# Bodangora Wind Farm

# Pollution Incident Response Management Plan (PIRMP)

## Document Control

The Iberdrola Australia Operations Manager is responsible for the revision and update of this Pollution Incident Response Management Plan (PIRMP). A new revision date is required with any updates or revisions and will be circulated to those on the Distribution List once the revision has been approved by the Iberdrola Australia Operations Manager.

## PIRMP Review and Update

This Plan will be reviewed formally on an annual basis by the Operations Manager, the Iberdrola Australia Safety & Environment Manager and other personnel and stakeholders as required. Review and update (if required) of this plan will also take place within one month after any pollution incident, to address any issues in implementing the plan that become known during or following an incident. Review and update of this Plan will also take plan in response to a change to the activities, products or services or significant changes in Wind Farm operating conditions.

**Table 1: Change Revision Record**

| Date | Author | Version | Revision Notes (include whether changes are considered minor or significant updates) | Approval |
|---|---|---|---|---|
| 4/12/18 | | 1 | Draft Document | |
| 21/01/2019 | T Maddever | 2 | First issue | C Butler |
| 22/04/2022 | M Bullock | 3 | Review and rebranding changes | J Minahan |

## Distribution List

All individuals on the following Distribution List, Table 1.0, must be notified when a new version of the PIRMP is available. Others may be notified at the discretion of the Operations Manager. All requests for changes to the Distribution List or Controlled Hard Copies are to be addressed to the Operations Manager. This Plan is to be made available to an authorised officer on request, and at the premises to which the relevant licence relates, or where the relevant activity takes place, to any person who is responsible for implementing the plan.

**Table 2: Distribution List**

| Company | Position / Role |
|---|---|
| GE O&M | Site Manager |
| GE O&M | Service Manager NSW & VIC |
| GE O&M | Lead Service Technician |

Controlled hard-copies of the Plan are contained at locations in Table 2.0. Anyone updating this plan must ensure that these hard copies are updated.

## Definitions

| Term | Meaning |
|---|---|
| BWF | Bodangora Wind Farm. |
| BWFPL | Bodangora Wind Farm Pty Limited |
| EPA | Environmental Protection Authority |
| OMP | Operation Management Plan |

| | |
|---|---|
| OEMP | Operation Environmental Management Plan. |
| Contractor or GE or GE O&M | General Electric International Inc, the counterparty to the Operation and Maintenance Agreement with BWFPL in respect of BWF |

Table 3: Controlled Hard Copies

| Company | Position / Role |
|---|---|
| GE O&M | Bodangora Site Office (sign in station) |
| Iberdrola Australia | Bodangora Emergency Evacuation Muster Point |
| Iberdrola Australia | Bodangora Site Office |

This plan is to be made publicly available in the following manner within 14 days after it is prepared:

a) in a prominent position on a publicly accessible website of the person who is required to prepare the plan, or

(b) if the person does not have such a website—by providing a copy of the plan, without charge, to any person who makes a written request for a copy

## Key Emergency Service Contact Details

**Table 4: Bodangora Wind Farm Emergency Contacts**

| Iberdrola Australia (Owner / Environmental Protection Licence Holder) | Telephone Number |
|---|---|
| Site Manager | 0436 688 910 |
| Main Wind Farm Site Office | Refer to Site Manager mobile phone |
| Operations Control Centre (OCC Duty Operator) | 02 8031 9958 |
| GM Energy Market Operations | 0410 417 867 |
| GM Renewables O&M | 0408 542 293 |
| Health, Safety & Environment Manager | 0466 203 494 |

| **Iberdrola Australia (Owner / Environmental Protection Licence Holder)** | **Telephone Number** |
|---|---|
| Iberdrola Australia Investor Relations Manager | 0403 936 030 |
| Head of Legal | 0488 078 150 |
| All Emergencies (Fire, Ambulance, Police) | 000 |
| NSW Rural Fire Service | 000 |
| NSW State Emergency Services - Molong NSW | 13 25 00 |
| Wellington Hospital – Wellington NSW | 02 6840 7200 |
| Swift Street Medical – Wellington NSW | 02 6845 2084 |
| Poisons Information Centre | 131 126 |
| Wellington Veterinary Hospital – Wellington NSW | 02 6845 2872 |
| WIRES Wildlife Rescue | 1300 094 737 |
| Water NSW | 1800 061 069 |
| SafeWork NSW | 131 050 |
| NSW DPE | 1300 420 596 |
| Dubbo Regional Council | 02 6801 4000 |
| NSW Environment and Heritage | 1300 361 967 |

| **Iberdrola Australia (Owner / Environmental Protection Licence Holder)** | **Telephone Number** |
|---|---|
| NSW Office of Water | 1300 081 047 |
| NSW Ministry of Health | (02) 9391 9000 |
| TransGrid | 1800 027 253 |
| NSW EPA | 131 555 |
| Essential Energy | 132 080 |

CONTENTS

## Background

Bodangora Wind Farm Pty Ltd (BWFPL) attained Planning Approval on 30 August 2013 from the NSW Minister for Planning for the construction and operation of Bodangora Wind Farm (BWF). Several Modifications to the Approved Project have been granted since approval, including:

- Mod 1 – determined October 2015 – increase the blade length from 114m to 130m but to remain within the overall approved tip height of 150m;
- Mod 2 – 5 December 2016 – (i) relocation of substation (ii) relocation of connection feeder (132kV line) and (iii) access track and underground cabling realignment;
- Mod 3 – 22 June 2017 – Minor modification relating to micro siting two turbines and the meteorological masts.
- Mod 4 – 22 December 2017 – Minor modifications relating to micro-siting of access tracks.

The Bodangora Wind Farm has an issued Environmental Protection License (EPL 20927) under the Protection of the Environment Operations Act, 1997 (POEO Act), on 29 June 2018. EPL 20927 applies to:

- Scheduled activities – involving Electricity Generation of 0-450 GWh annual generating capacity at the Bodangora Wind Farm Premises; and
- Other Ancillary activities – involving chemical storage, concrete works, crushing, grinding or separating, extractive activities and sewerage treatment.

## Purpose of this Document

This PIRMP has been prepared by Iberdrola Australia to address specific requirements of Part 5.7A of the *Protection of the Environment Operations* (POEO) *Act* and *Protection of the Environment Operations (General) Regulation* 2009 (POEO [G] Regulation). This document has also been prepared to address the amendment made to the POEO (G) Regulation (by the *Protections of Environment (General) Amendment (pollution Incident Response Management Plans) Regulation* 2012) with the object of specifying additional measures to include in plans.

This PIRMP includes key information listed within Section 153C of the POEO Act, is in the form as required by the POEO (G) Regulation (Clause 98B), and addresses all additional matters outlined within Clause 98C of the POEO (G) Regulation. The preparation of this plan has also been prepared in accordance with the NSW EPA Environmental Guidelines: Preparation of Pollution Incident Response Management Plans (EPA, 2012).

Key management aspects described in this PIRMP are also addressed by the DPE approved Bodangora Wind Farm Construction Environmental Management Plan (CEMP) and Operations Environmental Management Plan (OEMP), which includes the Bodangora Wind Farm (BWF) Emergency Response Plan (ERP) that is referenced by Site Staff and contractors. This PIRMP refers to these documents as applicable.

## Objectives

Iberdrola Australia will prepare, keep, test and implement a PIRMP in order to:

1. Ensure comprehensive and timely communication about a pollution incident to staff at the premises, the Environment Protection Authority (EPA), other relevant authorities specified in the Act (such as local councils, NSW Ministry of Health, WorkCover NSW, and Fire and Rescue NSW) and people outside the facility who may be affected by the impacts of the pollution incident.

2. Minimise and control the risk of a pollution incident at the facility by requiring identification of risks and the development of planned actions to minimise and manage those risks.
3. Ensure that the plan is properly implemented by trained staff, identifying persons responsible for implementing it, and ensuring that the plan is regularly tested for accuracy, currency and suitability.

### Overview of the requirements for this PIRMP

Holders of Environmental Protection Licences (EPLs) are required to prepare, keep, test and maintain a PIRMP. Bodangora Wind Farm holds EPL #20927 which relates to the authorization for carrying out electricity generation as a scheduled activity, along with ancillary activities including chemical storage, concrete works, crushing, grinding or separating, extractive activities and sewerage treatment. The EPA advocates that the PIRMP, its use and applicability to the activities of the licensed premises is an important consideration in risk assessments of premises to be undertaken by the EPA as part of the transition into Risk Based Licensing (RBL). Table 5 below sets out the general legislative requirements for this PIRMP as outlined within Section 153 of the POEO Act 1997.

**Table 5: Legislation requirements for this PIRMP under Part 5.7 of the POEO Act 1997**

| Legislation | Iberdrola Australia Compliance | Description Of Compliance |
|---|---|---|
| *Protection of the Environment Operations Act 1997 Part 5.7A Duty to prepare and implement pollution incident response management plans* | | |
| All holders of environment protection licences must prepare a pollution incident response management plan (section 153A, POEO Act). | Compliant | The EPL for Bodangora is detailed in: Bodangora Wind Farm EPL #20927. Iberdrola Australia complies with this requirement by developing this written PIRMP document in accordance with the legislative and guidance material. |
| The plan must include the information detailed in the POEO Act (section 153C) and be in the form required by the POEO (G) Regulation (clause 98B) (refer to following table for specific requirements). | Compliant | See Table 3 of this PIRMP. |
| Licensees must keep the plan at the premises to which the environment protection licence relates or, in the case of trackable waste transporters and mobile plant, where the relevant activity takes place (section 153D, POEO Act). | Compliant | Iberdrola Australia is the licensee for Bodangora and keeps this Plan at the main site office at Bodangora Wind Farm. |
| Licensees must test the plan in accordance with Section 153E, POEO Act, and the POEO(G) Regulation (clause 98E). | Compliant | The plan shall be tested on a regular basis. Further detail into the testing procedure is outlined within Section 4.7 of this Report |

| | | |
|---|---|---|
| If a pollution incident occurs in the course of an activity so that material harm to the environment is caused or threatened, licensees must immediately implement the plan (section 153F, POEO Act). | Compliant | This Plan shall be implemented should a pollution incident occur that causes or could cause material harm to the environment. |

Table 6 below sets out the specific PIRMP requirements set out within Section 153C of the POEO Act 1997. This table also confirms compliance with Part 3A of the POEO Regulation (G) 2009 (Section 98C), which includes recent additional requirements on what must be included in the PIRMP and how each requirement has been addressed.

