
Silverton Wind Farm Operations

Environmental Management Strategy





DOCUMENT HISTORY

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DOCUMENT APPROVAL

Revision	Approving Authority	Name	Date Approved
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1 INTRODUCTION

1.1 Background

This Silverton Wind Farm Operations Environmental Management Strategy (OpEMS) follows on from the Silverton Wind Farm Project – Overarching Environmental Management Strategy (OEMS) prepared by AGL for construction.

1.2 Scope

This OpEMS provides the strategic framework for managing environmental aspects related to the servicing and maintenance of the Silverton Wind Farm. The servicing and maintenance apply to 58 wind turbines and associated infrastructure which is currently being undertaken by GE Renewable Energy Australia Pty Ltd.

With the exception of the Bird and Bat Adaptive Management Plan which was implemented when the erection of wind turbines commenced. This OpEMS has been implemented since May 2018 when the testing and commissioning of the wind turbines commenced.

Silverton Wind Farm Operations involves the servicing and maintenance of 58 GE 3.43 – 130 wind turbines along with replacement or repair of other assets such as the access roads, the 33Kv electrical reticulation, the 33Kv substation and associated infrastructure. The operational period began upon energisation of the first turbine, which occurred in May 2018.

The servicing and maintenance works can be grouped into the following four major categories:

Table 1: Service and maintenance activities breakdown

Service Type	Activity/Timing
Regular Service (scheduled and unscheduled) of wind turbines, roads, hardstands and substation) on current infrastructure Client/Proponent visits	Turbine service 12 monthly, using most vans. Substation service once per year (contained to the substation). Roads regraded as required using road graders. Client/Proponent visits using 4WDs.
Unscheduled Service of current infrastructure (i.e., met masts – no road access, overhead lines – no road access)	Unscheduled service as required. Service-people and subcontractors will be required to walk to the met masts/overhead lines unless it is unreasonable/unfeasible to do so.
Off current infrastructure environmental monitoring and reporting	Regular mapping, observation, and reporting (timeliness as per schedule – Table 4) in off road areas for the purpose of monitoring road and soil condition, Porcupine Grass Sparse Woodland and other vegetation, fence condition, rock clusters including Barrier Range Dragon sightings, bat and bird sightings, pest sightings and monitoring condition of the heritage items. This monitoring will be conducted by foot only.



Service Type	Activity/Timing
Urgent or major construction type activities that only occur in rare/unusual cases (e.g. once in every five years)	In this case, the Service team is to refer to the Operational BAMP and SWP when conducting urgent repairs unless there are major deviations to the current plan. Examples of urgent/major construction activities could be (a cable is damaged; it needs to be excavated and replaced)

