Approval Conditions
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The EPBC Act relates to projects likely to have a significant impact on matters of national environmental significance. This includes world heritage properties, Ramsar wetlands of international importance, nationally threatened animal and plant species and ecological communities, internationally protected migratory species, Commonwealth marine areas and nuclear actions. Expert assessment of species and communities in the vicinity of the project has concluded that the development is "not likely to have a significant effect on any species or ecological communities listed under the EPBC Act, or their habitats".
Threatened Species Conservation Act 1995 (TSC Act)	The TSC Act provides for protection of threatened species, populations and ecological communities as well as areas of critical habitat. Expert assessment of species and communities in the vicinity of the project has concluded that "the development of the wind farm is not likely to have a significant effect on any threatened species,

	populations or ecological communities listed under the TSC Act, or their habitats".
National Parks and Wildlife Act 1974	This Act allows for the reservation of land, protection of sites of Aboriginal significance and protection of native flora and fauna.
Native Vegetation Act 2003	The NV Act is in place to protect native vegetation particularly that of high conservation value, by managing broadscale clearing, revegetation, and rehabilitation of native vegetation. Development consent granted in accordance with this Act, or the creations of property vegetation plans are required before broadscale activities can be undertaken.
Noxious Weeds Act 1993	The Minister for Primary Industries has the responsibility for managing and declaring noxious weeds under the Act. There are five classes of noxious weeds which are subject to control objectives under the Act.
Fisheries Management Act 1994 (FM Act)	The FM Act provides for the protection of threatened aquatic species, populations and ecological communities as well as areas of critical habitat. There are no aquatic habitats on site that support threatened aquatic species.
State Environmental Planning Policy No. 44 - Koala Habitat Protection (SEPP 44)	The policy aims to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas. A stand of Manna Gum Eucalyptus viminalis has been identified in the vicinity of the project area. Clearing of these trees will be avoided and therefore potential impacts on koala habitat are minimised.

2.3 Performance Criteria

The performance criteria for the Capital Wind Farm OEMP Flora and Fauna Management Sub Plan are:

- No further disturbance to vegetation or habitat surrounding turbine sites, access tracks, cable routes, substation site and site office (see potential impacts listed in Table 2.4.1),
- Protection of the high value Yellow Box Woodland and secondary grassland to the south east of the Hammonds Hill site and adjacent to Bungendore Road through maintenance of fencing to exclude grazing;
- Landscaping / revegetation areas to achieve a 90% survival rate,
- All disturbed areas to be treated by establishing grass cover that will provide effective control of erosion and subsequent sediment transport.
- No additional weed species introduced to the site and no spread of existing weeds within the site.

2.4 Potential Impacts and Mitigation Strategies

The majority of the turbine sites, access routes, cable routes and the substation site occur on cleared land with a long history of grazing, which minimises the potential for wind farm activities to impact native flora and fauna. Valuable native flora and fauna is present on parts of the project site, however, and the potential impacts and effective mitigation strategies to avoid these impacts must be addressed.

When identifying potential flora and fauna impacts during the operation phase, the potential for avifauna coming into contact with moving wind turbine blades must also be considered. Project Approval Conditions require a separate management plan to be developed for this, the Bird and Bat Adaptive Management Plan, which can be found in section 7.

Potential impacts and mitigation strategies are identified in Table 2.4.1 and will be communicated to site staff and contractors during site inductions, during which sensitive flora and fauna areas will also be identified to them, as well as any activities or works that could present a risk to sensitive areas.

Table 2.4.1: Potential impacts on flora and fauna and mitigation strategies to avoid these impacts

Activity	Potential Environmental Impacts	Mitigation Strategies	Responsibility	
			RPV	Suzlon
Driving off access tracks	Damage to native vegetation, threatened species or populations.	Site Induction: All visitors to site and all site personnel will be inducted, during which they will be issued a map of the site and instructed to drive only on access tracks and hardstands.		✓
	Damage to completed revegetation.			
	Introduction and spreading of weeds to other areas.			
	Disturbance to aquatic habitat at creek / drainage line crossings.			
Vehicle wash-down	Soil erosion and contamination of dams on site.	Site Induction: Vehicles are to be washed down on laydown areas - runoff from vehicle wash-down must not enter drainage channels that run into dams.		✓
Site rehabilitation / revegetation	Spreading of weeds.	See 2.6 - Weed Management Strategy.		✓
	Damage to existing vegetation.	Rehabilitation and revegetation activities will be planned to minimise impact upon surrounding landscape.		✓
	Inadequate vegetation regrowth resulting in future erosion.	The success of all revegetation will be monitored and re-sown/planted if required. Competition from weeds will be minimised by weed spraying where appropriate with authorised herbicides only.		✓
	Damage to sensitive revegetated areas due to trampling and grazing by farm stock and wild animals.	All site landowners will be updated on the progress of the revegetation program throughout the site so they can manage their stock		✓

		accordingly.		
Unauthorised / Unnecessary clearing of vegetation	Loss of native vegetation and habitat.	No further vegetation is to be cleared unless all necessary approvals are obtained. Environmental Officer to review all requests for clearing, ensure appropriate approvals are obtained, and that minimum disturbance is caused.		✓
Inadequate erosion and sedimentation controls	Erosion and sedimentation can cause smothering of vegetation, reduce the stability of trees, and result in loss of habitat.	Maintenance of erosion and sediment controls and regular monitoring to identify any deficiencies.		✓
Grey water and sewerage discharge	Uncontrolled discharge causing over-saturation of soil or excess nutrient input into environment causing harm to existing flora and fauna.	Installation, monitoring, and scheduled maintenance of Biolytixs™ biological wastewater treatment system.		✓
Bird and bat fauna impacts	Incidents of blade strike or disturbance to bird or bat habitat.	See Bird and Bat Adaptive Management Plan (Section 7).	✓	✓

2.5 Monitoring and Reporting

Monitoring and Reporting	Responsibility	Source of Requirement
Monitor grass revegetation and tree planting areas to ensure at least 90% survival rate. Replant and re-sow as necessary.	Suzlon	
Monitor revegetation areas to ensure the effective stabilisation of disturbed surfaces. Replant and re-sow as necessary.	Suzlon	Conditions of Approval 19
Monitor success of all vegetation planted for screening purposes and ensure establishment of vegetation screen is effective.	Suzlon	Conditions of Approval 42 (b)
Monitor integrity of stock-proof fencing around Yellow Box Community at the entrance to the substation site. To be inspected on an annual basis.	Suzlon	Conditions of Approval 27 (d)
Monitor areas disturbed by wind farm earthworks for enhanced weed growth. Organise eradication of weeds as necessary (See 2.6.1 - Weed Management Strategy).	Suzlon	Conditions of Approval (32).