**Table 6: PIRMP Compliance with requirements of POEO Act (S153C) and POEO (General) Regulation (S98)**

| Legislation | Iberdrola Australia Compliance | Description of Compliance |
|---|---|---|
| ***S153C POEO Act*** | | |
| (a) the procedures to be followed by the holder of the relevant environment protection licence, or the occupier of the relevant premises, in notifying a pollution incident to:<br>(i) the owners or occupiers of premises in the vicinity of the premises to which the environment protection licence or the direction under section 153B relates, and<br>(ii) the local authority for the area in which the premises to which the environment protection licence or the direction under section 153B relates are located and any area affected, or potentially affected, by the pollution, and<br>(iii) any persons or authorities required to be notified by Part 5.7, | Compliant | Figure 3 Incident Response Flow chart and Section 4.5 of this report. |
| (b) a detailed description of the action to be taken, immediately after a pollution incident, by the holder of the relevant environment protection licence, or the occupier of the relevant premises, to reduce or control any pollution. | Compliant | Figure 3 Incident Response Flow chart<br>and Section 4.5 of this report. |
| (c) the procedures to be followed for coordinating, with the authorities or persons that have been notified, any action taken in combating the pollution caused by the incident and, in particular, the persons through whom all communications are to be made, | Compliant | Figure 3 Incident Response Flow chart<br>and Section 4.5 of this report. |
| (d) any other matter required by the regulations. | Compliant | As per the regulations |

| Legislation | Iberdrola Australia Compliance | Description of Compliance |
|---|---|---|
| ***Part 3A POEO (G) Regulation (Clauses 98B, C, D, E)*** | | |
| The plan is to be in written form (Clause 98B) | Compliant | This Plan is in written form |
| Plans must provide a description of the main hazards to human health or the environment associated with the activity being undertaken at the premises, the likelihood of any such hazards occurring, including details of any circumstances or events that could, or would, increase that likelihood (Clause 98C[1](a and b)) | Compliant | Section 2 of this report, Appendix B |
| Plans must include detailed descriptions of the pre-emptive actions to be taken to minimise or prevent any risk of harm to human health or the environment arising from the activities undertaken at the premises (Clause 98C(1)(c)). | Compliant | Section 4.1 of this report |
| Plans must include an inventory of potential pollutants kept on the premises or used in carrying out activities at the premises, including the maximum quantity of any potential pollutant that is likely to be stored or held at the premises (Clause 98C(1)(d and e). | Compliant | Section 1.2 of this Report |
| Plans must include a description of the safety equipment or other devices that are used to minimise the risks to human health or the environment and to contain or control a pollution incident (Clause 98C(1)(f)). | Compliant | Section 4.2 of this report |
| Plans must include the names, position titles and 24-hour contact details of those key individuals who are responsible for activating the plans and managing the response; those authorised to notify relevant authorities, including all five relevant authorities under section 148 of the POEO Act; and those responsible for managing the response to a pollution incident. The EPA has developed a notification protocol (Clause 98C(1)(g and h)). | Compliant | Preface section of this report (Key Emergency Service Contact Details); |
| Plans must include the contact details of the EPA, the local council, NSW Ministry of Health, WorkCover NSW, and Fire and Rescue NSW, relevant to the licensee's premises. The contact details of any other organisation or agency that needs to be advised of | Compliant | Preface section of this report (Key Emergency Service Contact Details) |

| Legislation | Iberdrola Australia Compliance | Description of Compliance |
|---|---|---|
| the incident should also be included in plans, for example the Department of Planning and Infrastructure, and Department of Primary Industry (Clause 98C(1)(g and h)). | | |
| Plans must include details of the mechanisms that will be used for providing early warnings and regular updates to the owners and occupiers of premises who may be affected by an incident occurring on the premises. Plans must also include any specific information that could be provided to the community so it can minimise the risk of harm (Clause 98C(1)(i)). | Compliant | Section 4.3 of this report |
| Plans must include any actions or arrangements that will be in place to minimise the risk of harm to any persons who will be on the premises or who are likely to be on the premises should an incident occur. These can include the activation of evacuation procedures, clearly advertising muster locations to site personnel, or activating visible and/or audible warning alarms (Clause 98C(1)(j)). | Compliant | Section 4.4 of this report |
| Plans must include a detailed map (or set of maps) showing the location of the premises, the surrounding area that is likely to be affected by a pollution incident, the location of potential pollutants on the premises, the location of any stormwater drains on the premises, and the discharge locations of the stormwater drains to the nearest watercourse or water body (Clause 98C(1)(k)). | Compliant | Section 1.1 and Appendix C of this report |
| Plans must include detailed descriptions of the actions that will be taken by the licensee immediately after a pollution incident to reduce or control any pollution. These should include, as a minimum, early warnings, updates and actions to be taken during and after an incident (Clause 98C(1)(l)). | Compliant | Section 4.5 of this report |
| Plans must include details on the nature and objectives of any staff training program on implementing the plans. Details of the training program must include the frequency of training and how the records of any training are kept (Clause 98C(1)(m)). | Compliant | Section 4.6 of this report |

| Legislation | Iberdrola Australia Compliance | Description of Compliance |
|---|---|---|
| The Plan is to be made available to an authorised officer on request, and at the premises to which the relevant licence relates, or where the relevant activity takes place, to any person who is responsible for implementing the plan (Clause 98D(1)). | Compliant | Preface section of this report (Distribution list) |
| A plan is to be made publicly available in the following manner within 14 days after it is prepared:<br>a) in a prominent position on a publicly accessible website of the person who is required to prepare the plan, or<br>(b) if the person does not have such a website—by providing a copy of the plan, without charge, to any person who makes a written request for a copy (Clause 98D(2)). | Compliant | Preface section of this report (Distribution list) |
| The testing of a plan is to be carried out in such a manner as to ensure that the information included in the plan is accurate and up to date and the plan is capable of being implemented in a workable and effective manner (Clause 98E(1)). | Compliant | Section 4.7 Testing Procedures |
| Any such test is to be carried out:<br>• routinely at least once every 12 months; and<br>• within 1 month of any pollution incident occurring in the course of an activity to which the licence relates so as to assess, in the light of that incident, whether the information included in the plan is accurate and up to date and the plan is still capable of being implemented in a workable and effective manner (Clause 98E(2)) | Compliant | Section 4.7 Testing Procedures |

## Structure of this Report

This report has been structured to addresses the following matters in accordance with individual aspects listed within the POEO(G) Regulation (S98C) and the list of “General Requirements” outlined within the EPA Guidelines (EPA, 2012), with respect to the Bodangora Wind Farm:

- Inventory of pollutants used or stored within the Project
- Description and likelihood of hazards
- Pre-emptive actions to be taken
- Inventory of pollutants
- Safety equipment (Pollution control equipment)
- Contact details
- Communicating with neighbours and the local community
- Minimising harm to persons on the premises
- Maps relevant to Pollution Incident Response
- Actions to be taken immediately after an incident
- Staff training.

# 1. Description of Site Facilities

The project comprises 33 GE 3.4-130 turbines with 85 m hub height. The turbines are connected by underground cables to a single 33/132 kV transformer at an on-site substation, which is linked by a new overhead line to a tee connection at the Beryl-Wellington 132 kV line located to the east of the Site. Also included within the site is an Operations and Maintenance (O&M) building and access tracks linking the entry/exits points with the O&M Building, substation and turbines.

The O&M compound is located on private property close to the turn off from Gillinghall Road. The main O&M Compound comprises office facilities, amenities, carparking, a warehouse and laydown area. Figure 1 below illustrates the overall site layout. Appendix C illustrates the O&M Building layout and chemical storage area.

Approximately 35 km of Access tracks and associated drainage infrastructure were established to provide access to wind turbine sites and the substation.

## 1.1 Windfarm Operational Activities

During windfarm operations and maintenance, on-site staff will involve one full-time person from Iberdrola Australia and 7-8 people from General Electric as maintenance contractors. Additional personnel may be required for maintenance activities. The key activities to be undertaken during operations of BWF are:

- Scheduled turbine maintenance;
- Unscheduled turbine repairs and maintenance;
- Maintenance and repairs of Balance of Plant (civil, electrical and facility).

The layout of the site showing operational elements is shown in Figure 1.