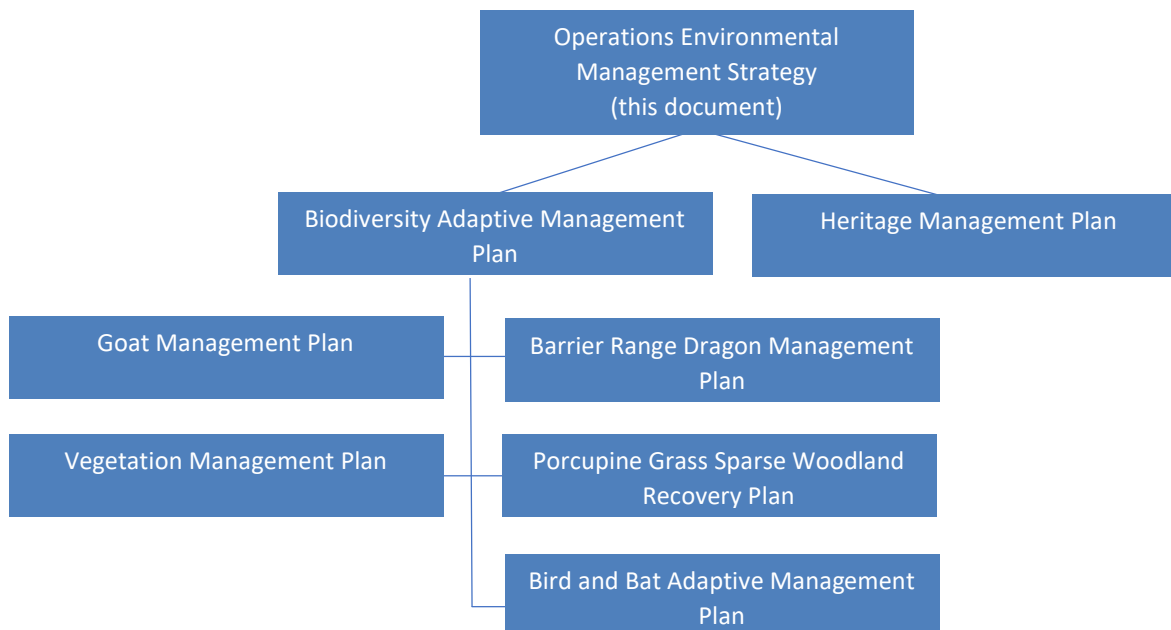
1.3 Review

This OpEMS will be updated to take account of any new strategic measures or actions adopted to improve the environmental performance of the Silverton Wind Farm operations that are a result of recommendations following on from an inspection, an audit, an incident investigation, or a complaint. Any updates to this OpEMS will be resubmitted to DPE for approval.

2 STRATEGIC FRAMEWORK FOR THE OPERATIONS

The operational maintenance of the Silverton Wind Farm will be guided by this OpEMS together with a number of specific plans required under the project approval. All plans have been implemented by the site team from the GE Renewable Energy Australia Pty Ltd. This framework of documents is shown at Figure 1.

Figure 1. Framework of documents for the operations





3 STATUTORY APPROVALS

3.1 Environmental Planning and Assessment Act 1979

On the 22 December 2016, the Planning Assessment Commission of NSW issued an approval under Section 75W of the *Environmental Planning and Assessment Act 1979* for Modification 3 (MOD 3) of the Silverton Wind Farm, subject to conditions. Condition 1 of the Schedule 4 requires that an Environmental Management Strategy be prepared for the project. This OpEMS is in response to this MOD 3 project approval condition.

3.1.1 Summary of recommendations in the Project Approval MOD 3 for Silverton Wind Farm

Overall, the Department considers that the proposed modification would reduce biodiversity impacts compared with the approval project, and that any residual impacts can be managed through careful design and micro-siting of turbines and other infrastructure.

To ensure this occurs, the Department has recommended that AGL be required to: comply with strict clearing limits for the Porcupine Grass CEEC and mallee woodland/shrubland communities;

- *Enhance the Porcupine Grass CEEC to ensure a net gain in the conservation value of this community on the site, including performance and completion criteria that would need to be met over the life of the Project;*
- *Avoid any development within mapped Barrier Range Dragon hotspots; locate turbines as far away as practicable from treed vegetation, rocky outcrops, caves and disused mine shafts/sites;*
- *Setback turbines at least 200m from any raptor nests; and*
- *Provide final layout plans demonstrating how micro-siting has been applied to avoid impacts on known threatened fauna locations and habitat*

AGL would also be required to prepare a detailed Biodiversity Management Plan and Bird and Bat Adaptive Management Plan for the project, in consultation with OEH and Department of Industry – Lands. These documents would include a description of the measures that would be implemented to achieve with the obligations set out above, and a detailed program for monitoring and reporting on the performance of the project over time.

3.1.2 Environmental Management Strategy Conditions – Schedule 4, Condition 1

Prior to the commencement of construction, the Proponent must prepare an Environmental Management Strategy for the project to the satisfaction of the Secretary. This strategy must:

- a) *Provide the strategic framework for environmental management of the project;*



- b) *Identify the statutory approvals that apply to the project;*
- c) *Describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;*
- d) *Describe the procedures that would be implemented to:*
 - a. *Keep the local community and relevant agencies informed about the operation and environmental performance of the projects;*
 - b. *Receive, handle, respond to, and record complaints*
 - c. *Resolve any disputes that may arise;*
 - d. *Respond to any non-compliance*
 - e. *Respond to emergencies; and*
- e) *Include:*
 - a. *Copies of any strategies, plans and programs approved under the conditions of this approval; and*
 - b. *A clear plan depicting all the monitoring to be carried out in relation to the project, including a table*
 - c. *Summarizing all the monitoring and reporting obligations under the conditions of this approval.*

Following the Secretary's approval, the proponent must implement the Environmental Management Strategy.

