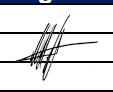




Sapphire
Wind Farm

Electromagnetic Interference Management Plan

SWF01-3-PLN-ENV-12-ElectromagneticInterferenceMgt-180620-1600-A

Rev	Description	Originator	Reviewed	Approved	Signature	Date
180615-1828	Issued for use	P Millar	D Dymond	B Filby		15/6/18
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Details of Revision Amendments

Document Control

The latest approved version of this Document will be available for all personnel on the SWF Confluence Space. The Head of Construction and Asset Management (HOCAM) will maintain, review and update this Document in accordance with the Records & Documents Procedure.

Amendments

Each new revision to the Document will be distributed to all required personnel for review and approval.

The revision number is included at the end of the document number, which is noted in the footer of each page. The document will be allocated a new revision number each time a change is made to the document and changes will be in red for easy reference.

When a new revision to the document is available, a notification email will be distributed to all personnel by the Head of Construction and Asset Management advising of the update.

The Head of Construction and Asset Management is responsible for the implementation and review of the Document. The Head of Construction and Asset Management will approve new revisions of the Document via the review and approval process a detailed in the Records & Documents Procedure.



Electromagnetic Interference Management Plan

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1. Overview

This document is about describes the appropriate measures for the effective management of Electromagnetic Interference. It is for use by all workers and their supervisors and managers.

2. Background

This Electromagnetic Interference Management Plan (EIMP) outlines the processes and control measures to mitigate impacts of operational activity that has the potential to give rise to electromagnetic interference.

Electromagnetic signals (or radio waves) are transmitted throughout the country as part of telecommunication systems by a wide range of operators. Such systems are used for radar, radio broadcast, television, mobile phones and mobile and fixed radio transmitters.

There is the potential for electromagnetic interference from any large structure, including wind turbines, which occur within or close to the signal path. Signals can be interfered with or reflected by the rotating blades of a wind turbine, which could degrade the performance of the signal.

2.1 Potential Impacts

The Facility has been designed to avoid interference with point to point radio communication links. No turbines are located within a disruptive distance of a transmitting or communication tower.

Mobile phone reception is mainly dependent on the position of the receiver. The receiver is able to move around both natural and unnatural obstacles in the landscape and wind turbines will have minimal impacts on signal quality.

There is expected to be minimal impact on television picture quality for residences surrounding the Facility. There is still the chance that some landowners in the area may be affected, in particular those where the Facility interferes with a direct signal from the local transmitting tower.

2.2 Management Principals

The key principle of the EIMP is to ensure that there are minimal impacts on radio communications, mobile phone reception and television reception due to electromagnetic interference.

2.3 Baseline Television Assessment

Prior to the commencement of commissioning of the Facility, SWF performed an assessment of the existing quality of television reception at a representative sample of receptors located within 5 kilometres of WTGs. This assessment was undertaken in line with **Condition F2** of the Conditions of Approval and provides a benchmark for television reception and will allow any interference attributable to the Facility to be determined with more certainty.

3. Risks

Risk Description	Cause	Potential Impacts	Probability	Consequence	Risk Score	Mitigation Strategies
Interference to registered communication licensees	Blockage and scattering of signal by WTGs	Loss of service, financial loss to communication service provider, potential legal action	Rarely	Moderate	Low	Modification of antennas and installation of amplifiers to boost signals
Mobile phone reception interference in the vicinity of the Facility	Blockage and scattering of signal by WTGs	Annoyance for local residences	Rarely	Insignificant	Low	Investigate options for improving reception, including switching providers and technical solutions for improving reception Telstra installed a mobile phone tower adjacent to the Facility which has increased mobile phone coverage.
Television reception interference at residences within 5km of the Facility	Blockage and scattering of signal by WTGs	Annoyance for local residences	Likely	Minor	Medium	Condition F3 provides for the modification or replacement of antenna or parasitic antenna system, land line to a better located antenna or installation of a satellite service if interference is caused by the Facility.

4. Management Strategies

Management Actions	Strategies	Responsibilities
Rectification of television reception	<p>Condition F2 of the State CoA, requires that an assessment of the existing quality of radio and television reception be undertaken for a representative sample of residences located within five kilometres of a wind turbine. This was undertaken in November 2017.</p> <p>Condition F3 requires that in the event of a complaint regarding television/radio transmission during the operation of the Facility, from a receptor located within five kilometres of a wind turbine, SWF shall investigate the quality of transmission at the receptor compared to the pre-commissioning assessment and where any transmission problems can be reasonably attributable to the Facility, rectify the problems through the</p>	Environment Manager

Management Actions	Strategies	Responsibilities
	implementation of measures including: <ul style="list-style-type: none"> a) modification to or replacement of receiving antenna; b) installation and maintenance of a parasitic antenna system; c) provision of a land line between the affected receptor and an antenna located in an area of favourable reception; or d) other feasible measures. 	

5. Management Controls

Control	Purpose	Reference
Complaints Register	To record details of noise complaints from landowners and public	Feedback and Complaints Register

6. Monitoring & Inspection

Description	Frequency
Respond to complaints regards TV reception as per complaints procedures.	As received

7. Key Performance Indicators

KPI	Measurement
No un-actioned complaints regarding electromagnetic interference	Complaints Register
Resolution of electromagnetic interference complaints within 3 months	Resolution reports and agreements