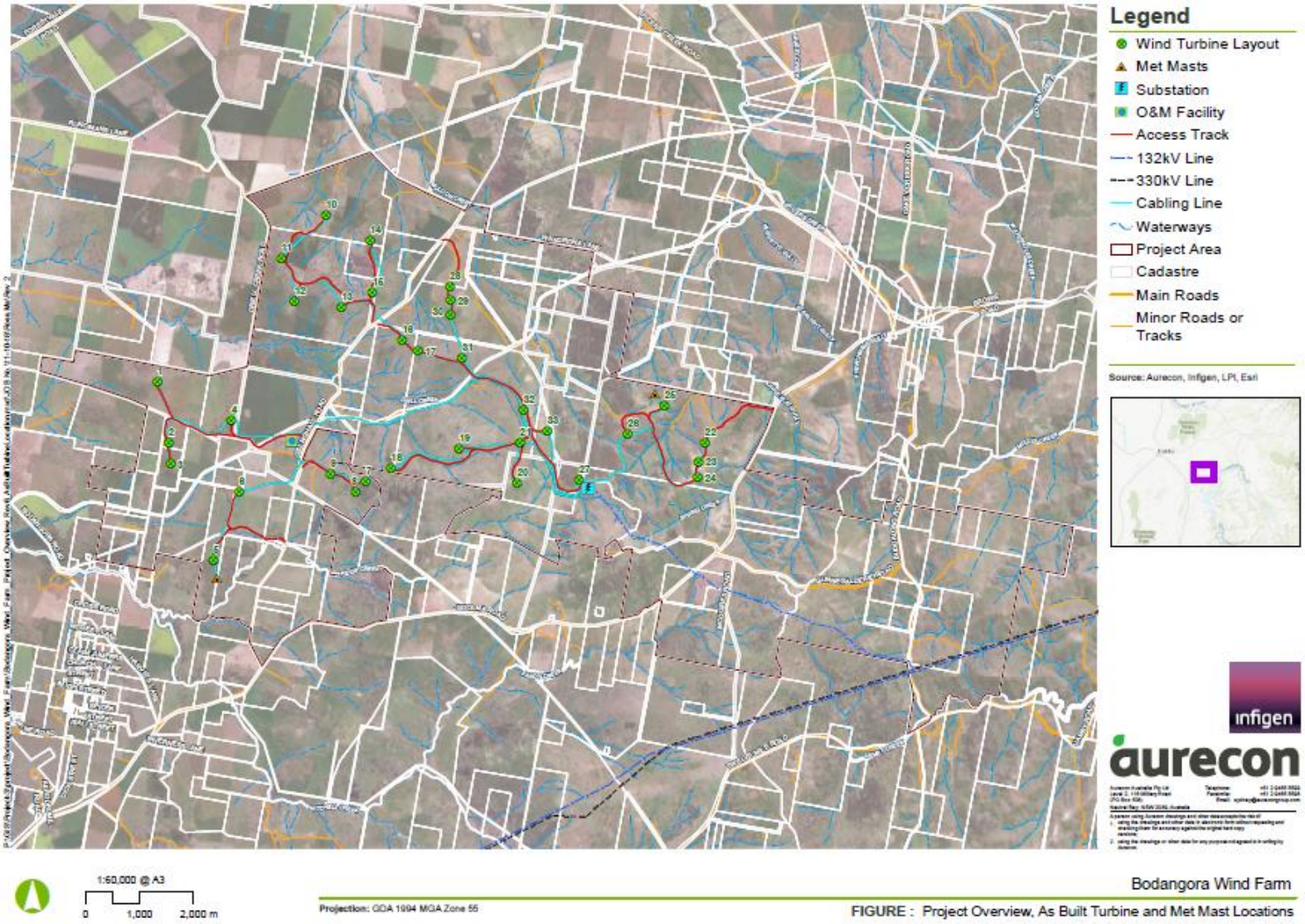


**Figure 1: BWF Site layout**

## 1.2 Inventory of pollutants used or stored within the Project Area

Potential pollutants will be either stored within the O&M Building compound, or be contained within the wind turbine generator components. Table 7 below provides a general overview of pollutant inventory within the BWF Project area during operations. Table 8 lists the pollutants used for maintenance that were delivered to site at the commencement of operations. Table 9 states the pollutants contained within each operating wind turbine generator unit. . Note, the pollutants on site will vary in product and volume during the operating phase of the project.

**Table 7: BWF Operations pollutant inventory**

| Substance | Location of potential pollutants within Project Area | | | |
|---|---|---|---|---|
| | O&M Compound | Turbine sites | Substation | Mobile around site |
| **Maintenance pollutants as per Table 8 below.** | √ | | | |
| **Wind turbine pollutants as per Table 9 below:** | | √ | | |
| **Substation pollutants as per Table 10 below:** | | | √ | |
| **O&M Building pollutants** | √ | | | |
| **Vehicle engine oil** | | | | √ |
| **$CO_2$ fire extinguisher** | √ | √ | √ | √ |
| **Vehicle hydraulic oil** | | | | √ |

### Table 8: BWF pollutant inventory stored at the O&M building

| Product Name | Use | Supplier | Hazardous | Dangerous Good | UN number | Hazchem Code | Volume | Unit |
|---|---|---|---|---|---|---|---|---|
| **366-H0070 Metalshield All Surface Primer Grey** | Liquid | Dulux Protective Coatings Australia, | No | 3 | 1263 | 3YE | 5 | ml |
| **Acetone** | Solvent | Reochem Inc | Yes | 3 | 1090 | 2YE | 5 | lt |
| **Acetone** | Solvent | Nuplexin | Yes | 3 | 1090 | 2YE | 5 | lt |
| **Aerogard Tropical Insect Repellent** | Insect Repellent | Reckitt Benckiser (Australia) Pty Ltd | Yes | DG 2.1 | UN 1950 | 2YE | 2 | lt |
| **Araldite 5 Minute Epoxy Adhesive** | Liquid | Selleys, A Division Of Duluxgroup Pty Ltd | No | 1 | 2735 | 2X | 250 | ml |
| **Banana Boat Sport Spf50+ Sunscreen** | Sunscreen Liquid | Edgewell Personal Care Australia | No | No | - | - | 2 | lt |
| **CRC Contact Cleaner (Aerosol)** | Aerosol) Liquid | CRC Industries (Aust) Pty Limited | Yes | DG 2.1 | UN 1950 | 2Y | 6 | lt |
| **Diesel** | Diesel Liquid | Mobil Oil Australia Limited | Yes | No | - | - | 20 | lt |
| **Galmet Rustpaint Aerosol** | Aerosol Liquid | ITW Aamtech Australia | Yes | No | 1950 | 2Y | 4 | lt |
| **ISOPROPYL ALCOHOL 70% UNTINTED** | Liquid | Orion Laboratories | No | No | - | - | 500 | ml |
| **ISOWIPE** | Wipe | Kimberly-Clark | No | No | - | - | 2 | pk |
| **Loctite 243** | Liquid | Henkel Australia Pty Ltd | Yes | No | - | - | 100 | ml |
| **Loctite 263** | Liquid | Henkel Australia Pty Ltd | Yes | No | - | - | 100 | ml |
| **Loctite 277** | Liquid | Henkel Australia Pty Ltd | Yes | No | - | - | 100 | ml |
| **Loctite 515** | Liquid | Henkel Australia Pty Ltd | Yes | No | - | - | 100 | ml |
| **Loctitie 7649** | Liquid | Henkel Australia Pty Ltd | Yes | No | - | - | 100 | ml |
| **Mobil DTE 25** | Hydraulic Fluid | ExxonMobil | No | No | - | - | 5 | lt |
| **MOLYKOTE LONGTERM 2** | Grease | Dow Corning | no | No | - | - | 5 | lt |
| **Mortein Fast Insect Killer Aerosol** | Aerosol Liquid | Reckitt Benckiser (Australia) Pty Ltd | Yes | DG 2.1 | UN 1950 | 2YE | 0.5 | lt |
| **Norox Chm-50** | Chm-50 Liquid | Nuplex Industries (Aust) Pty Ltd | Yes | DG 5.2 | UN 3109 | 2W | 5 | lt |
| **Norox Me KP-9** | Mekp-9 Liquid | Nuplex Industries (Aust) Pty Ltd | Yes | DG 5.2 | UN 3105 | 2WE | 5 | lt |
| **Norpol PF-3354** | Pf-3354 Liquid | Reichhold | Yes | DG 4.1 | UN 3175 | - | 5 | lt |
| **Norpol SP 20000 - 99999** | Liquid | Reichhold | Yes | DG 3 | UN1866 | - | 5 | lt |
| **Polylite 2080 LSE 25kg 101029** | Liquid | NCS Composites | Yes | DG 4 | - | - | 5 | lt |
| **Polylite 413-M912** | M912 Liquid | Reichhold | Yes | DG 4 | UN1867 | | 5 | lt |
| **Powder Graphite F** | F Liquid | Fuchs Lubritech Gmbh | No | No | - | - | 5 | lt |
| **Rocol Dry Moly Spray** | Spray | Rocol House | Yes | DG 2.1 | UN 1950 | 2YE | 2 | lt |
| **Septone Orange Scrub** | Scrub Liquid | ITW Aamtech Australia | Yes | No | - | - | 30 | lt |
| **SHELL OMALA S4 GX 220** | Lubricant | Shell Australia | No | No | - | - | 20 | lt |
| **Sikaflex 221** | UV Liquid | Sika Australia Pty Ltd | No | No | - | - | 5 | Tube |
| **Sikaflex 521 UV** | UV Liquid | Sika Australia Pty Ltd | No | No | - | - | 5 | Tube |
| **Wd-40 Aerosol** | Aerosol Liquid | Wd-40 Company (Aust) Pty Ltd | Yes | DG 2.1 | UN 1950 | 2YE | 5 | lt |
| **CO2 fire extinguisher** | Supressant | | | | UN 1044 | 2TE | 10 | kg |
| **Sulphur hexaflouride** | Insulator | | | | UN 1080 | 2TE | 5.06 | kg |

### Table 9: Pollutants contained within each operating wind turbine generator unit:

| Applicable Component | Lubricant | Volume (l)/ Weight (kg) | Concentration | SDS |
|---|---|---|---|---|
| Converter Cooling Loops | BASF: Glysantin G05-111<br>Zerox G05<br>Distilled Water | 160 l<br>120 l<br>73 l | | |
| 3MW Radiator Loop | Glythermin P44/Distilled Water | 420 l | 47% - 53% glycol to distilled water for all loops | |
| Pumps Electric motor bearings Type 6205/6 | Exxon mobil Polyrex EM | 6 or 8 ml | | |
| PPM/ DTA:<br>K1 Contactor | Mobilgrease 28 | <0.1 kg | | |
| PPM / DTA<br>CB1 | EXXON Mobil SHC 524 | <0.1 kg | | |

| | | | | |
|---|---|---|---|---|
| PPM / DTA<br>CB1 | Fuchs Stabyl EOS E2 | <0.1 kg | | |
| Tower Hoist:<br>Harrington | Harrington Lubricant (Part No. ER1BS1951) | Approx 50 oz | | |
| Yaw Drives / Gearbox Oil<br>3MW Platforms | Either:<br>Mobil SHC gear 220<br>Or:<br>Mobil Mobilgear SHC XMP 220 | Approx. 23 l<br><br>Approx 20 l | | |
| Yaw Drives / Gearbox Oil<br>3MW Platforms | Mobil Mobilith SHC 460 | 2.2 kg | | |
| Yaw Bearing & Gear System (W831)<br>Ring Gear / Drive Pinions | Mobil SHC 460 WT | 2.500 kg | | |
| Yaw Bearing & Gear System Ring Gear / Drive Pinions | Mobil SHC 460 WT | 3MW 2 kg | | |
| Yaw Bearing & Gear System<br>Yaw Bearing | G002 Mobil 460 WT | 3MW 1.2 kg | | |
| Main Bearing | Mobil SHC 460 WTG | 7-8 kg | | |
| Gearbox Hydraulic Mounts | Aral Antifreeze Extra | 1.2 l | | |
| Hydraulic Break System | Mobil SHC 524 | 12 l | | |
| Generator Bearings | Klueberplex BEM 41-132 | 1 kg | | |
| Pitch Bearing | Fuchs Gleitmo 585 k | 10-15 kg | | |
| Pitch Ring Gear and Drive Pinion | Fuchs Gleitmo 585 k | 250 ml | | |
| Pitch Drive | Fuchs Renolin Unisyn CLP 220, or<br>Fuchs Renolin Unisyyn CLP 220 | 5.5 - 6.5 l | | |
| 3MW Wind Turbine Gearboxes | FDM 3 or PZAB 3494 | 540 - 560 l | | |