Report on flora and fauna management controls as part of the *Environmental Impact Audit - Operation* within three months of after a 24 month period of operation.	Suzlon	Conditions of Approval (19).

All incidents, complaints, and responsive action taken are to be recorded using the Incident Report Form, and must be completed and submitted to Health, Safety, Environment, and Community management within one hour wherever possible as per the Incident Reporting Communication Protocol.

2.6 Weed Management Strategy

Eleven introduced species declared as noxious weeds under the Noxious Weeds Act 1993 were identified from the site during the flora survey for the Environmental Assessment. These species are listed in Table 2.6.1 below. There is a legal requirement for owners/occupiers of land to control noxious weeds; however Suzlon has a responsibility to ensure that enhanced weed growth does not occur in area disturbed by the wind farm project.

Table 2.6.1: Noxious weeds identified from the site

Scientific Name	Common Name	Noxious Weed Class*
Nassella trichotoma	Serrated Tussock	4
Echium plantagineum	Patersons Curse	4
Onopordum acanthium	Scotch Thistle	4
Ulex europaeus	Gorse	3
Hypericum perforatum	St John's Wort	3
Lycium ferocissimum	African Boxthorn	4
Cytisus scoparius	English Broom	4
Rosa rubiginosa	Sweet Briar	4
Rubus fruticosus	Blackberry	4
Oxalis sp.	Wood Sorrel	5
Salix sp.	Willow	5

** definitions provided below*

Class 3

Class 3 noxious weeds are plants that pose a serious threat to primary production or the environment of an area to which the order applies, are not widely distributed in the area and are likely to spread in the area or to another area. The plant must be fully and continuously suppressed and destroyed.

Class 4

Class 4 noxious weeds are plants that pose a threat to primary production, the environment or human health, are widely distributed in an area to which the order applies and are likely to spread in the area or to another area.

Class 5

Class 5 noxious weeds are plants that are likely, by their sale or the sale of their seeds or movement within the State or an area of the State, to spread in the State or outside the State.

Weed Control Methods

The recommended weed control methods for the noxious weeds identified from the site are outlined in the table below. These methods are a guide only and any chemical control techniques must be undertaken in accordance with the guidelines on the product label and in consultation with the landowners. Mechanical control techniques undertaken for any large infestations that may be present should also be undertaken in consultation with the landowner.

The methods outlined in Table 2.6.2 below are generally for scattered or light infestations which may be present within or in the vicinity of areas of the site associated with the wind farm. Heavy or more widespread infestations may require different techniques to those outlined below in Table 2.6.2 and would need to be undertaken in conjunction with other land management practices such as spelling or sowing pastures and varying grazing pressure depending on the characteristics of the weed to be controlled.

Table 2.6.2: Noxious weed control methods

Scientific Name	Common Name	Control Method	
		Mechanical	**Chemical**
Nassella trichotoma	Serrated Tussock	Remove by chipping.	Spot spray with a registered herbicide.
Echium plantagineum	Patersons Curse	Chipping of young plants to remove 20-40mm of the tap root.	Spot spray from rosettes to pre-flowering stage with a registered herbicide.
Onopordum acanthium	Scotch Thistle	Chipping of single plants to remove at least 50mm of the root.	Spot spray with a registered herbicide.
Ulex europaeus	Gorse	Physical removal of bushes with follow up to kill seedlings.	Apply herbicide as per label instructions, either spot spray or cut stump application. Generally apply to actively growing plants (during spring to early summer and after autumn rain).
Hypericum perforatum	St John's Wort	Manually remove the plant and as much of the root stock as possible, preferably before seeding.	Spot spray with a registered herbicide.
Lycium ferocissimum	African Boxthorn	Small plants can be dug up while large plants may require heavy machinery. All plants should be destroyed as dead plants may provide shelter for vermin. Once plants are removed monitor the area and remove any regrowth for root sections or germinating seedlings.	Use a registered herbicide in accordance with the label instructions. Herbicide should only be applied when plants are leafy and actively growing.
Cytisus scoparius	English Broom	Remove small plants by hand or cut larger plants at ground level and treat stumps with herbicide. Preferably remove plants before flowering (generally October to December).	Spot spray with a registered herbicide when plants are in full leaf. Treat any cut stumps with applicable herbicide.
Rosa rubiginosa	Sweet Briar	Removal of plants by machine or hand being careful to remove as much of the plants as possible as regrowth often occurs	Spot spray with a registered herbicide when plants are in full leaf (late spring to autumn).

		from root pieces.	
Rubus fruticosus	Blackberry	Remove small plants with a shovel or mattock and larger plants using earth moving equipment. Remove as much of root system as possible as Blackberry will regrow from any root fragment left in the soil.	Spot spray with a registered herbicide on actively growing plants.
Oxalis sp.	Wood Sorrel	Remove entire plant by hand including the Bulbs.	Spot spray with a registered herbicide.
Salix sp.	Willow	Remove seedlings by hand. Use heavy machinery to remove large trees. Be aware that broken branches pushed into the soil will generate a new plant.	If willows are located near waterways, use a herbicide registered for use near waterways. Spot spraying of juvenile plants can be undertaken while they are vigorously growing. Stem injection of mature trees. Paint stumps of trees after lopping.