3.2 Protection of the Environment Operations Act 1997

On the 11th of January 2017, the NSW Environment Protection Authority (EPA) issued an Environmental Protection Licence (EPL) No. 20882 under Section 55 *Protection of the Environment Operations Act 1997* (POEO Act) for the Silverton Wind Farm located in the Barrier Ranges near the township of Silverton. The EPA licence has been issued in the name of GE Renewable Energy Australia Pty Ltd. All servicing and maintenance workers on the wind farm site are expected to comply with the EPL.

Condition L7.1 of the original EPL restricted the licensee to the generation of 3 GWh and the licensee was not to operate any wind turbine and generator electricity until a licence variation was obtained. A variation was granted on the 23rd of February 2018, with this document in accompaniment to which the current licence classifies electrical works >1,000.00 – 4,000.00 GWh annual generating capacity.



4 RESPONSIBILITY AND ACCOUNTABILITY

All service and maintenance workers on the wind farm site have a responsibility to control pollution during operations and to report any incidents causing or threatening material environmental harm to the environment. This means that any site personnel can stop work to prevent and/or minimise any material harm to the environment. Responsibilities and accountabilities of key site personnel are outlined in Table 2.

Table 2: Responsibilities and accountabilities of key operations personnel

Role	Responsibility	Authority	Accountability
Site Manager	Executes the OpEMS and all other environmental related plans for the site	Can direct any site personnel to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment	Reports to the Senior Service Manager – GE Renewables
EHS Leader	Develops the OpEMS and validates any updates made by the Site to the OpEMS or any of the specific plans required under the project approval	Can direct any site personnel to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment	Reports to the GE APAC EHS Leader
Site Lead Technician/ Supervisor	Supervises and monitors the environmental performance of site service and maintenance team and manages any environmental incidents and complaints	Can direct any site personnel and subcontractors to take reasonable and feasible measures to prevent and/or minimise any material harm to the environment	Reports to the Site Manager

5 KEEPING THE LOCAL COMMUNITY INFORMED

The Silverton Wind Farm Operations appreciates that the local community must be kept informed about the environmental performance of the project and this has been and will continue to be achieved through several mechanisms, three of which are as follows:

- Community Consultative Committee (CCC)
- AGL website
- Public Register for the Environment Protection Licence (EPL)



The Silverton Wind Farm operations recognizes that the community and stakeholder groups must be and have been:

- Consulted on the management plans and proposed changes to the operational related managements plans specified under the MOD 3 project approval; and
- Able to provide feedback on key issues that may arise during operations

5.1 Community Consultative Committee

The Proponent has convened a CCC to the satisfaction of the Secretary of the DPE, in accordance with the *Community Consultative Committee Guidelines for State Significant Projects (2016)* (or its latest version).

The Silverton Wind Farm operations continue to participate in the CCC meetings led by the Proponent during operations. The Silverton Wind Farm operations has provided the committee copies of the following:

- Environmental management plans relates to the operations;
- Results of environmental monitoring during operations;
- Audit reports of the operations; and
- Reports on any community concerns or complaints related to the works along the Silverton Wind Farm operations responses to such matters

5.2 Project Website

The Silverton Wind Farm operations understands that this OpEMS will be publicly available on the AGL website. The Silverton Wind Farm operations also understands that the website will make other works related information publicly available such as the following:

- Statutory approvals for the operations;
- Approved managements plans for the operations;
- A summary of the monitoring results of the operations, which have been reported in accordance with the approved management plans;
- A register of operational related complaints; and
- The annual Statement of Compliance with the EPL for the operations.

5.3 Public Register for the Environment Protection Licence

The Silverton Wind Farm operations understands that the public register for EPLs, which is administered by the Environment Protection Authority (EPA), will contain a copy of the EPL for public



inspection. This public register will include any mandatory audits required to be undertaken in relation to the EPL along with any pollution studies required by a condition of the EPL, any pollution reduction programs required by a condition of the EPL, and any penalty notices issued in relation to the operations.