**Table 10: Pollutants contained within the 33 kV Substation:**

| Product Name | Use | Supplier | Hazardous | Dangerous Good | UN number | Hazchem Code | Volume | Unit |
|---|---|---|---|---|---|---|---|---|
| R 32 contained in Mitsubishi A/Cs - MUZ-GL80VGD | Refrigerant | Supplied with the product | Yes | No | 3252 | - | 6 | lt |
| R 32 contained in Mitsubishi A/Cs - MUZ-GL35VGD | Refrigerant | Supplied with the product | Yes | No | 3252 | - | 1.94 | lt |
| 5,000L PRECAST CONCRETE IN GROUND SEPTIC TANK | | Supplied with the product | | | | | 5,000 | lt |
| CO2 fire extinguisher | Suppressant | Supplied with the product | | | 1044 | 2TE | 20 | kg |
| Sulphur hexafluoride (SF6) | Insulator | Supplied with the product | | | 1080 | 2TE | 27.1 | kg |

**Table 11: Pollutants contained within the O&M Building:**

| Product Name | Use | Supplier | Hazardous | Dangerous Good | UN number | Hazchem Code | Volume | Unit |
|---|---|---|---|---|---|---|---|---|
| R 32 contained in Mitsubishi A/Cs - DXC12ZSA-W | Refrigerant | Suplied with the product | Yes | No | 3252 | - | 3 | lt |
| R 32 contained in Mitsubishi A/Cs - DXC18ZSA-W | Refrigerant | Suplied with the product | Yes | No | 3252 | - | 7.35 | lt |
| 5,000L PRECAST CONCRETE IN GROUND SEPTIC TANK | | Suplied with the product | | | | | 5,000 | lt |
| 20,000 LITRE PRECAST CONCRETE IN GROUND EFFLUENT HOLDING TANK | | Suplied with the product | | | | | 20,000 | lt |
| Diesel | Stand-by Generator | Suplied with the product | Yes | No | - | 3Z | 450 | lt |
| Oil for Diesel engine - API CF-4 15W/40 | Stand-by Generator | Suplied with the product | No | No | - | - | 8 | lt |

## 2. Description of Hazards

This section provides a description of the main hazards to human health or the environment associated with the operation of the BWF, the location and likelihood of any such hazards occurring, and any relevant circumstances or events that may increase this likelihood.

The POEO Act refers to actual or potential material harm to the environment. Section 147 describes the meaning of material harm to the environment:

*(1) For the purposes of this Part: (a) harm to the environment is material if:*

*(i) it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial, or*

*(ii) it results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000 (or such other amount as is prescribed by the regulations), and*

*(iii) loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment.*

*(2) For the purposes of this Part, it does not matter that harm to the environment is caused only in the premises where the pollution incident occurs.*

### 2.1 Potential Hazard Types

Potential hazards associated with the Bodangora Wind Farm (BWF) may be associated with impacts to soil, waterways and ecosystems via a variety of operational activities. Potential impacts are described below with specific applicability to the BWF. Key risks are subject to management through the Bodangora Wind Farm OEMP, summarised in Section 5 and Appendix B of this report.

***Soil and Water***

The key hazards relevant to soil and water include:

- Significant erosion of wind farm works after extreme rain fall (for example roads and hardstands) which could lead to significant transport of sediment to waterways or material harm to native landscape.

***Ecosystems***

Key hazards relevant to ecosystems would involve the significant loss of containment of oil or fuel which could lead to pollution of waterways and / or material harm to the environment. Types of loss of containment scenarios include:

- wind turbine gear box
- transformer (bunded)
- during lifting or transport operations
- moving machinery and heavy vehicles.

The principal objective in responding to a major fuel spill is to contain the spill to prevent leakage to local waterways.

See Appendix 1 (Pollution Incident Response) for detailed description of action to be taken should any of the aforementioned listed incidents occur.

## 2.2 Potential Hazard Locations

The hazards that have been identified above have the potential to occur at locations outlined below. An environmental risk analysis was carried out as part of the BWF OEMP (included as Appendix C of this document), which includes identification of specific operational hazards, strategies to minimize each and the residual risk following mitigation efforts. A copy of this analysis is included at Appendix B of this document.

**Table 12: BWF Potential Hazard Locations**

| Potential Hazard Location | Potential Hazard Aspect |
|---|---|
| O&M Building | Fuel, oils and chemical Storage |
| | Amenities |
| | Coolant chemicals |
| | Waste storage and removal |
| Substation and associated compound | Transformer (insulating oil) |
| | Amenities |
| | Surface runoff and sediment mobilization |
| | Waste storage and removal |
| Wind Turbines | Transformers (insulating oil) |
| | Grease migration during maintenance |
| | Removal of waste associated with packaging as part of ongoing maintenance works |
| Access Tracks, Hardstand areas and hillocks | Erosion of exposed surfaces associated with access roads, hardstands, hillocks, batters or drainage infrastructure with the potential to deposit sediment within nearby waterways or paddocks |
| | Vehicle or mechanical plant issues (including accident) resulting in fuel or oil spill |

## 3. Environmental Management System

BWFPL, including all site personnel, contractors and subcontractors must conduct its activities in accordance with the DPE approved OEMP and EPL (license number 20927) issued by the EPA. The DPE approved Environmental Representative oversees the project compliance and performance. Iberdrola Australia have aligned their environmental policy to ISO 14001 Standards.

The OEMP for BWF was prepared in accordance with requirements of Project Approval Condition F19, and addresses potential environmental risks to ensure performance objectives are achieved and all activities are compliant.

### 3.1 Environmental Management Structure and Responsibilities

The Project Approval has been granted for BWFPL with ultimate responsibility for the project implementation resting with BWFPL. GE has been engaged by BWFPL to operate Bodangora on its behalf according to the Project Approval conditions as modified, and to the extent of the contract arrangement. Figure 2 below outlines the Environmental Management Structure as outlined within the Approved OEMP.

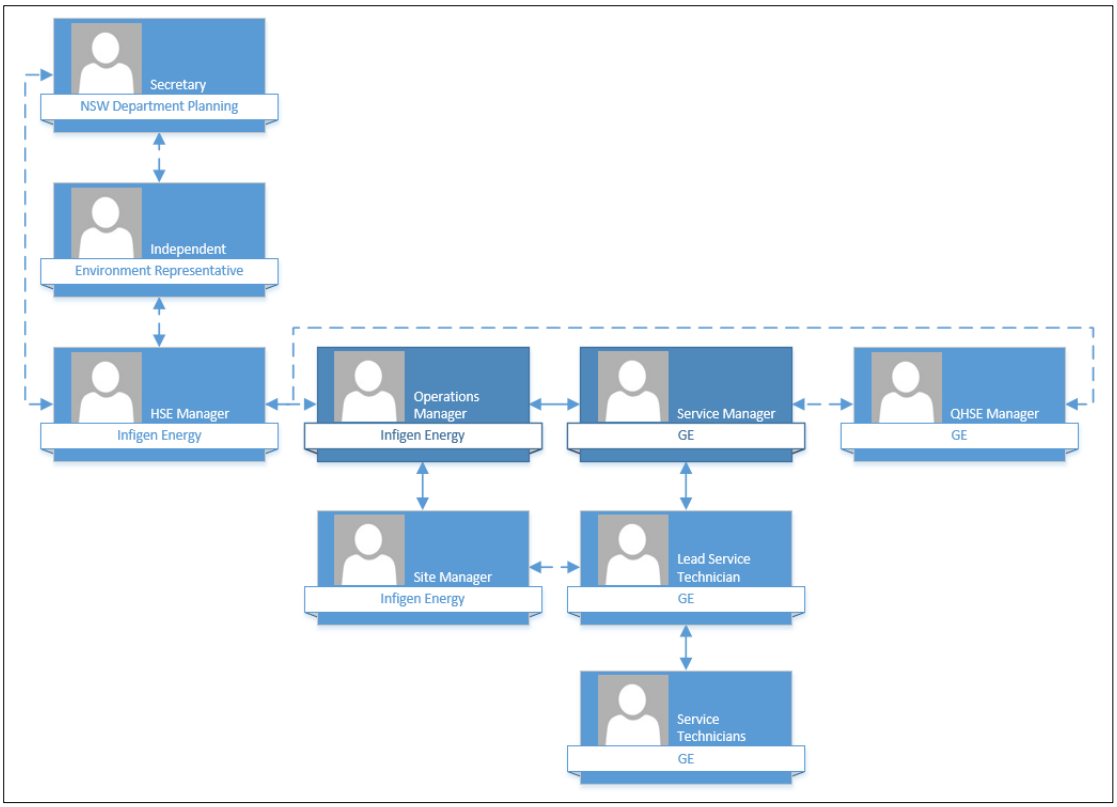


**Figure 2: BWF Environmental Management Structure**

### 3.2 BWF Risk Management Procedure

As part of the project approval conditions of consent, the OEMP includes a Site-specific Risk Register (also known as an Environmental Risk Register Analysis as per Section 4.19 of the OEMP). A copy of this document is provided as Appendix B of this PIRMP.

The Site Specific HSE risk register provides a detailed list of all identified site hazards and the control measures implemented in order to eliminate or minimise the risk of harm to persons. This document will be developed and administered by BWFPL and GE, to consider to the greatest possible extent both the likelihood of an environmental hazard, aspect or impact becoming an event or incident and the consequence and severity of such an incident or event. Development of this document also ensures that prior to the implementation of control measures, the proposed measures are reviewed to ensure they do not create a new hazard or impact.
The hierarchy of controls shall be applied so that risks associated with identified hazards are eliminated or controlled to as low as is reasonably practicable. The results of the site-specific risk register are communicated to everyone during relevant site HSE inductions as they are relevant to the work they are undertaking or sites they are visiting. The risk register is an agenda item on the Monthly site HSE meetings and is formally reviewed at least annually.

GE's site technicians will report all environmental hazards they identify as part of their normal day-to-day operations to GE site management. Six monthly inspections of site activities and environmental performance will be undertaken by GE and may include Iberdrola Australia personnel using a GE developed inspection checklist. Records of completion shall be maintained by GE and made available upon request by a relevant government authority, Iberdrola Australia, or person/s working on behalf of Iberdrola Australia. GE shall implement a system whereby any follow up actions from these inspections can be recorded and status tracked to completion.

## 4. Environmental Management Measures

### 4.1 Pre-emptive actions to be undertaken

Pre-emptive measures to minimise or prevent risk of harm to human health or the environment arising from the activities undertaken on the Bodangora Wind Farm are listed within the BWF OMP and OEMP. A summarized description of these measures is provided below in Table 13.