2.7 Flora Species Suitable for Revegetation

The following species are indigenous to the area and are suitable for revegetation and landscaping:

Table 2.7.1: Flora species suitable for revegetation

Scientific Name	Common Name
Eucalyptus rossii	Scribbly Gum
Eucalyptus dives	Broad-leaved Peppermint
Eucalyptus pauciflora	Snow Gum
Eucalyptus melliodora	Yellow Box
Acacia implexa	Hickory
Acacia falciformis	Broad-leaved Hickory
Acacia mearnsii	Black Wattle
Acacia dealbata	Silver Wattle
Leptospermum myrtifolium	Grey Tea-tree
Persoonia linearis	Narrow-leaved Geebung
Ozothamnus diosmifolius	Everlasting
Pimelia curviflora	Curved Rice-flower
Lomandra longifolia	Spiny-headed Mat Rush
Lomandra filiformis	Wattle Mat Rush
Goodenia hederacea	Forest Goodenia

Viola hederacea	Ivy-leaved Violet
Dianella caerulea	Flax-lily
Danthonia carphoides	Short Wallaby Grass
Stipa bigeniculata	Tall Speargrass
Themeda australis	Kangaroo Grass
Microleana stipoides	Weeping Grass
Panicum effusum	Hairy Panic

Operation Soil and Water Management Sub Plan

3.1 Introduction

This Soil and Water Management Sub Plan comprises part of the Operation Environmental Management Plan for the Capital Wind Farm. This sub plan has been developed in response to the Minister for Planning's Conditions of Approval (7 November 2006, modified 4 June 2008).

Condition number 33 of the Minister of Planning's Conditions of Approval requires the preparation of a Soil and Water Management Sub Plan. It is to be prepared to form part of the Operation Environmental Management Plan and;

(a) include regular inspection of disturbed ground, particularly after rain, to ensure sediment control devices are maintained;	See Sections 3.4, 3.5
(b) incorporate the use of appropriate containment facilities for chemical storage, bunding around the substation transformers and pad-mount transformers, and facilities building to prevent discharge to the ground; and	See Section 3.4
(c) include measures to maintain site tracks to prevent erosion and discharge of sediment from the site.	See Section 3.4, 3.5

3.2 Key Legislative Requirement and Guidelines

Key legislative requirements relevant to the project's soil and water management include:

Legislation / Guideline	Brief Description
Protection of the Environmental Operations Act 1997	Includes provisions relating to contamination – Appropriate regulatory authority is local Council as site is not a "Scheduled Premises".
Soil Conservation Act 1938	The Commissioner of Soil Conservation may issue notices in respect of activities that cause erosion or degradation of certain land to conserve soil.
Work Health and Safety Regulation 2011	Relates to the handling and storage of certain Dangerous goods identified in the Regulation.
Local Government Act 1993	Purpose is to properly manage, develop, protect, restore, enhance and conserve the environment of the area for which the local government is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development.

Key environmental guidelines relevant to the project's soil and water management include:

- Guidelines for the Control of Erosion and Sedimentation in Roadworks (undated) NSW Roads and Transport Authority;
- Guidelines for the Planning, Construction and Maintenance of Tracks (1994) NSW Department of Land and Water Conservation;
- Managing Urban Stormwater: Soils and Construction – Installation of Services (Draft) (2004) Landcom;
- Managing Urban Stormwater: Soils and Construction – Unsealed Roads (Draft) (2004) Landcom;
- Constructed Wetlands Manual (1998) NSW Department of Land and Water Conservation.

3.3 Performance Criteria

The performance criteria for the Capital Wind Farm Operation Farm Soil and Water Management Sub Plan are:

- no erosion and sediment transport within or beyond turbine hardstands, access tracks, electrical cable routes, laydown areas, the substation site, or to the adjacent landscape as a result of these works;
- no transportation of hazardous substances beyond designated storage areas;
- landscaping and revegetation works are to stabilise disturbed landscape and have a 90% success rate for ground coverage.

3.4 Potential Impacts and Mitigation Strategies

The project site has a highly sensitive landscape due to soil types which erode easily, weather extremes ranging from drought to heavy rains, and the proximity of the site to the Lake George basin, an area listed on the National Directory of Important Wetlands.

Table 3.4.1 below considers potential impacts associated with soil and water management and presents mitigation strategies for these impacts, and Table 3.4.2 shows the containment facilities associated with key features of the wind farm.

Table 3.4.1: Potential impacts and mitigation strategies associated with soil and water management

Potential Impacts	Mitigation Strategies	Responsibility	
		RPV	Suzlon
Erosion of civil works and subsequent sediment transport to surrounding landscape causing environmental impact.	Establish monitoring and reporting system for inspecting all soil and water management controls Continue maintenance program for all civil works with the objective of reducing the extent of maintenance works required as areas are effectively stabilised. Establish emergency response procedures (see 3.6)		✓
Spill or leak of hazardous substances into surrounding landscape including drainage channels.	Hazardous Substances Register containing Material Safety Data Sheets (MSDS) for all substances on site will be maintained by a designated Safety Officer. A Job Safety Analysis (JSA) incorporating any relevant MSDS must be completed prior to commencing any task involving hazardous substances. Only suitably trained persons shall handle or use hazardous substances. Storage of hazardous substances must be in designated, bunded, and secure hazardous substance storage containers and/or areas that are located away from depressions and drainage lines that carry surface water. Refer to Suzlon Procedure: Hazardous Chemicals Hazardous goods storage containers and areas		✓

	to be inspected for deterioration monthly Hydrocarbon spill kits shall be provided by Suzlon and placed on site to manage any spills that may occur. All hazardous substances must be disposed of correctly (see section 5).		
Excessive dust clouds impacting on the project site area and neighbouring properties as a result of dry roads and/or vehicles driving on dry roads.	A maximum speed limit of 40kph will be adhered to at all times in all areas of the site. Additional control measures such as wetting roads and hardstands or applying dust suppressant products to work areas/roads may be adopted if required.		✓

Table 3.4.2: Containment facilities associated with key features of the wind farm.

Key Feature	Containment Facility
Chemical storage in control room	Chemical cupboard/s conforming to Australian Standards to be used for storing all required chemicals in control room.
Substation transformers	Transformers are bunded. An oil interceptor system has been incorporated into the substation drainage design as a secondary measure.
Pad-mount transformers	Transformers are self-bunded.
Facilities building	All wastewater from the site kitchen and toilet facilities is treated by a biological wastewater treatment system and then discharged into an adjacent designated fenced zone.