6 POLLUTION COMPLAINTS

Any operational related pollution complaints from the community will be referred directly to AGL via the following contact details:

- Phone: 1800 039 600
- Email: AGLCommunity@agl.com.au

When dealing with pollution complaints, an attempt will be made to record the following details:

- Date and time of the complaint
- Method by which the complaint was made
- Personal details of the complainant
- Nature of the complaint
- Action taken in relation to the complaint, including any follow-up contact with the complainant

Details of any pollution complaints will be kept for at least four (4) years after the complaint is made and a complaints summary will be supplied to the EPA as part of an annual return for the EPL. In addition, pollution complaints will be recorded on a complaints register which will be published on the website.

All complainants will be responded to within twenty-four (24) hours.

7 DISPUTES

The Silverton Wind Farm operation expects that any community concerns about the operations of the wind farm will be lodged directly with AGL via the following contact details:

- Phone: 1800 039 600
- Email: AGLCommunity@agl.com.au

If a dispute arises whereby an agreement cannot be reached between AGL and a complainant about matters relating to the operations of the wind farm, then AGL will refer the matter for resolution or advice to the National Wind Farm Commissioner whose contact details are as follows:

- Phone: 1800 656 395



- Email address: nwfc@environment.gov.au

8 NON-COMPLIANCE

8.1 Non-compliance with the project approval conditions

If there is non-compliance during operations which relates to an exceedance of criteria described in schedule 3 of the MOD 3 project approval, GE Renewable Energy Australia Pty Ltd will, at the earliest opportunity:

- Take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
- Consider all reasonable and feasible options for remediation (where relevant) and prepare a report for the DPE describing those options and any preferred remediation measures or other course of action; and
- Implement remediation measures, in consultation with relevant government agencies.

GE Renewable Energy Australia Pty Ltd recognizes that exceedance of a criteria may constitute a breach of the project approval and may be subject to compliance action by the DPE.

8.2 Non-compliance with the Environment Protection Licence

If there is non-compliance during the works which relates to a condition of the EPL, GE Renewable Energy Australia Pty Ltd will immediately notify the EPA and will also undertake immediate action to rectify the non-compliance. Any non-compliance with the EPL will be outlined in the Statement of Compliance which GE Renewable Energy Australia Pty Ltd must complete and supply to the EPA as part of an Annual Return in respect of the reporting period for operations.

8.3 Non-compliance with a management plan

If there is non-compliance with a measure described in a management plan and that measure is not a project condition or a condition of the EPL, then GE Renewable Energy Australia Pty Ltd will record this in Gensuite¹ and report it to the Site Service Manager. The Site Service Manager will be responsible for ensuring corrective action.

¹ Gensuite is a cloud-based EHS software solution used by GE, that is an intuitive and robust best-practice based functional, enabling compliance & management system.



8.4 Other events and compliance

GE Renewable Energy Australia Pty Ltd will record any other notable events and subsequent investigations that are not non-compliances in their annual report to the EPA and DPE. Notable incidents may include health and safety incidents; property damage incidents and other environmental/weather related incidents that are not related to the project approval or the EPL.

9 EMERGENCIES

GE Renewable Energy Australia Pty Ltd shall provide immediate notification to relevant agencies including the DPE of any incident that has caused, or threatens to cause, material harm to the environment. For details about response arrangements for environmental related emergencies during operations, refer to the following documents:

- Silvertown Wind Farm Operations – operations Environmental Management Plan
- Silvertown Wind Farm Operations – Pollution Incident Response Management Plan

10 RELATED STRATEGIES AND PLANS

This OpEMS should be read in conjunction with the following documents that are authorised under the conditions of the MOD 3 project approval and are applicable to the operational period of the wind farm:

- Biodiversity Adaptive Management Plan
 - Porcupine Grass Sparse Woodland Recovery Plan
 - Barrier Range Dragon Management Plan
 - Goat Management Plan
 - Vegetation Management Plan
 - Bird and Bat Adaptive Management Plan
- Heritage Management Plan

11 MONITORING AND REPORTING SUMMARY

11.1 Monitoring and reporting summary

A summary of the monitoring and reporting obligations derived from schedules 2 and 3 of the MOD 3 project approval are provide in Table 3 and 4, respectively. In relation to monitoring and reporting aspects associated with the EPL, this is provided in Table 5. GE Renewable Energy Australia Pty Ltd is responsible for environmental monitoring during operations and illustrated in Figure 2 are the important components.