**Table 13: Bodangora Wind Farm Operational Environmental Mitigation Strategies to prevent pollution or risk of harm to human health**

| POTENTIAL IMPACTS / ASPECT | MITIGATION STRATEGIES |
|---|---|
| ***Soil and Water (BWF OEMP Section 5)*** | |
| Soil erosion caused by an increase in velocity and volume of surface water flows due to construction of hard surfaced roads, removal of vegetation, and reshaping of land profile. | • Retain sediment control measures such as silt fences installed during construction phase until cleared areas are sufficiently revegetated.<br>• Ensure all swale drains are sufficiently revegetated to infiltrate collected surface runoff from all impervious and developed areas.<br>• The site environmental checklist to be implemented by GE will also monitor runoffs.<br>• Ensure that all roads are sufficiently managing water flows so as to minimise the velocity of surface water and prevent erosion to the surrounding landscape.<br>• Ensure that overflows from water tanks do not cause erosion to the surrounding landscape;<br>• establish monitoring and reporting system for inspecting all soil and |

| POTENTIAL IMPACTS / ASPECT | MITIGATION STRATEGIES |
|---|---|
| | water management controls;<br>• continue maintenance program for all civil works with the objective of reducing the extent of maintenance works required as areas are effectively stabilised (roads);<br>• establish emergency response procedures;<br>• report all incidents and near misses to Site Management |
| Reduction of water quality in surface flows, natural watercourses, and manmade water bodies due to erosion of soil from disturbed landscape around project works. | • minimise the clearance of vegetation and ensure final earthworks are formed to widely disperse water and are promptly revegetated;<br>• Retain sediment control measures such as silt fences installed during construction phase until cleared areas are sufficiently revegetated.<br>• ensure that all roads are sufficiently managing water flows so as to minimise the velocity of surface water and prevent erosion and subsequent soil transportation;<br>• report all incidents and near misses to Site Management |
| Contamination of soil and/or water due to hazardous substance spill, leaking from hazardous substance storage, or inadequate storage and removal of rubbish/waste. | • any hazardous chemical brought to or stored on site must be accompanied by a Safety Data Sheet (SDS) and remain in place until the chemical is no longer required. GE must maintain a register of relevant chemicals and their SDS.<br>• a risk assessment incorporating any relevant SDS considerations must be completed prior to commencing any task involving hazardous chemicals<br>• only suitably trained persons shall handle or use hazardous chemicals<br>• there must be suitable storage of hazardous chemicals with appropriate strategies in place to ensure the risk of pollution incidents is eliminated or mitigated to as low as reasonably practicable including appropriately bunded areas, and secure hazardous substance storage containers which conform to Australian Standards<br>• hazardous goods storage containers and areas to be inspected for deterioration monthly<br>• hydrocarbon spill kits shall be provided by GE and placed on site to manage any spills that may occur<br>• all hazardous chemicals must be disposed of correctly (see Waste Management and Re-Use Sub Plan in this OEMP)<br>• report all incidents and near misses to Site Management |
| Monitoring and Reporting | • Informal visual checks of soil and water management control measures by site personnel day to day to ensure that control measures provided are effective and are functioning correctly. |

| POTENTIAL IMPACTS / ASPECT | MITIGATION STRATEGIES |
|---|---|
| | • Inspections by GE following significant rainfall (i.e. > 20 mm/24 hours) for all active erosion events where sediment is observed travelling >3m beyond roads/hardstands/laydown areas/cable routes must be reported and investigated as an environmental incident. |
| ***Flora and Fauna (BWF OEMP Section 6)*** | |
| Further reduction in native flora diversity due to changes to natural cycles caused by the construction and presence of wind farm infrastructure | • Use plants or seeds endemic to the area in any plantings undertaken.<br>• Use species for rehabilitation that have been chosen in consultation with landowners. |
| Disturbance to natural movements and behaviours of local native fauna | • Where any new fencing is required during operations, fencing will allow for native animal movement between remnant vegetation stands. Fencing must not prohibit any existing access to water sources such as dams and natural water courses. |
| Disturbance to native fauna habitat | • Bund oil storage locations to prevent leaks and spills entering drainage lines. Use appropriate containment facilities for chemical storage to prevent discharge to ground.<br>• implement Bird and Bat Adaptive Management Plan as described in Section 7 of this OEMP |
| Injury or death to birds and bats caused by operating wind turbine generators. | • Use mitigation measures outlined in the Iberdrola Australia Bird and Bat adaptive management plan (Section 7) |
| ***Noise (BWF OEMP Section 9)*** | |
| As per the project's Statement of Commitments, in the event that the commissioned turbine noise exceeds the approved noise limits, wind sector noise management may be implemented to reduce the noise impact of the wind farm in the area of concern. Wind sector management is when a turbine operating mode is altered to reduce noise from the turbine. Wind sector management would be put in place when the nature of the excess noise compared to allowed limits is understood, the options for wind sector management have been analysed, and the benefit of implementing the wind sector management have been understood. | |
| ***Waste (BWF OEMP Section 10)*** | |
| Contamination | No waste generated outside the site is to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the Protection of the Environment Operations Act 1997, if such a licence is required in relation to that waste. |
| Waste avoidance | Wherever possible the following measures should be implemented on site to avoid/reduce the generation of waste:<br>• Plan to source materials in correct quantities and size; |

| POTENTIAL IMPACTS / ASPECT | MITIGATION STRATEGIES |
|---|---|
| | • Order pre-cut and/or prefabricated materials wherever possible;<br>• Fabricate materials offsite wherever possible;<br>• Plan to purchase materials in quantities that reduce packaging;<br>• Organise to return packaging to supplier or re-use packing wherever possible;<br>• Minimise the need for re-work through efficient construction planning. |
| Waste Re-use | Reuse of materials should be maximised by:<br>• Reuse of earthen fill or access track/hardstand capping for rehabilitation or maintenance applications;<br>• Organise to return packaging to supplier or re-use packing wherever possible;<br>• Reuse of felled trees by mulching trees and using material for revegetation applications;<br>• Reuse of any cattle grids that are no longer required in current position during operation phase. |
| 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, hydrocarbons / oily rags, timber and concrete.<br>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. Any waste oil arising from equipment servicing will be stored in sealed containers in a covered and bunded area until it can be removed off-site to a suitable waste oil facility.<br>Any waste that is unable to be re-used, re-processed or recycled must be disposed at a facility approved to receive that type of waste. Records kept. |
| Waste Water Management | When constructed, the BWF project will have an Operation & Maintenance (O&M) office and workshop building which is located within the substation area. Wastewater from the office and workshop buildings will be minimised through the installation of AAA-rated water conservation devices, and managed using a biological wastewater treatment system. The system shall meet all requirements of AS/NZS 1547. |
| Waste Disposal | • Disposal will be viewed as the last option in the management of waste if avoidance/ re-use or recycling is not practical.<br>• 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. |

<table>
<tr><th>POTENTIAL IMPACTS / ASPECT</th><th>MITIGATION STRATEGIES</th></tr>
<tr><td></td><td>
<ul>
<li>A register of waste removed from the site will be maintained by site administration.</li>
<li>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.</li>
</ul>
The following table outlines examples of wastes that may be generated on site and their disposal methods:
<table>
<tr><th>Waste Type</th><th>Disposal Method</th></tr>
<tr><td>Waste oil, oily rags</td><td>Licensed waste transport contractor</td></tr>
<tr><td>Waste skips (general waste)</td><td>Licensed waste transport contractor</td></tr>
<tr><td>Recycled waste skips (paper & cardboard)</td><td>Licensed waste transport contractor</td></tr>
</table>
This data will be recorded on a Waste Register, and will be used by GE to monitor and evaluate the success of the waste management system implemented on the site, and to identify any areas that require further action.<br>
To further ensure compliance with this management system, the following measures will be carried out:
<ul>
<li>Inspect waste receptacles to check that materials are segregated and recycled as appropriate;</li>
<li>Incorporate the inspection of site waste management practices into regular site environmental audits.</li>
</ul>
</td></tr>
<tr><td>Waste Monitoring</td><td>
<ul>
<li>The Operation Environmental Management Plan will require routine inspection to ensure effective maintenance (of the waste water septic system) every 6 months</li>
<li>All work areas will be monitored day to day to ensure all wastes are being correctly managed, segregated and recycled, and that waste receptacles are being regularly emptied. Ensure that the waste register is kept up to date.</li>
</ul>
</td></tr>
<tr><td rowspan="4">Fuel and Oil Management</td><td>Regular inspection of the transformers and associated turbine equipment will be carried out to ensure good working and leak free condition</td></tr>
<tr><td>Procedures for maintenance will be documented and followed by maintenance staff</td></tr>
<tr><td>Hazardous substances will be safely stored in areas with containment in case of leaks.</td></tr>
<tr><td>Procedures for handling and storage of substances will be</td></tr>
</table>

| POTENTIAL IMPACTS / ASPECT | MITIGATION STRATEGIES |
|---|---|
| | documented and monitored. A number of hazardous substances have secondary containment measures. |
| | Staff will be trained in emergency response and clean-up procedures. |
| ***Bushfire (BWF OEMP Section 8)*** | |
| Ignition of trees, bushes, and / or grasses caused by welding, metal cutting, etc. and escalation of situation into a mobile bushfire. | Hot Works Permits must be obtained for all works which may result in the ignition of a fire. A hot work permit is issued by an authorised person before any hot work (grinding or cutting using angle grinders, cutting or welding works using arc /gas equipment or any activity that generates a flame or spark) is carried out. |
| | Hot Works Permits must not be issued on Total Fire Ban Days, on days when the Fire Danger Rating is Very High or above, 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. |
| | Use of explosives is not permitted during periods of high fire risk. |
| | Appropriate fire extinguishers must be located around substation, in all vehicles, and in all wind towers. |
| | Regular fire prevention inspections by the Rural Fire Service and implementation of any recommendations. |
| | A 20 metre inner protection area will be incorporated around turbines. |
| | Suitable buffers between vegetation and installed equipment and working areas will be maintained; |
| Build-up of dry fuel leading to increased risk of fire. | Ensure paper/cardboard/rags/etc waste receptacles are regularly emptied. |
| | Ensure there are no areas containing large amounts of dry vegetative fuel (such as leaves, felled trees or shrubs, tall dry grass) adjacent to any work areas of the project site. |
| | Ongoing vegetation management to ensure pasture in vicinity of site infrastructure is controlled including within the substation enclosure |
| Ignition source created by 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. |
| Ignition from lightning strikes | Adoption of lightning protection measures for both turbines and substations |
| | Smoking permitted only on laydown areas where appropriate disposal units are provided. |