All incidents, complaints, and responsive action taken are to be recorded using the Incident Report Form, and must be completed and submitted to Health, Safety, Environment, and Community management within one hour wherever possible as per the Incident Reporting Communication Protocol.

3.5 Monitoring and Reporting

The Department of Planning and Palerang Council have the authority to periodically review the implementation of this operational environmental management plan, and direct improvements if the project is being conducted contrary to approval conditions and this environmental management plan or if they have a concern that harm to the environment may occur.

It is understood that the Department of Planning will audit and enforce the conditions of approval granted by the Minister of Planning. As the project is a non-scheduled premises under the POEO Act, Palerang Council is the Appropriate Regulatory Authority (ARA).

Routine and event-based site environmental inspections on all soil and water management control measures will be undertaken by Suzlon (see Table 3.5.1.) to ensure appropriate mitigation measures and controls are being provided and that they are effectively achieving the aforementioned performance criteria.

Table 3.5.1: Inspection and reporting responsibilities for soil and water management.

Inspection Description	Frequency
Informal visual checks of soil and water management control measures by site personnel to ensure that control measures provided are effective and are functioning correctly.	Day to Day

Environmental monitoring checklist Compliance Inspection - Environmental for all areas of site to be completed by Suzlon personnel. This will be filed on site and made available to the client upon request.	Six Monthly
Inspections by the Site Manager, Lead Technician, or HSEC personnel following • significant rainfall (ie > 20 mm/ 24 hours) or when site staff observe active erosion events affecting >10m^2 of landscape or resulting in >5m^3 of sediment transport or • Where site staff observe active erosion events effecting greater than 10m^2 or sediment transfer involving greater than 5 m^3.	Event or observation based

An environmental monitoring checklist Compliance Inspection - Environmental has been prepared that includes items relevant to soil and water management. The following areas will be inspected six monthly or when extreme events such as indicated in the above table:

- Groses Hill Group,
- Link Road (Groses Hill to Ellendon),
- Ellendon Group,
- Hammonds Hill Access Road (Ellendon to Hammonds Hill),
- Hammonds Hill Group,
- Cable trench from WTG 44 to the Substation,
- Overhead Powerline routes
- Substation and surrounds.

All soil and water management issues of concern should be recorded on the Compliance Inspection – Environmental.

Minor non-conformances shall be noted in the CWF Hazard Observation Register, and more serious (those requiring more than 7 days to address) shall be recorded in the CWF – Corrective Action Register.

Reference:

Form: Inspection Checklist – Environmental Compliance

Register: CWF – Hazard Observation Register

Register: CWF – Corrective Action Register

3.6 Emergency Response Procedures

Relevant emergency services should be contacted whenever lives are in danger or serious injuries occur (see CWF – Emergency Response Plan) for emergency services contact details).

Three potential environmental issues requiring emergency response procedures that have the potential to occur during the operation of the Capital Wind Farm site have been identified:

- hazardous material spills,
- major erosion events, and
- bushfires.

Refer to the Capital Wind Farm Emergency Response Plan for emergency response arrangements.

Reference:

Plan: CWF and WWF– Emergency Response Plan

Bushfire Risk Management Sub Plan

4.1 Introduction

This Bushfire Management Sub Plan comprises part of the Operation Environmental Management Plan for the Capital Wind Farm. This sub plan has been developed in response to the Minister for Planning's Conditions of Approval (7 November 2006, modified 4 June 2008).

Condition number 69 of the Minister of Planning's Conditions of Approval requires the preparation of a Bushfire Risk Management Sub Plan. It is to be prepared to form part of the Operation Environmental Management Plan and include;

(a) Details of the bushfire hazards and risks associated with the development;	See Section 4.2
(b) Mitigation measures including contingency plans;	See Sections 4.2 & 4.3
(c) Procedures and programs for liaison and regular drills with the Taylors Creek Rural Fire Service; and	See Section 4.3
(d) Procedures and programs for regular fire prevention inspections by the Taylors Creek Rural Fire Service and implementation of any recommendations.	See Section 4.3

4.2 Bushfire Hazards, Risks, and Mitigation Measures

Hazard	Risk	Mitigation Measures	Responsibility	
			RPV	Suzlon
Use of tools that may create sparks (eg. cutting and welding).	Ignition of trees, bushes, &/or grasses and escalation of situation into a mobile bushfire.	Hot Works Permits not to be issued on Total Fire Ban Days or on days with high wind present. Fire blankets, shields, extinguishers, and any other fire prevention devices identified in the JSA for the task must be present. Appropriate fire extinguishers located around substation, in all vehicles, and in all wind towers.		✓
Electrical short circuit, malfunction, or explosion.		All electrical tools to be tested and tagged monthly. Required servicing on all electrical equipment to be carried out as per product manuals and standard procedures. Appropriate fire extinguishers located around substation, in all vehicles, and in all wind towers.		✓
Cigarette smoking and disposal of butts.		Smoking permitted only on laydown areas where appropriate disposal units are provided.		✓

		Appropriate fire extinguishers located around substation, all vehicles, and all wind towers.		
Catalytic converters on petrol driven vehicles.		Only diesel operated vehicles to be used on un-constructed roads and at all other times where possible. Appropriate fire extinguishers located in all vehicles.		✓
Inadequate storage of combustible or flammable substances.		All Hazardous Substances and Dangerous Goods must be kept in secure storage facilities according to the regulations and designation of the MSDS requirements. Appropriate fire extinguishers located around substation, in all vehicles, and in all wind towers.		✓

4.3 Bushfire Contingency Plan

There are three scenarios associated with bushfires that could cause an emergency situation affecting all people on the wind farm site:

(a) a Total Fire Ban is announced by the authorities;
(b) a bushfire is known to be nearby/approaching the windfarm site;
(c) a bushfire originates within the wind farm site or is travelling through the site.

Refer to the Capital Wind Farm Emergency Response Plan for response arrangements for these scenarios.