11.2 Frequency of monitoring

Environmental monitoring will be conducted as follows:

- A weekly EHS inspection will be carried out of the site
- The Site Service Manager will undertake an EHS audit of the site every three (3) months
- Government agencies may conduct environmental checks of the site at intervals of their choosing, as part of a regulatory inspection or audit

11.3 Frequency or reporting

Environmental reporting during operational period of the wind farm will be both progressive and annual. GE Renewable Energy Australia Pty Ltd will submit to AGL a monthly EHS report which will contain, as a minimum, the following:

- The incidents register of actual and potential environmental incidents
- The corrective actions register (including actions from incident investigation, audits and inspections)
- A summary of all key correspondence with environmental regulators, including any notices or directions issued by a regulator

In addition to the above, an Annual Return will be submitted to the EPA in respect to the reporting period for the EPL. This Annual Return will comprise the following:

- A Statement of Compliance;
- A Monitoring and Complaints Summary;
- A Statement of Compliance – Licence Conditions;
- A Statement of Compliance – Load based fee;
- A Statement of Compliance – Requirement to Prepare Pollution Incident Response Management Plan;
- A Statement of Compliance – Requirement to Publish Pollution Monitoring Data; and
- A Statement of Compliance – Environmental Management Systems and Practices.

Table 3: Summary of monitoring and reporting obligations – Schedule 2 of the MOD 3 project approval

Condition	Monitoring Requirements	Reporting Obligation
Condition 1	Monitor for any material harm to the environment	Report on any material harm to the environment



Table 4: Summary of monitoring and reporting obligations – Schedule 3 of the MOD 3 project approval

Condition	Monitoring Requirements	Reporting Obligation
Condition 5	Monitor shadow flicker from operational wind turbines	Report if shadow flicker from operational wind turbines exceeds 30 hours per annum at any non-associated residence
Condition 8	Monitor noise generated by the operation of wind turbines	Report if noise generated by the operation of wind turbines exceeds the relevant criteria listed under this condition at any non-associated residence
Condition 9	Monitor noise generated by the operation of ancillary infrastructure	Report if noise generated by the operation of ancillary infrastructure exceeds 35 dB(A) LAeq (15 minute) at any non-associated residence
Condition 18	Monitor the implementation of the Biodiversity Management Plan	Report on the implementation of Biodiversity Management Plan
Condition 19	Monitor the implementation of the Bird and Bat Adaptive Management Plan	Report on the implementation of the Bird and Bat Adaptive Management Plan
Condition 20	Monitor the heritage items listed under this condition	Report any direct or indirect impact on the heritage items listed under this condition
Condition 21	Monitor the implementation of the Heritage Management Plan	Report on the implementation of the Heritage Management Plan

Table 5: Summary of monitoring and reporting obligations – Environment Protection Licence

Condition	Sub-Condition	Monitoring Requirements	Reporting Obligation
5	Monitoring and Recording Conditions		
	5.M1	Monitoring records	Records and results must be kept in line with Condition 5 of the EPL, this section outlines details that must be kept
	5.M2	Recording of pollution complaints	In line with this condition any pollution complaints must be kept on file with particular details noted
	5.M3	Telephone complaints line	A telephone complaints line must be made available, and the public must be aware of this number
6	Reporting Conditions		
	6.R1	Annual return documents	Please refer to text in Section 11.3
	6.R2	Notification of environmental harm	Notifications must be made by telephoning the Environment Line service on 131 555
	6.R3	Written report	This outlines where on reasonable grounds the EPA believes an event has occurred on or to the premise, the



Condition	Sub-Condition	Monitoring Requirements	Reporting Obligation
			licensee must respond as per the instructions in this section
7	General Conditions		
	7.G1	Copy of licence kept at the premises or plant	Licence must be made available to everyone including the EPA should they request it
8	Special Conditions		
	8.E1	Post commission noise monitoring	Within 6 months of commencement of operations the licensee must undertake noise monitoring and submit a report to the EPA

Figure 2: Important environmental monitoring components