| POTENTIAL IMPACTS / ASPECT | MITIGATION STRATEGIES |
|---|---|
| Ignition of bushfire caused by cigarette smoking and disposal of butts. | Appropriate fire extinguishers located around substation, in all vehicles, and in all wind towers. |
| Ignition of bushfire caused by 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. |
| | Avoid parking in long grass. |
| | Ensure ongoing maintenance of all vehicles used on site to minimise sparking from exhaust systems |
| Inadequate storage of combustible or flammable substances. | All Hazardous Chemicals and Dangerous Goods must be kept in secure storage facilities according to the regulations and designation of the SDS requirements. |
| Inadequate knowledge of bushfire contingency plan in an emergency situation. | All BWF inductions are to clearly explain the site's bushfire contingency plan and emergency response procedure. |
| | Everyone entering any part of the project site must either be accompanied by someone who is inducted to BWF or be inducted to BWF themselves. |
| | Liaison with emergency services, site familiarisation tours, and workshops including carrying out contingency plan. |
| | Clearly display site plan with relevant contact details and mitigation information. |
| Site personnel being unaware of a bushfire in vicinity of project site. | Establish effective liaison with emergency services. |
| | Site personnel to check Rural Fire Service website (www.rfs.nsw.gov.au) at least twice daily during the fire season (October 1st - March 31st). |
| | Iberdrola Australia Operations Control Centre (24/7) monitors the daily Fire Danger Ratings for the area and any fires nearby site and notifies the Site Manager as per the Notification Protocol. |
| Site personnel having no knowledge of declared Total Fire Ban Days | Establish effective liaison with emergency services. |
| | Site personnel to check Rural Fire Service website (www.rfs.nsw.gov.au) at least twice daily during the fire season (October 1st - March 31st) or more frequently as required. |
| | Hot Works Permits not to be issued on Total Fire Ban Days, on days when the Fire Danger Rating is Very High or above, or on days with high wind present. |
| | Access tracks will be suitable for the passage of fire fighting vehicles improving firefighting accessibility to the area of land within the project area. |

| POTENTIAL IMPACTS / ASPECT | MITIGATION STRATEGIES |
|---|---|
| Inadequate access to structures by emergency personnel | Alternative access tracks to installed equipment maintained where existing. |

## 4.2 Safety Equipment (equipment to reduce pollution risk)

The following safety equipment and site-specific controls are used to minimise the risks to human health or the environment and to contain a pollution incident:

**Table 14: Safety equipment and site-specific controls to contain potential pollution incident**

| Aspect | Safety Equipment/Measure | Storage Location (If Applicable) | MSDS Reference (If Applicable) |
|---|---|---|---|
| Erosion and Sediment Control | Permanent drainage features including table drains, energy dissipaters swales, bunds, V-drains, culverts, reseeding of exposed surfaces | Site wide | N/A |
| Transformers | Shut down Alarms, internal bunds | Base of turbine towers, on pad next to O&M building | |
| Substation | Oil and Water separator | Refer to Figure 1 | |
| Wind Turbines | Turbine alarm and shut down control systems | Within each turbine nacelle or turbine base. | |
| Vehicles | • Spill containment equipment (bunds, spill kits, recovery/contaminated material storage container(s))<br>• Spill collection equipment and oil-absorbent materials | O&M building | |

The site has a spill control procedure which is documented in detail in the BWF Emergency Response Plan (ERP). Spill containment and recovery equipment is available at key locations across the site, such as the O&M compound. Portable spill kits are also a requirement for all site vehicles. This aspect is addressed by the site induction process. The Spill Response Procedure Outline is provided in Figure 3 below.

## 4.3 Communicating with neighbours and the local community

Iberdrola Australia has an ongoing program of communications through the Bodangora Community Consultative Committee, which was formed in 2012. The Committee is responsible for organizing and conducting regular meetings

with local council, Landcare, neighbours, landowners, residents, and business owners affected by the Project. This process will continue throughout operations.

The Bodangora Windfarm website (https://www.iberdrola.com.au/our-assets/owned-renewable-energy-assets/bodangora/), will continue to communicate key issues in the interests of the community, including potential early warnings and regular updates throughout operations.

## 4.4 Minimising harm to persons on the premises

There are a number of initiatives implemented to minimise the potential for harm, in the unlikely event of an incident during operations of the BWF. These include, but are not limited to the following:

- Training, site inductions and toolbox talks
- Implementation of the Operations Management Plan (OMP) and Operations Environmental Management Plan (OEMP)
- Use of PPE at all times
- Site vehicle requirements
- Nominated safety wardens and first aid trained personnel on site at all times
- Designated safety points and clear delineation of emergency evacuation routes and designated muster points.
- Job Safety and Environmental Analysis (JSEA)
- Safe Work Method Statements (SWMS)

## 4.5 Actions to be taken immediately following an incident

***Notifications***

In accordance with general requirements of EPLs, and in the unlikely event of an incident, Iberdrola Australia shall report pollution incidents immediately after BWFPL becomes aware of the incident, to the NSW EPA, NSW DPE, NSW Ministry of Health, Fire and Rescue NSW, SafeWork NSW and the relevant local council/s. 'Immediately' has its ordinary dictionary meaning of promptly and without delay. GE are required to have in place an incident reporting and communication protocol, reviewed by Iberdrola Australia that is to be followed in the event of a pollution incident. Anyone who identifies a pollution incident must verbally report it to GE site management immediately. GE site management must then verbally notify Iberdrola Australia site management immediately. To ensure accurate information is provided, the Iberdrola Australia HSE Manager shall arrange, with GE, notification and all subsequent communication of the incident to environmental regulatory authorities as required. GE site management must also send Iberdrola Australia preliminary incident information. The BWF Site Manager shall be verbally notified of all other environmental incidents within 24 hours.

NSW Water is to be notified of any pollution incidents that have occurred in the drinking water catchment (i.e. to the east of the main range) where there are potential impacts on water quality. An Incident Register of all environmental incidents or potential incidents (near miss) shall be maintained by GE. This register will be made available for inspection upon request, by appropriate regulatory authorities and Iberdrola Australia or person/s working on behalf of Iberdrola Australia. GE must ensure that an appropriate level of investigation is undertaken for all environmental incidents relating to the operation of Bodangora. The investigation must be undertaken in a timely manner without delay and a copy provided to Iberdrola Australia upon completion. GE shall implement a system whereby any follow

up actions from these incidents can be recorded and status tracked to completion. The Bodangora Emergency Response Plan (ERP) must be referred to as required in the unlikely event of a pollution incident at Bodangora.

In accordance with Condition D7 of the Project Approval, the Department must be notified in writing to compliance@planning.nsw.gov.au within 7 days after the Proponent becomes aware of any non-compliance which includes pollution incidents. The notification must be made in accordance with the requirements set out within Condition D7. Where the incident is on leased land, the landowner is to be notified.

***Emergency Response Procedure***

Iberdrola Australia, along with its service contractor, has implemented a detailed Emergency Response Plan (ERP) for Bodangora Wind Farm which is reviewed and tested on a regular basis. The ERP provides a practical basis for site management in the event of an emergency, by using a single document for emergency response, and will be referred to as required in the unlikely event of a pollution event at BWF. Key actions to be followed in the event of a pollution incident that has or could lead to material harm, include:

1. Implement immediate corrective actions to prevent harm to people or the environment.
2. Immediately notify the Site Manager
3. The Site Manager is to determine materiality with assistance from the HSE Manager and other stakeholders as required
4. If material harm to the environment is evident, the appropriate authorities must be notified immediately.
5. The Site Manager shall notify the landowner and neighbours as relevant and / or in communication with emergency response authorities.
6. Iberdrola Australia's internal incident management processes shall be followed.

The above shall be undertaken as a guide to any pollution incident. The Site Manager and / or Site Supervisor shall provide the direction and instructions needed until emergency services personnel arrive on site, as and if required.

Specific pollution incident response procedures (including actions to be undertaken and responsible person) for individual potential hazard types identified in Section 3.1, including erosion of wind farm works and pollution of waterways through loss of containment of oil/fuel, are outlined in Appendix A of this report.

A flow chart summarising the key actions and contact requirements following a pollution incident is provided in Figure 3.

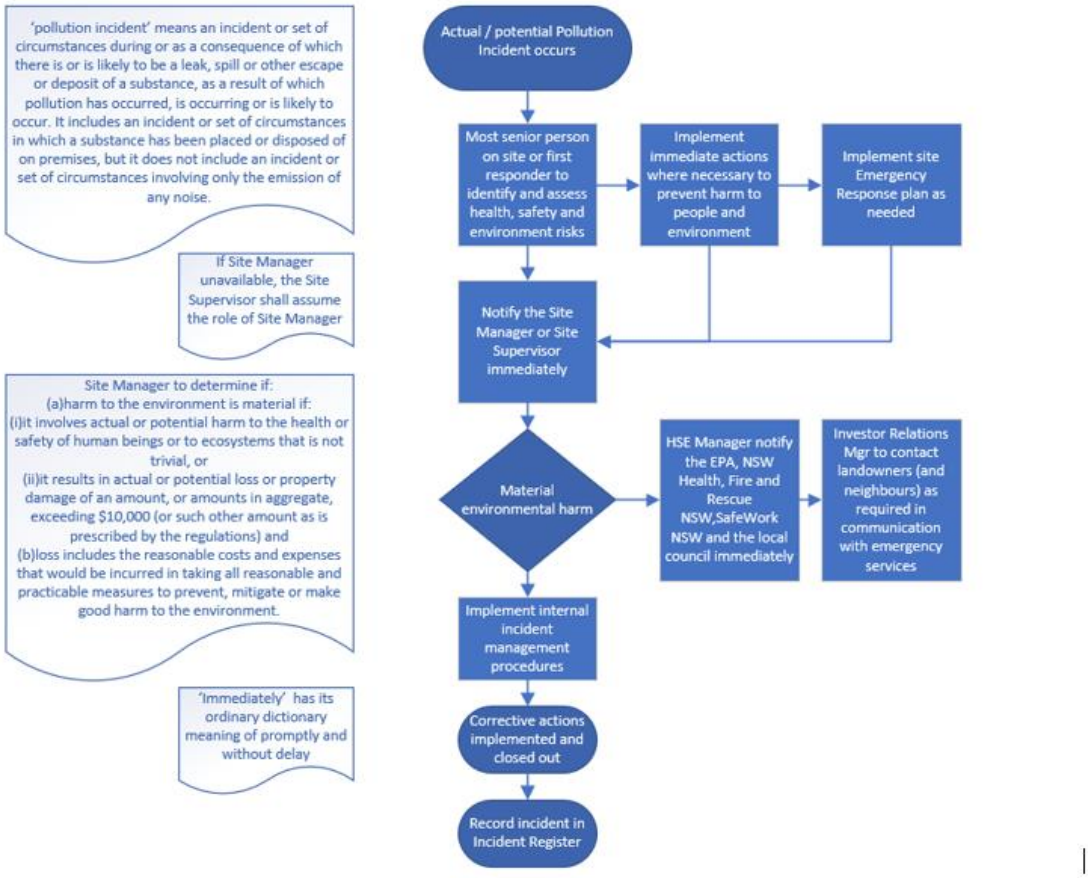


**Figure 3**

**Figure 3: Incident Response Flow Chart**

## 4.6 Staff Training

Iberdrola Australia will provide appropriate HSE training to all employees commensurate with their role, work activities and level of risk. An induction will be conducted on the commencement of employment, for job transfers, for Contractors and visitors to all sites.