Reference:

Plan: CWF and WWF Emergency Response Plan

Waste Management and Re-use Sub Plan

5.1 Introduction

This Waste Management and Re-Use Sub Plan comprises part of the Operation Environmental Management Plan for the Capital Wind Farm. This sub plan has been developed in response to the Minister for Planning's Conditions of Approval (7 November 2006, modified 4 June 2008).

Suzlon procedure Waste Management applies for waste management activities at the Capital Wind Farm. Suzlon is responsible for managing all waste at Capital Wind Farm according to this procedure.

Condition number 77 of the Minister of Planning's Conditions of Approval requires the preparation of a Waste Management and Re-use Sub Plan for inclusion as a part of the Operation Environmental Management Plan. The sub plan must address the management of wastes during the Operation stage in accordance with the NSW Government's Waste Reduction and Purchasing Policy. The sub plan(s) must identify requirements for:

(a) the application of the waste minimisation hierarchy principles of avoid/reduce/ reuse/recycle/dispose;
(b) minimising the volume of wastewater produced and include, as a minimum, a commitment to install AAA-rated water conservation devices in the control room / facilities building;
(c) waste handling and storage. The human wastewater management system is to be designed according to the guidelines entitled "On-site Sewage Management for Single Households" and the AS/NZS 1547-2000 – "On-site Domestic Wastewater Management";
(d) disposal of wastes. Specific details must be provided for cleared vegetation, contaminated materials, glass, metals and plastics, hydrocarbons (lubricants and fuels) and sanitary wastes; and
(e) any waste material that is unable to be re-used, re-processed or recycled, which must be disposed at a facility approved to receive that type of waste.

Reference:

Procedure: Waste Management

5.2 Waste Minimisation

5.2.1 General

Suzlon is committed to the waste minimisation hierarchy principles (Fig. 5.2.1) for all its activities associated with the operation stage of Capital Wind Farm. This waste management plan aims to minimise waste by maximising reduction, re-use, and recycling of all relevant items.

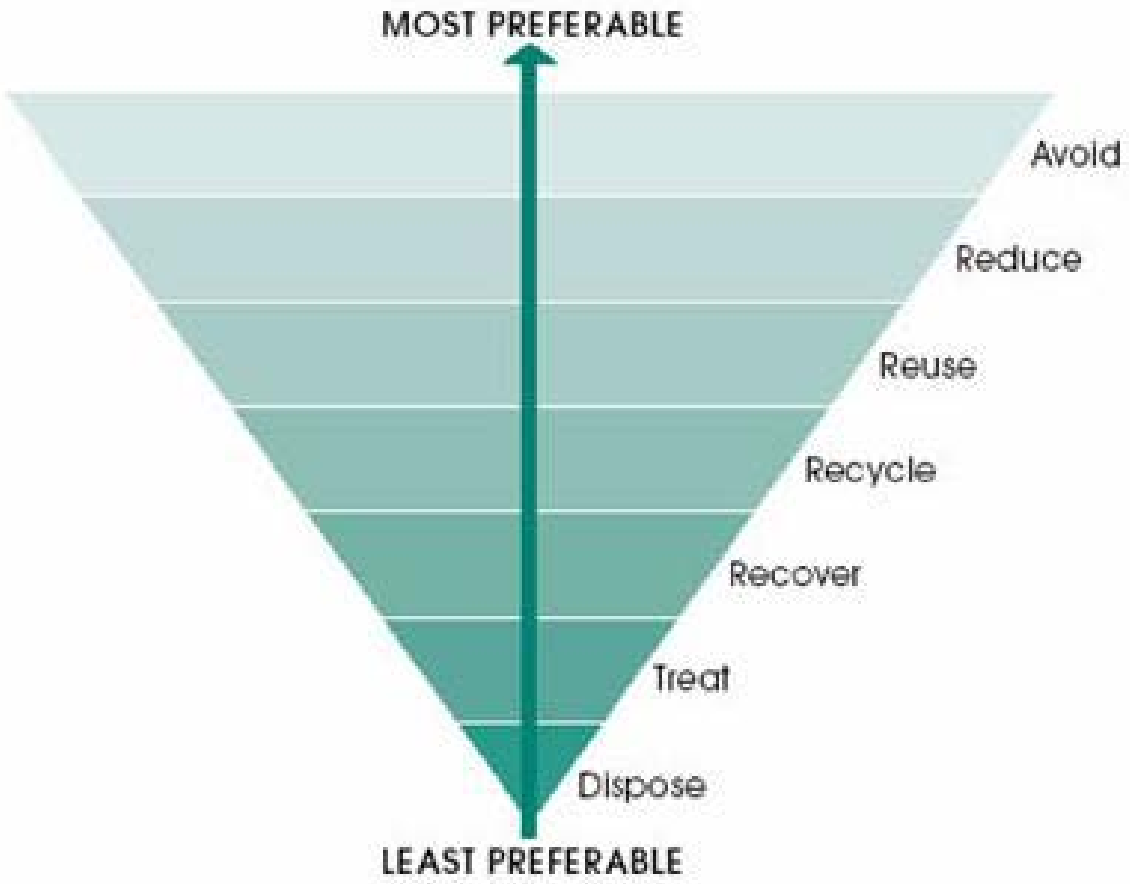


Figure 5.2.1: Waste Minimisation Hierarchy Principles arranged in ascending order from least preferable to most preferable (Source: www.epa.sa.gov.au)

5.2.2 Waste Avoidance/Reduction

Wherever possible the following measures should be implemented on site to avoid/reduce the generation of waste:

- Plan to source materials in correct quantities and size;
- Order pre-cut and/or prefabricated materials wherever possible;
- Fabricate materials offsite wherever possible;
- Plan to purchase materials in quantities that reduce packaging;
- Organise to return packaging to supplier or re-use packing wherever possible;
- Minimise the need for re-work through efficient construction planning.

5.2.3 Waste Re-use

Reuse of materials should be maximised by:

- Reuse of earthen fill or access track/hardstand capping for rehabilitation or maintenance applications;
- Organise to return packaging to supplier or re-use packing wherever possible;
- Reuse of felled trees by mulching trees and using material for revegetation applications;
- Reuse of any cattle grids that are no longer required in current position during operation phase.

