Chapter 26

Environmental Management

26.0 Environmental Management

26.1 Powerlink Queensland's Commitment to Environmental Management

Powerlink Queensland is committed to the protection of the environment and management of adverse environmental impacts as a result of Powerlink Queensland activities. Every Powerlink Queensland individual is responsible and accountable for environmental management, and Powerlink Queensland's leaders are active role models of this commitment.

Powerlink's Health, Safety and Environment Policy outlines the commitment to delivering environmental outcomes for everyone, everywhere and everyday by the following.

- Setting targets and objectives to monitor performance aimed at the elimination or minimisation of environmental harm.
- Consulting and communicating with employees and other stakeholders on relevant environmental matters.
- Applying a continuous improvement framework to the development, implementation and review of standards, procedures and supporting documentation which complies with environmental statutory obligations; is fit for purpose; and drives protection of the environment and prevention of pollution.
- Systematically identifying, assessing, and managing as far as reasonably practicable the environmental impacts which may arise from Powerlink Queensland's activities.
- Ensuring environmental responsibilities are clearly defined and individuals are accountable for performance within their scope of responsibility.
- Providing the necessary resources to meet these commitments.

26.2 Environmental Management Plans

The mitigation and management measures for this Project have been proposed in line with Powerlink's Standard Environmental Controls Specification. Additional measures have been proposed where required to provide further mitigation and management measures specifically for the Project.

All constructions measures proposed for the Project are documented in Appendix I Environmental Management Plans. Three construction environmental management plans (EMP) have been prepared for the Project, for the transmission line, Copperfield River substation, and Mount Fox substation. The EMPs contain in each document:

- roles and responsibilities
- performance criteria
- monitoring and compliance, including audits
- training and competency.

Each EMP is capable of being read as a stand-alone document without reference to other parts of the EAR.

Management and mitigation measures relevant to design and operation of the Project are provided below.

26.2.1 Design

Table 27-1 Design environmental management measures

Measure	EAR Chapter Reference
All Project Components	
Powerlink Queensland intends to address any Aboriginal cultural heritage risks and meet its Duty of Care through the development and implementation of Cultural Heritage Management Agreements (CHMAs) with each of the Aboriginal Parties, in accordance with the *Aboriginal Cultural Heritage Act 2003*.	Indigenous Cultural Heritage, Section 16.0, Chapter 16
Powerlink Queensland is actively engaging with each of the Native Title groups to develop CHMAs, which will include agreed methodology for the identification and management of Aboriginal cultural heritage sites and values within, and in the vicinity of, the final alignment. This is expected to include detailed cultural heritage surveys of the alignment with the Traditional Owners.	Indigenous Cultural Heritage, Section 16.0, Chapter 16
Management measures for groundwater impacts will be required if water is sourced from bores for construction. This will be determined at the detailed design phase and will include consultation with landholders.	Hydrology, Section 7.3.1.4, Chapter 7
The volumes of water required for the Project and their locations will be determined at the detailed design phase. If water is to be sourced from a watercourse, Powerlink Queensland will extract water in accordance with the '*Exemption requirements for constructing activities for the take of water without a water entitlement (WSS/2013/666 Version 3.03, updated on 9 December 2017'* or any later revision. If Powerlink Queensland cannot meet the exemption requirements of the above document, a water licence application will be submitted with DNRME.	Hydrology, Section 7.3.1.5, Chapter 7
Substations	
Rainwater tank(s) will be provided at each substation site for general use excluding drinking water. Water tanks will be enclosed and provided with first flush devices in order to improve quality of rainwater caught and stored on site for use.	Project Description, Section 3.6.1.5, Chapter 3
All roads into the substation compound and equipment area will be either gravelled or bitumen sealed.	Project Description, Section 3.6.2.7, Chapter 3
The substations are required to be installed above the 0.5% AEP water level in accordance with the Planning for stronger, more resilient electrical infrastructure guidelines.	Hydrology, Section 7.3.1.2, Chapter 7
A Substation Stormwater Drainage Management Plan will be developed as part of the detailed design phase. The plan will provide the stormwater drainage strategy, drainage system and any pre-treatment proposed prior to discharge of surface water runoff.	Hydrology, Section 7.3.1.3, Chapter 7
The substations will be surrounded by a large cleared buffer area for protection in the event of a fire.	Bushfire Risk, Section 22.2.2, Chapter 22

Measure	EAR Chapter Reference
Queensland has adopted the Australian Standard for the Construction of Buildings in Bushfire Prone Areas - AS3959 – 2009. AS3959 sets out the requirements for the construction of buildings in bushfire prone areas in order to improve their safety when they are subjected to burning debris, radiant heat or flame contact generated from a bushfire. Project buildings constructed will be consistent with the Standard.	Bushfire Risk, Section 22.3, Chapter 22
Transmission Line	
Any required consents from resource interest holders will be sought once detailed design is completed and prior to construction activities commencing.	Project Description, Section 3.3 Land, Section 4.2.4, Chapter 4
The location of access tracks on each property will be confirmed closer to the construction phase in consultation with each landholder.	Project Description, Section 3.5.1.2.2, Chapter 3
Where transmission lines cross road reserves, approval will be sought from the relevant road authority under Section 102 of the *Electricity Act 1994*.	Project Description, Section 3.5.2.7 24.1.1, Chapter 3
Where possible, structures will be located 50 m from watercourses. Where transmission lines cross watercourses, previously cleared tracks for existing crossings will be preferentially used to minimise new watercourse crossings.	Project Description, Section 3.5.2.8 Land, Section 4.2.3 and 4.3 7.3.1, Chapter 4
Where bed level crossings for new access tracks are required, design will be required to comply with the *'Accepted Development Requirements for Operational Work that is Constructing or Raising Waterway Barrier Works'*.	Land, Section 4.1.2, Chapter 4
Flood extents for the Burdekin River for the 1% AEP are extensive and transmission lines will not be able to span this entire extent. Therefore transmission lines will be required to be installed in the Burdekin River floodplain. The structures will aim to be sited outside of overland flow channels. Foundations are generally designed in accordance with AS7000:2010 (Overhead Line Design) and AS2159:2009 (Piling – design and installation).	Hydrology, Section 7.3.1.1, Chapter 7
Clearing of large habitat trees, particularly those around creek lines and those with hollows present should be avoided by implementing design measures such as raising tower heights, where possible and spanning transmission lines overhead.	Ecology Transmission Line Report, Section 5.1.2, Chapter 5
It is recommended that the Project avoids clearing hollow-bearing trees in areas of mapped greater glider habitat.	Ecology Transmission Line Report, Section 5.3.2.1, Chapter 5

Measure	EAR Chapter Reference
Sharman's rock-wallaby • The Project must retain the landscape structure (rocky boulders) in known core habitat areas to ensure no loss or reduction in the area of occupancy. • Shrubs and preferred forage species such as fig trees will be retained throughout the known core habitat areas. • The Project must retain as much tall vegetation as practicable to help preserve shelter sites and reduce predation risk. Where possible, the Project will consider spanning transmission lines overhead to avoid the impacts described above.	Ecology Transmission Line Report, Section 5.3.2.2, Chapter 5
Locate site offices, construction camps, stockpiling/laydown areas, plant and equipment storage areas away from permanent water bodies.	Ecology Transmission Line Report, Section 5.3.2.10, Chapter 5
Structure location has been a consideration to minimise access impacts to properties. Structures are not placed on areas with existing cropping activities, or within areas of significant agricultural infrastructure.	Land Use, Section 13.3, Chapter 13
Detailed planning to be undertaken for conductor stringing across State-controlled roads and other regional roads in consultation with DTMR and relevant local authorities.	Transport and Traffic, Section 18.4, Chapter 18
Road upgrade or rectification will be undertaken (as agreed between the relevant local authorities and Powerlink Queensland) where mitigation measures are required to address issues associated with the haulage of construction materials such as pavement degradation and insufficient road geometry.	Transport and Traffic, Section 18.4, Chapter 18
Subject to the construction traffic distribution/movement within the major transport routes and number of construction traffic traversing railway level crossings, liaison with Queensland Rail (QR) may be required to identify the impact, safety issue and adequacy of the current level crossing control treatment.	Transport and Traffic, Section 18.4, Chapter 18
Consultation with the relevant authority or landholder of local airstrips may be necessary to implement controls to minimise hazards or restrictions created by the draft alignment for landing, aerial spraying or aerial mustering activities etc.	Transport and Traffic, Section 18.4, Chapter 18
Transmission lines are designed to be compatible with the impacts of potential natural hazards that may occur within the proposed easement and potential fire impacts to the transmission lines are limited.	Bushfire Risk, Section 22.2.2, Chapter 22
The transmission line design will include all current design principles and safeguards to avoid arcing and line breakage.	Bushfire Risk, Section 22.3, Chapter 22
The structure foundations of the transmission line will be located to ensure that there are no physical impacts to the Copperfield Dam pipeline, and no interruption to the water supply.	Infrastructure, Section 24.2 and 24.3, Chapter 24
The Project will be designed to ensure sufficient separation distance between the proposed and existing transmission/sub transmission lines.	Infrastructure, Section 24.3, Chapter 24

Measure	EAR Chapter Reference
The Project will be designed to consider the requirements of private infrastructure within the Project area. This may include the installation of visual marker balls on the transmission line near landing airstrips, where deemed necessary for safety.	Infrastructure, Section 24.3, Chapter 24
To the greatest extent possible, seek to avoid tower placement in locations that are potentially visually prominent from residences and public viewing points on local roads, including the 'Great Inland Way' Tourist Drive.	Visual Amenity Report, Section 8.0, Chapter 8
Retain existing vegetation, where possible around the corridor or associated with roads and properties near the corridor to the greatest extent compatible with safety.	Visual Amenity, Section 14.3, Chapter 14

26.2.2 Operation and maintenance

Table 27-2 Operation and maintenance environmental management measures

Measure	EAR Chapter Reference
All Project Components	
Operational Noise • Appropriate plant and equipment to be selected for each task to minimise the noise contributions. • Plant to be turned off when not in use. • Plant is to be regularly maintained, and repaired or replaced if it becomes noisier. • Emphasis should be placed during driver training and site induction sessions on the potential adverse impact of reversing alarms and the need to minimise their use. • Non-tonal reversing alarms to be used where practicable.	Noise and Vibration Report, Section 6.7, Chapter 6
Flammable and combustible liquids (i.e. fuel) will be stored within facilities designed to AS1940–2004 'The Storage and Handling of Flammable and Combustible Liquids'.	Bushfire Risk, Section 22.3, Chapter 22
Burning of vegetation is prohibited, unless a permit is obtained by a local fire authority and Powerlink Queensland.	Bushfire Risk, Section 22.3, Chapter 22
Substations	
Regular security checks will also be carried out. Remotely controlled operational cameras will be installed as remote video monitoring of the substation enables a quick response to issues.	Project Description, Section 3.6.3, Chapter 3
Vegetation regrowth control within the substation compound and under the incoming power supply transmission lines will be undertaken to maintain electrical safety clearances between the conductors and vegetation.	Project Description, Section 3.6.3, Chapter 3
Ablution facilities will require regular servicing and all waste transport must be undertaken by a licensed regulated waste transport contractor, with waste tracking certificates to be completed. Regulated wastes must only be disposed of at an appropriately licensed facility (e.g. sewage treatment plant).	Waste Management, Section 23.3.2.1, Chapter 23

Measure	EAR Chapter Reference
Transmission Line	
Powerlink Queensland employees and contractors working within the easement will do so in accordance with relevant health, safety and environmental guidelines and procedures, as will those working on the structures themselves.	Electric and Magnetic Fields, Section 21.4.2.4, Chapter 21
Where the possibility that a transmission line could cause interference with the operation of an electric fence running parallel to the line, Powerlink Queensland will provide mitigation measures to assist the owner of any electric fence installation that might be adversely affected.	Electric and Magnetic Fields, Section 21.5, Chapter 21
Powerlink Queensland will provide mitigation measures to assist the owner of any conductive infrastructure that might be adversely affected.	Electric and Magnetic Fields, Section 21.4.4.1, Chapter 21
Should radio or television interference be identified, Powerlink Queensland can assist people experiencing reception problems caused by transmission line by providing advice and, if required, signal amplification equipment.	Electric and Magnetic Fields, Section 21.5, Chapter 21
Powerlink Queensland will assess the potential for induced charge in proximal metal objects, and propose mitigation measures for any objects in or near the easement that may be affected.	Electric and Magnetic Fields, Section 21.5, Chapter 21 Bushfire Risk, Section 24.3, Chapter 24
In the event that corona–induced interference becomes a problem, Powerlink Queensland will arrange to undertake any necessary remedial work.	Electric and Magnetic Fields, Section 21.5, Chapter 21
Powerlink Queensland maintains its easement through routine vegetation maintenance to ensure vegetation remains outside of untrained exclusion zones and incompatible species do not interfere with the safe operation of the transmission line.	Bushfire Risk, Section 22.3, Chapter 22
Cleared vegetation will not be placed in a location which may increase any fire hazard and impact on the Project in the event of a fire.	Bushfire Risk, Section 22.3, Chapter 22

26.2.3 Decommissioning

Table 27-3 Decommissioning environmental management measures

Measure	EAR Chapter Reference
All Project Components	
All necessary permits and/or approvals which are required to undertake decommissioning works will be sought and received prior to decommissioning works commencing.	Project Description, Section 3.5.4.3, Chapter 3
Prior to decommissioning of the transmission line, a Decommissioning Management Plan which provides detail regarding the proposed decommissioning works, environmental risks associated with decommissioning and management and mitigation measures will be prepared.	Project Description, Section 3.5.4.4, Chapter 3