Contractors will conduct a training needs analysis to identify the induction and training requirements for site personnel working or visiting within the site they control or the work they are undertaking. Contractors are responsible for keeping appropriate records of certification and training attendance.

Training will include:

- Site inductions
- Toolbox Talks
- Locations of sensitive areas / no-go locations within the Project Area
- Details of Hazards and Controls, including the importance of management of spills, leaks, illegal dumping and surface water quality within the Project area to prevent possible impacts to groundwater;
- Site emergency and incident response procedures.
- Incident reporting requirements and methods

- Site specific rules and procedures;
- Operation activities, associated risks and controls; and
- Regulatory and Relevant Authority requirements relevant to the work.

All Iberdrola Australia employees undertake HSE related training conducted as per the Iberdrola Australia Training Matrix outlined within the Iberdrola Australia Safety Management Plan. The O&M contractor will provide HSE training consistent with the Iberdrola Australia Safety Management Plan, internal procedures, and in-line with all regulatory requirements.

### 4.7 Testing of PIRMP

As required under the POEO(G) Regulation, Clauses 98C(1)(n),(o) and (p), 98C(2)(f) and (g), 98E(1) and 98E(2), testing of this PIRMP must be undertaken as follows:

- Routine testing of the plan every 12 months; and
- Within one month of any pollution incident occurring.

This plan must also include details, such as:

- the manner in which they are to be tested and maintained;
- The dates on which they have been tested and the name of the staff members who carried out the testing; and
- The dates they are updated.

Testing methods may include undertaking desktop simulations and practical exercises or drills.

Testing must cover all components of the plan, including the effectiveness of training. An example of how this may be undertaken would be to focus on a select environmental incident (or potential incident) and to review the process outlined within this PIRMP for notifications, actions to be taken to minimise and manage pollution, coordination with other agencies and other responders (including contact details), and the incident tracking process for update and improvement.

Details of the test of the PIRMP need to be recorded and where the PIRMP is updated it should be uploaded to the BWF website.

The EPA advises that significant penalties apply for not complying with this requirement.

## Appendix A: Pollution Incident Response

***Erosion and Sedimentation Impact***

Significant erosion of wind farm works after extreme rain fall (for example roads and hardstands) which could lead to significant transport of sediment to waterways or material harm to native landscape.

| | Action | By Whom |
|---|---|---|
| 1. | Prevent access to the area to prevent any escalation to the damage. | Most senior knowledgeable person at immediate site or first responder |
| 2. | If safe to do so, attempt immediate control activities such as temporary containment measures such as temporary embankments, sand bags or silt fencing and contact the Site Manager / Site Supervisor. | Most senior knowledgeable person at immediate site or first responder |
| 3. | Determine if emergency service response personnel required.<br>Seek engineering advice on appropriate actions to stabilise the affected area.<br>*Note if ongoing inclement weather conditions (such as heavy rain) prevents stabilisation activities, monitor the situation and apply temporary containment measure where possible.* | SEA Lead Service Technician |
| 4 | Maintain a log, including photographs of the damage. Determine if material harm has occurred or is likely to occur. If so contact Notify Senior Management and the Iberdrola Australia HSE Manager to initial process of contacting the required authorities. | SEA Lead Service Technician |

***Oil/fuel spill***

Significant loss of containment of oil or fuel which could lead to pollution of waterways and / or material harm to the environment. Types of loss of containment scenarios include:

- wind turbine gear box
- transformer (bunded)
- during lifting or transport operations
- moving machinery and heavy vehicles.

| | Action | By Whom |
|---|---|---|
| 1. | Implement immediate actions to contain the spill.<br>*This may include the use of temporary earth bunds or sandbags.*<br>Identify the product and obtain the MSDS for it.<br>*The MSDS should be referenced before handling or treating the spill.* | Most senior knowledgeable person at immediate site or first responder |

| | Action | By Whom |
|---|---|---|
| | If possible remove excess liquid from the temporary bund and store in appropriate drums.<br>*Refer to the MSDS for guidance on handling the product.* | |
| 2. | *Notify the Site Manager and the Lead Service Technician immediately* | Most senior knowledgeable person at immediate site or first responder |
| 3. | Determine if the emergency services response personnel are required.<br>*If the spill involves a large quantity of a flammable liquid such as petrol, the local fire service should be contacted.*<br>If the spill material is flammable liquid such as petrol, the area should be covered with foam from a fire extinguisher.<br>*Note that this advice may be given by the local fire emergency service* | Lead Service Technician |
| 4 | *Determine if there is actual or potential material harm to the environment. If there is, notify Senior Management and the Iberdrola Australia HSE Manager to initiate the process of notifying the relevant authorities.* | SEA Lead Service Technician |
| 5 | Seek advice on the most appropriate method of cleaning up the area. | SEA Lead Service Technician |
| 6 | Maintain a log of actions taken. | SEA Lead Service Technician |

## Appendix B: Environmental Risk Analysis

Below is the risk analysis applicable to the operations phase prepared for the project (as extracted from Appendix C of the BWF OEMP (V3).

### 18.1 RISK ASSESSMENT

The following provides a risk assessment analysis which has been carried out for the Bodangora Wind Farm using the qualitative risk analysis matrix shown in Table 18.3.

Table 18.4 – Environmental Risk Analysis

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| | | | | | | L – Likelihood, C - Consequence |
| LAND USE | | | | | | |
| Mineral Exploration | Development in an area of significant mineral potential. | C | 3 | High | Consultation with Department of Industry and Investment, Department of Primary Industries, and all mineral title holders.<br>The wind farm is likely to have minimal effect on underlying mineral resources. | Low |
| Agriculture | Development will reduce potential for existing primary production land uses. | D | 4 | Low | Assessment has determined development will not prevent or prejudice the continuation of existing primary production land uses.<br>Development will not result in subdivision (with exception for substation allotment)<br>Additional income for wind farm properties can be reinvested into improved rural production, reducing the potential for further subdivision.<br>Management measures relate to control of weed species, dust management and water as outlined elsewhere. | Low |
| VISUAL ASPECTS | | | | | | |
| Visual impact of turbines | Visual impact of turbines and infrastructure on local community and non-associated land owners.<br>Change to landscape character.<br>Cumulative impact. | C | 4 | Moderate | Removal of WTG 8, 9, 28 and 47 following land owner consultation, primarily to mitigate views and improve amenity.<br>The visual impact of the project has been assessed in Chapter 8 of this EA. Vegetation screening is proposed to mitigate in areas of high visual sensitivity, with additional screen planted to be undertaken subject to land owner and neighbour requests. | Low |
| | | | | | The spatial separation of proposed and existing infrastructure in the locality is expected to mitigate cumulative views. | |
| Visual impact of other infrastructure | Visibility of associated infrastructure including tracks, cabling, transmission lines. | C | 4 | Moderate | Earthworks will be restored as soon as practical following construction.<br>Cable trenches will be backfilled as soon as possible.<br>Overhead lines are largely located away from roads and minimised.<br>Substation is not visible from any dwellings or public roads. | Low |
| Shadow Flicker | Five dwellings have been identified which are likely to experience shadow flicker. All are associated land owners. Of these, two dwellings are at risk of experiencing shadow flicker levels beyond guidelines. | D | 4 | Low | Modelling indicates all five associated dwellings which are likely to experience shadow flicker will experience less than 45 minutes per day.<br>No neighbouring dwellings will experience shadow flicker given distance from turbines. | Low |
| Blade glint | Sun reflection off blades causing annoyance to local community and distraction to local road users. | C | 4 | Moderate | Blade surface is designed for low reflectivity with a matte coating to reduce turbine glint.<br>Turbine location at higher altitudes will negate blade glint. | Low |
| FLORA AND FAUNA | | | | | | |
| Avifauna Bird Strike | Potential for avifauna deaths by blade strike, air turbulence and barotrauma. | C | 4 | Moderate | The flora and fauna assessment has concluded that there is no supportive habitat or topographical features present suitable for birds which would be most likely to collide with turbines.<br>Records of bird heights identified the majority of birds fly below the rotating blade diameter.<br>Measures will be taken to reduce the impact to birds of prey, such as ensuring no turbine has perching places, and dead animals within 200 metres of a turbine are removed as soon as possible. | Low |
| Vegetation and Habitat | Extent of clearing required for infrastructure.<br>Disturbance to native fauna habitat. | C | 4 | Moderate | Infrastructure has been located to avoid habitat features, and native vegetation clearance will be minimal as the majority of tower locations and access routes are located over heavily modified grazing land. Large mature trees have been avoided and can be retained. | Low |

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| | | | | | Micrositing during final detailed project layout will occur to avoid clearing and identified areas of threatened or significant vegetation. Where clearing is required it will be undertaken in the presence of an ecologist.<br>A flora and fauna management sub-plan will be prepared as part of the CEMP.<br>Weed control measures will be implemented. | |
| Threatened species | Potential impact of project on threatened species. | C | 3 | Moderate | The flora and fauna assessment has identified that no threatened plant species identified under State legislation will occur or are likely to occur in the project area. Three threatened species and one threatened community which are identified under State legislation occur.<br>Mitigation measures outlined above will protect against impact to State legislated threatened species.<br>A field survey for the Superb Parrot will be undertaken to determine whether the species is only a winter visitor to the project area and the results reported to Department of Planning and DECCW. | Low |
| HERITAGE | | | | | | |
| Aboriginal Heritage | Potential disturbance of Aboriginal sites or objects. | D | 3 | Moderate | Comprehensive investigations have been undertaken. A heritage sub-plan will be prepared as part of the CEMP.<br>Track and cabling locations will be micro-sited to avoid sites of known heritage significance.<br>Where a known artefact site has been identified (listed as SU18/L1 in Chapter 10), a conservation strategy will be developed to detail the avoidance of this artefact by design through the diversion of the proposed access road around the artefact.<br>Unrecorded artefacts are likely to be present in low or very low densities only. The predicted impact following the comprehensive investigation is low.<br>Where any additional unrecorded Aboriginal objects are encountered, works shall cease immediately and DECCW will be notified immediately of the find. | Low |