5.2.4 Waste Recycling

Bins/skips will be located around the site to ensure efficient waste separation for non-recyclable waste, paper and cardboard, glass/recyclable plastics, scrap metal and tins, timber and concrete.

Bins will be clearly labelled, have secure lids which are kept closed, will not be overfilled, and should be emptied at fixed intervals or as soon as full.

5.2.5 Wastewater Management

Wastewater from the O&M Office and workshop buildings is minimised through the installation of AAA-rated water conservation devices, and is managed using a biological wastewater treatment system developed by Biolytix Technologies incorporating the Biolytix® Filter Model BF6. This system meets all requirements of AS/NZS 1547 - 2000 as required by the Project Approval Conditions.

Following the completion of a SepticSafe Local Approval Application, Suzlon obtained an approval for an On-Site Sewerage Management Facility from Palerang Council. A requirement of the SepticSafe Local Approval Application was an Effluent Disposal Report prepared by a qualified Soil Scientist. This report assessed Capital Wind Farm's wastewater management requirements, and used a systematic approach to land use planning, site assessment, and the selection, design and operation of an human wastewater management system as recommended by Environment and Health Protection Guidelines for On-Site Sewage Management for Single Households. The requirements and guidelines of the local council, Palerang Council, were also used during this planning and assessment process.

The Biolytix® system installed at Capital Wind Farm consists of a holding tank where the wastewater is biologically treated, and a subsurface drip-irrigation system which pumps the treated wastewater from the tank to a fenced and mulch-covered subsurface discharge zone within the landscape immediately adjacent to the substation.

5.2.6 Disposal of Wastes

Disposal will be viewed as the last option in the management of waste if avoidance/ re-use or recycling is not practical.

Waste materials, which cannot be either re-used or recycled, are to be removed from site by a suitably qualified and experienced waste contractor and disposed of to a facility that may accept that category of waste.

A register of waste removed from the site will be maintained by site administration. This register will detail the type of waste removed from site, the quantity, the contractor who removed the waste and the destination for the particular waste. This data will be recorded on the Waste Register, and will be used by Suzlon to monitor and evaluate the success of the waste management system implemented on the site, and to identify any areas that require further action (Fig. 5.2.6).

Figure 5.2.6: Process by which waste management system will be monitored and evaluated, and improved where necessary through identification and action in any areas that may require further action.

To further ensure compliance with this management system the following measures will be carried out:

Inspect waste receptacles to check that materials are segregated and recycled as appropriate;

Incorporate the inspection of site waste management practices into regular site environmental audits.

Reference:

Procedure: Waste Management

Form: Waste Disposal

Noise Management and Compliance

6.1 Noise Management

6.1.1 Introduction

The wind farm is associated with several noise sources including:

- Wind turbines – 67 Suzlon S88 2.1 MW wind turbines (maximum noise level of 105.9 dB at rated power)
- Substation (33kV/330kV) including two 80MVA transformers – noise levels vary with load and level of wind farm operation – can be associated with tones
- Site activities, operations staff movements on site and maintenance activities at times involving cranes, power tools and mobile plant to maintain tracks as well ongoing site restoration activities – noisy activities to be conducted during the approved construction hours unless approval of the Department of Planning is obtained.

The operator is required to ensure that the wind farm operation complies with the Project Approval requirements.

The Project Approval requirements relating operational noise are set out in Section 6.1 of this OEMP.

6.1.2 Operational Noise

The operational noise criteria specified by Project Approval Condition 53 states that the noise generated by the development must not exceed the equivalent noise level ($L_{Aeq,\ 10}$) adjusted for any tonality as presented in the tables below:

Wind speed (m/s) 10m height	Noise level $L_{Aeq\ (10minutes)}$ – at receiver locations as described in EA					
	Lakoona (G4)	Widgemore (G6)	La Granja (G10)	The Patch (H15)	Wroxham (H24)	(E7)
0-4	35	35	35	35	35	35
5	35	35	35	35	35	35
6	35	35	35	35	35	35
7	35	35	36	35	35	36
8	35	35	37	35	35	36
9	35	35	37	35	35	37
10	35	35	37	35	35	37
11	35	35	37	35	35	37
12	35	35	37	35	35	37

Receiver locations are as identified in the Environmental Assessment – Capital Wind Farm Environmental Assessment prepared by Connell Wagner PPI dated February 2006 (or in the case of Lakoona the Supplementary Environmental Assessment).

If compliance assessments are required at other non-associated receiver locations as identified in the Environmental Assessment the applicable noise limits are $L_{Aeq\ (10minutes)}$ 35 dB(A) where the predicted level is below $L_{Aeq\ (10minutes)}$ 35 dB(A) and the predicted level where it is above $L_{Aeq\ (10minutes)}$ 35 dB(A). The predicted levels are identified in the aforementioned Environmental Assessments. It is noted that the Vipac Report of February 2006 noted that predictions based on the modelling are not precise and that "*The accuracy of the noise model is likely to be at least + 2dB(A) and up to the order of + 5dB(A)"*

Conditions 54 to 56 of the Project Approval set out the additional considerations in respect of application of noise criteria and measurement and assessment.

Condition 54 states that *"The noise limits applied to the eight properties identified in Condition No. 53 must be applied to all residences that were identified as being 'representative' as described in Table 1: Representative background sites with similar noise criteria, Appendix H1 – Background Noise Monitoring report found in Volume 2 – Appendices to the Capital Wind Farm Environmental Assessment*" (Table 1 is inserted below).

Table 1 (of EA) – Representative background sites and locations with similar characteristics

Background monitoring site	**Sites considered to have a similar background noise characteristic**
Luckdale (G2)	G3, G4
Euroka (G7)	G5, G6
Sunnybrook 1 (G8)	G9, G10, G11, G12, G13, G14, G15, G16, G17, H3
The Patch (H15)	H13, H17, H18, H20, H21, H22, H26, H27
Gray Lot 7 (H5)	H4, H6, H7, H11, H14, H16, H19, H24, H25
L'Orizon (E2)	E3, E6
Currandooley (H2)	E4, E5, E7, H1
Wyoming (E1)	Not applied to any other sites
Bonnie Doon (H25)	H8, H9, H10, H12
Torokina (G18)	Not applied to any other sites

It is noted that while the Condition 54 refers to eight properties, only six are shown in Condition 53. For the purpose of this Compliance Plan it has been assumed that the properties referred to in Condition 54 are the six properties in Condition 53 that are also highlighted in Table 1 below. It is further assumed that the operational noise criteria in Condition 53 are applied to those in the same group within Table 1.

Wyoming and Torokina have not been used as representative of other neighbouring residences.

Conditions 55 and 56 are provided below:

55 Noise from the Premises is to be measured at the most affected point within the residential boundary, or at most affected point within 30 metres of the dwelling where the dwelling is more than 30 metres from the boundary, to determine compliance with the noise level limits set out in the tables at Condition No. 53.

56 The modification factors presented in Section 4 of the *New South Wales Industrial Noise Policy (NSW EPA, January, 2000)*, must be applied to the measured noise level where applicable.

6.1.3 Assessment of Noise during Operation

Conditions 57 to 59 address the assessment of noise compliance during operation and are set out below.

57 The Applicant must prepare a Noise Compliance Assessment Plan which must be submitted to the DEC prior to Commissioning of the wind turbines. The Noise Compliance Assessment Plan must outline how the Noise Compliance Assessment, as described in Conditions Nos. 58-59, will be achieved.

58 The Noise Compliance Assessment must include, but not be limited to:

(a) an assessment of the performance of the wind farm against the noise limits contained in Condition No.53.
(b) a commitment that noise compliance monitoring must be undertaken within three calendar months of the commissioning of the wind turbines at the locations identified in Condition No. 531. If prevailing meteorological conditions do not allow the required

monitoring to be undertaken in this period, the DEC must be notified and an extension of time may be sought; and

(c) a requirement that all noise compliance monitoring results are to be submitted to the DEC within one month of completion of the monitoring. The DEC may request that additional noise compliance monitoring be undertaken and completed within a timeframe defined by the DEC.

59 In the event that the Noise Compliance Assessment indicates that noise from the wind turbines exceeds the noise limits contained in Condition No. 53, the Proponent must investigate and propose the mitigation and management measures that are available to achieve compliance with the noise limits. The Noise Compliance Assessment must be undertaken in accordance with the procedures presented in the SA Guidelines.

The Noise Compliance Assessment Plan has been submitted to the Department of Planning and is included in the document as section 6.2.

6.1.4 Management of Noise Impacts

The management of operational noise impacts for the Capital Wind Farm will be undertaken using the management system established for the OEMP.

During the first three months following completion of commissioning, noise compliance will be assessed in accordance with the Noise Compliance Assessment Plan required by approval condition 57 (section 6.2 of this document).

Where the operation is shown to be non-compliant, the operation will be modified to achieve compliance as is required by Condition 59 of the Project Approval.

In the event of any complaints being received in relation to noise from the wind farm operation, these complaints will be registered, investigated, and reported in accordance with the complaints handling system established for the project and for use in relation to this OEMP.

It is noted that references to the DEC in the Project Approval Conditions have given rise to some confusion in obtaining regulatory advice. This has arisen due to wind farms no longer being scheduled premises and the DEC (now DECCW) indicating that it no longer has jurisdiction in relation to wind farms. Where there is uncertainty in relation to this aspect, consultation will occur with the Department of Planning. The proponent expects that the Department will seek advice from DECCW to deal with matters relating to noise impact and noise compliance. Suzlon also expects that a variation of the approval condition will be sought by the proponent to replace 'DEC' with the 'Department of Planning'.

Reference:

Plan: Noise Compliance Assessment Plan

Bird and Bat Adaptive Management Plan

7.1 Requirements of Conditions of Project Approval

Conditions 34 to 36 of the Project Approval set out requirements for a Bird and Bat Adaptive Management Program (BBAMP). These conditions are set out below.

Condition 34 requires the proponent to "*prepare and submit for the approval of the Director-General, a Bird and Bat Adaptive Management Program…which takes account of bird/bat monitoring method identified in the current editions of the AusWEA* Wind Farms and Birds: Interim Standards for Risk Assessment (July 2005)*. The Program must be undertaken by a suitably qualified expert, approved by the Director-General.*

The Program must incorporate Monitoring, and a Decision Matrix that clearly sets out how the Applicant will respond to the outcomes of monitoring. It must:

- Incorporate an ongoing role for the suitably qualified expert;
- Set out monitoring techniques, taking into account best practice bird and bat monitoring methods for wind farms such as those identified in the current editions of AusWEA Best Practice Guidelines for the Implementation of Wind Energy Projects in Australia and Assessing the Impacts of Windfarms on Birds – Protocols and Data Set Standards;
- The requirements must account for natural and human changes to the surrounding environment that might influence bird and/or bat behaviour such as changes in land use practices, and significant changes in water levels in nearby water bodies;
- Incorporate a decision making framework that sets out specific actions and which it may be required, to reduce identified impacts on birds and bats;
- Identify 'at risk' bird and bat groups and include monthly censuses of their movements;
- Set out available mitigation measures including, but limited to, those identified in Condition No. 32(c) and commitments outlined in Section 15 of the EA.

Condition 35 - The Proponent must prepare annual reports commencing 12 months from the start of the Operation describing the activities undertaken within the Bird and Bat Adaptive Management Program. The reports must be prepared within 2 months of the end of the reporting period and be provided to the Director General. The reports must address the:

- Outcomes of monitoring;
- Application of the decision making framework;
- Need for mitigation measures;
- Progress with implementation of mitigation measures; and
- Effectiveness of the mitigation measures.

Condition 36 – The proponent is required to implement reasonable and feasible mitigation measures, to the satisfaction of the Director-General, where the need for further action is identified through the Bird and Bat Adaptive Management Program.

Renewable Power Ventures proposed the engagement of Dr Greg Richards and Brett Lane and the appropriate specialists to prepare the BBAMP. It is noted that Brett Lane had a key role in preparation of the July 2005 publication entitled, "AusWEA Wind Farms and Birds: Interim Standards for Risk Assessment (July 2005)"

7.2 Bird and Bat Adaptive Management Plan Preparation

The Department in its letter of 16 April 2009 approved specialists, Greg Richards and Brett Lane as being appropriate appointments for the purposes of Condition 34. Subsequently these specialists have prepared the BBAMP that forms part of this OEMP.

The following identifies specific responsibilities arising from the BBAMP.

7.3 Carcass Monitoring

Carcass monitoring and scavenger trials will be undertaken by the appointed specialists or by personnel specifically trained and directed for the purpose by the specialists.

Section 1.3.1 of the BBAMP sets out the details of the monitoring program including protocol to be followed for handling and reporting fatalities and injured birds and bats.

Injured birds or bats will be referred to WIRES or the nearest Vet for attention. If injured birds or bats are unable to be saved then the carcass will be forwarded to a Vet or specialist to assess species and cause of death.

Form: Bird/Bat Strike Recording form

7.4 Land Management

Agreements with landowners will be maintained in relation to:

- stock movements in proximity to turbines at times of lambing
- removal of any stock carcasses from the vicinity of wind turbines.

Suzlon will regularly monitor the areas surrounding the turbines and notify landowners of any dead or injured stock that may attract scavenging birds. Removal of any dead carcasses will occur in accordance with agreed arrangements between landowners and the operator.

7.5 Reporting Requirements

As required by the Condition 35 the Proponent must:

- Prepare annual reports commencing 12 months from the start of the Operation describing the activities undertaken within the Bird and Bat Adaptive Management Program.
- Complete preparation of the reports within 2 months of the end of the reporting period and provide them to the Director General.

This reporting requirement will be managed by the proponent.

7.6 Decision Making Framework

The BBAMP includes a decision making framework. It will be the proponent's responsibility to ensure that requirements of the BBAMP and the Project Approval conditions are met.

References:

Plan: Bird and Bat Adaptive Management Program

Off-Site Landscape Management Plan

8.1 Decision Making Framework

The project approval conditions include the following items relating to preparation of off-site landscape plans.

Condition number	Details of Project Approval condition
43	As part of the OEMP the Proponent must develop and implement an *Off-Site Landscape Sub Plan* to address visual impacts of the proposed development for any owner of an existing or approved residential dwelling with views of turbine(s) located within four kilometres of their dwelling. The Off-Site Landscape Sub Plan is to be prepared by a suitably qualified landscape planner approved by the Director-General.
44	The Proponent must notify in writing all owners of a residential dwelling with views of turbines located within four kilometres of their residential dwelling of its requirements to prepare the Off-Site Landscape Sub Plan, prior to the commencement of Commissioning. These owners may request, no later than six months after the commencement of Operation, inclusion of their property in the Off-Site Landscape Sub Plan.
45	The landscape planner will, for each individual residential treatment, identify which screening species to use, where mature stock should be used in order to get the most effect, and how to screen out the wind turbines and still retain at least a partial outlook if desired by the resident. The proponent must implement all reasonable and feasible requirements for the identified landscape works. The Off-Site Landscape Sub Plan is to be fully implemented within 18 months of the commencement of Operation.

The Department approved appointment of Mr Tony Lewis and Mr Cormac Farrell for the purpose of Condition 43.

A generic landscape Off-Site Landscape Plan has been prepared by the approved specialists and forms an attachment to this OEMP (Section 8.2).

Specific Landscape Plans have been prepared for each property where eligible neighbours have requested them and are still to be issued to, and agreed to with the neighbours.

Reference:

Plan: Off-Site Landscape Plan

Reference Documents

Infigen and Suzlon both endeavour to achieve best practice for all their work activities and acknowledge the importance of the relevant legislative requirements. These requirements include relevant Act, Regulations, Australian Standards, State and National Codes of Practice etc, along with Infigen's and Suzlon's own procedures and policies.

The processes and procedures incorporated into this OEMP are designed to meet the following documents (but not limited to these):

1. Environmental Legislation

- Environmental Planning and Assessment Act, 1979
- Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act)
- Threatened Species Conservation Act, 1995
- National Parks and Wildlife Act, 1974
- Native Vegetation Act, 2003
- Noxious Weeds Act, 1993
- Fisheries Management Act, 1994
- State Environmental Planning Policy No. 44 – Koala Habitat Protection
- Protection of the Environmental Operations Act, 1997
- Soil Conservation Act, 1938
- Work Health and Safety Act, 2011
- Work Health and Safety Regulation 2011
- Local Government Act, 1993

2. Suzlon Policies

- Environmental Policy

3. Suzlon Procedures

- Hazardous Substances and Dangerous Goods.
- Risk Assessment and Control
- Incident Reporting
- Permits to Work
- Incident Investigation
- Job Safety Analysis/Safe Work Method Statement
- Internal Audits
- Management Review
- Corrective Action Register

5. Australian Standards

- AS/NZS ISO 9001:2008, Quality Management Systems
- AS/NZS 4801:2001, Occupational Health and Safety Management Systems
- AS/NZS ISO 14001:2004, Environmental Management Systems
- AS3000-2007, Wiring Rules
- AS3760-2003, In Service Safety Inspection and Testing of Electrical Equipment.

6. Suzlon Forms

- JSA/SWMS
- Incident Report Form
- Hot Work Permit
- Incident Reporting Communication Protocol
- Vehicle Inspection Checklist
- Hazard Observation Card
- Site Induction and Personal Details
- Safety Toolbox Meeting Minutes
- Service Safety Inspection
- Compliance Inspection - Environmental

7. Suzlon Capital Wind Farm Plans and Documents

- Capital Wind Farm – Service Management Plan
- Capital and Woodlawn Wind Farm - Emergency Response Plan
- Service HSE Risk Register
- Capital Wind Farm – Audit Schedule
- Capital Wind Farm – HAZOB Register.
- Capital Wind Farm - Incident Register
- Capital Wind Farm - Corrective Action Register
- Capital Wind Farm – MSDS Register
- Noise Compliance Assessment Plan
- Off-Site Landscape Plan
- Bird and Bat Adaptive Management Program