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| | | | | | An additional archaeological survey will be conducted in any area proposed for development that has not been previously surveyed.<br>A cultural management protocol will document procedures required for impact avoidance or mitigation, developed in consultation with an archaeologist, the relevant Aboriginal communities and the NSW Office of Environment and Heritage. | |
| Non-Aboriginal Heritage | Potential disturbance to non-Aboriginal heritage sites | D | 3 | Moderate | A heritage sub-plan will be prepared as part of the CEMP.<br>None of the survey units or non-Aboriginal heritage items as identified within the project area have been identified to surpass archaeological significance thresholds which would preclude the proposed development.<br>Sections of the Sandy Hollow to Maryvale Railway is currently utilised as a farm road within the project area. This road is proposed for upgrade, however it is not expected that there will be any future impact beyond what is existing. A Statement of Heritage significance has been prepared and is located at Attachment A to **Attachment I**.<br>The Kaiser Mine will be identified as a restricted area during wind farm construction through the erection of fencing.<br>Where any additional historic items are encountered, works shall cease immediately to allow an assessment of the object by an archaeologist. | Low |
| NOISE | | | | | | |
| Operational noise | Potential for exceedance of operational noise guidelines for nearby sensitive receivers.<br>Impact from modulation, low frequency or infrasound noise.<br>Potential that noise will impact on health | D | 4 | Moderate | Comprehensive noise modelling of the operational noise aspects of the wind farm has been undertaken. Noise levels of the turbines and substation are predicted to comply with the relevant standards in a 'worst case' scenario.<br>In the event that the turbine noise levels exceed the noise predictions, the noise of the turbines will be reduced through the use of lower noise modes for use under certain operating conditions which produce lower noise levels in accordance with the required standards.<br>Compliance with the stringent guidelines for operational noise will account for the noise of the 'swish' of turbines (modulation) and for low level noise. | Low |

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| | Heavy loads causing degradation to local roads | | | | Measures to ensure the safety of all road users, including the provision of traffic control personnel where required, avoiding sensitive areas such as schools en route, and warning and general signposting on access routes.<br>Restrictions on timing of delivery of large equipment by oversize trucks.<br>A community information and awareness program and a community complaints procedure established.<br>An inspection and maintenance program undertaken to ensure road conditions are maintained. Road access/occupation permits will be obtained as access works are required.<br>Induction of staff to ensure awareness of traffic management requirements. | |
| Construction on-site impacts | Vehicles driving off-road causing disturbance to natural habitats and causing erosion<br>Degradation of access tracks due to vehicle movements | C | 4 | Moderate | A Traffic Management Plan will be prepared as a sub-plan to CEMP in consultation with local Councils, including Wellington Council, and the RTA.<br>Construction of tracks near environmentally sensitive areas will be avoided or guided by relevant specialists.<br>Implementation of sediment and erosion control programs.<br>On-site speed restrictions implemented, access limited to defined tracks, and induction of staff to ensure awareness of traffic management requirements.<br>At conclusion of construction, any tracks no longer needed will be restored and revegetated. | Low |
| Operation impacts | Impact of periodic visits by vehicles | C | 5 | Low | The likely impact to adjoining land uses and the road network during operation will be small given the expected traffic volumes. | Low |
| TELECOMMUNICATIONS | | | | | | |
| Radio | Possible interference with radio broadcasts and reception | E | 4 | Low | Comprehensive telecommunications investigation undertaken.<br>Siting of turbines has considered communication impacts and potential issues addressed. Turbine layout is expected to provide adequate clearances. Overseas and local experience demonstrates that radio broadcasts are unlikely to be impacted by wind farm operation. | Low |

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| | | | | | If there is any additional movement of construction cranes outside of the rotor diameter, then movements will be in accordance with Fresnel clearance requirements for the project. | |
| Mobile phone reception | Possible interference with mobile phone reception in the area | E | 4 | Low | It is not likely that turbines will impact cellular mobile coverage. Transitional signal deterioration is unlikely but may occur as the mobile phone moves through the area.<br>In the event of deterioration, investigations would be conducted and steps undertaken to rectify the situation. | Low |
| Television | Interference to digital television.<br>Interference to analogue television. | D | 4 | Low | A reduction in service area through reflected signals, or through shadowing is very unlikely.<br>Some interference with analogue television may occur for dwellings particularly to the south of the wind farm however digital only television will be achieved by 30 June 2012 which is prior to the completion of the Bodangora Wind Farm.<br>Where any degraded service is reported than a range of techniques are proposed to be implemented to improve the service at the dwelling at the cost of the proponent, such as the replacement or repositioning of antenna or satellites.<br>Additional consultation will occur with commercial television station operators in the area. | Low |
| Microwave communication | Potential for interference to point to point microwave communication links | D | 4 | Low | Impacts to microwave band point to multi-point registrations are located at significant distances from the wind farm.<br>Consultation with owners of microwave band point to multi-point registrations will occur as the operators of these systems will be best place to determine impact. | Low |
| GREENHOUSE GAS | | | | | | |
| Greenhouse gas emissions | Net generation of greenhouse gases from manufacture, construction, operation and decommissioning | D | 4 | Low | Within three months of operation, the wind farm will offset any greenhouse emissions.<br>Significant savings to national emissions will be provided in the long term. | Low |

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| GENERAL ENVIRONMENTAL MANAGEMENT MEASURES | | | | | | |
| Air quality | Dust and minor air emissions may impact local area<br>Vehicle emissions | C | 4 | Moderate | Works will be implemented as part of the Soil and Erosion Control Plan to mitigate the potential for dust, including wetting exposed soils, gravel capping on access tracks, and rehabilitation as soon as possible.<br>Local water supplies will be used for dust control and will be balanced on the amount of available water.<br>All construction vehicles will maintain emission controls.<br>Given the scale of the project and existing farming activities such as the ploughing of fields, it is expected that dust generated by the construction of the wind farm can be effectively managed and will form only a minor contribution to air emissions in the wider region. | Low |
| Soil management | Soil erosion as a result of construction<br>Controls inadequate to minimise erosion | C | 3 | High | Assessment has identified areas with erosion potential. The project design has minimised the extent of soil disturbance, and vegetation clearance has been minimised.<br>Soil and Water Management Plan to be prepared for the CEMP to outline erosion control measures.<br>Project component will consist of only a small component of land area.<br>The majority of construction activity will occur where erosion potential is low and ongoing monitoring and maintenance will occur. | Moderate |
| Water management | Impact of sediment run-off<br>Excessive use of local water supplies | C | 3 | High | Upgrading of existing crossings will reduce the impact on site drainage.<br>Overhead cables will be considered at creek crossings to minimise disturbance and erosion risk. Cable crossings at creeks are to be installed to appropriate guidelines.<br>Trenches will be open for minimal periods only, and backfilled to preconstruction condition. | Moderate |

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| | | | | | Water for the project will be obtained from Wellington Council, and will be negotiated with Council at the time of construction. The expected water usage is not excessive and is required for mitigation measures, such as dust control. Minimal water will be required during the operational phase. | |
| Hazards | Spills or leaks of sewerage, fuel, chemicals or batteries | C | 3 | | Hazardous substances will be safely stored in areas with containment in case of leaks.<br>Procedures for handling and storage of substances will be documented and monitored. A number of hazardous substances have secondary containment measures.<br>Staff will be trained in emergency response and clean-up procedures. | |
| SAFETY ASPECTS | | | | | | |
| Aircraft safety | Turbines may impact upon the safe operation of aircraft in the area for recreational and agricultural purposes | E | 2 | High | The Wellington Aerodrome is 4.5 kilometres to the south-west of the nearest turbine proposed, and will orientate north-west/south-east, which will orientate the direction of planes away from the proposed turbines.<br>All relevant stakeholder to the Wellington Aerodrome have been advised of the wind farm. Final as built locations will be provided to relevant stakeholders for inclusion on aviation charts.<br>The wind farm will be readily apparent to recreation and agricultural air space users, and can be readily avoided. | Low |
| Physical safety | Risk associated with tower failure, blade separation, and ice throw<br>Vehicle accidents | C | 4 | Moderate | Construction works to be carried out in accordance with all relevant standards. Turbines will shut down if maximum speed is reached to avoid damage.<br>Land owners will be advised to avoid turbine locations during the few periods of below freezing temperatures.<br>Steep sections at or adjacent to access tracks will be identified prior to construction commencing, step access locations will be 'benched' and barriers, warning signs, and/or tapes will be used. Construction will occur during daylight hours only and working conditions will be monitored. | Moderate |
| Electrical safety | Electrical failure<br>Lightning strike | C | 4 | Moderate | Development will occur in accordance with all relevant standards.<br>Lightning protection as a standard feature on all modern turbines. | Low |

| ASPECT | POTENTIAL IMPACT | L | C | LEVEL OF RISK | PROPOSED MANAGEMENT | MITIGATED RISK |
|---|---|---|---|---|---|---|
| | | | | | Protective equipment will be installed to detect faults, and the substation will be protected by surge dividers, lightning masts and an underground earth grid.<br>Fencing will protect access to live electrical equipment. | |
| Bushfire risk | Ignition of a bushfire through construction and operational activities<br>Bushfire ignition as a result of lightning strike | E | 2 | High | A Bushfire Risk Management Plan will be prepared in consultation with the NSW Rural Fire Service.<br>Alternative access and egress routes exist for most turbine sites should they be required in an emergency.<br>Contractors will be required to comply with all legislation. Native vegetation may be required for removal where in excess of 100 millimetres high at access tracks and work site locations. A mobile water tank will be kept on-site for fire fighting purposes, and fire fighting tools will be kept at each work station. Work will be limited on high bushfire risk days. | Low |
| Electric and Magnetic Fields | Health impacts associated with high voltage transmission lines | E | 4 | Low | Potential impacts have been considered of EMF and project design has avoided proximity of electrical equipment to dwellings.<br>Location of turbines and substations are in areas not frequented by public.<br>Construction and operation will be in accordance with relevant electrical safety codes. | Low |
| OTHER ASPECTS | | | | | | |
| Property values | Potential for wind farm to affect land and property values in surrounding area | C | 4 | Moderate | Review of available studies suggest that wind farms do not have a measurable impact upon property values. | Low |
| General, Administrative and Consultation Commitments | Development varies from approval and commitments | C | 4 | Moderate | The proponent has a commitment to all general, specific and consultative measures as outlined within this document, and the draft Statement of Commitments.<br>Legislative requirements for environmental management will be adhered to.<br>Ongoing reporting and monitoring for various aspects is required to the Director-General. | Low |

Appendix C: O&M Building General Arrangement: