CopperString 2.0

Environmental management

Volume 2 Chapter 19

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19. Environmental management

19.1 Purpose of this chapter

This chapter provides an outline of the environmental management measures that will be developed and implemented to address potential environmental impacts to be addressed over the life of the Project from planning and design through to construction and operation. Decommissioning and rehabilitation of temporary and permanent works has been considered where necessary within the construction and operational phases of the Project. The following sections explain the overall context of the Project's environmental management plans and how elements such as approval conditions and proponent commitments will be incorporated. It provides an overview of the environmental management framework and relates directly to the Terms of Reference (TOR) relevant to environmental management. A table cross referencing the TOR is provided in Volume 3 Appendix A TOR Cross-reference table.

A Framework Environmental Management Plan for the Project is provided in Volume 3 Appendix Q Framework environmental management plan.

Section 19.2.1 provides an overview of the environmental management framework.

19.1.1 Defined terms

The following are a list of defined terms utilised throughout this chapter.

'**Corridor selection**' – means the baseline investigation corridor of the transmission line (a nominal 1,060 km long corridor). The corridor selection is 120 m wide from Woodstock to Dajarra Road and 60 m wide from Dajarra Road to Mount Isa, Dajarra Road to Selwyn and Selwyn to Phosphate Hill and Cannington. The 4 km long section of the corridor selection from Dajarra Road Substation to Chumvale Substation is 60 m wide and a 3 km long section from Dajarra Road Substation to the Dugald River 220 kV overhead line is 80 m wide.

19.2 Environmental management framework

19.2.1 Overview

Impacts associated with the Project will be managed in accordance with a project specific environmental management system (EMS). The EMS will provide provisions for identifying roles and responsibilities, staff training, monitoring and internal auditing and will generally guide the development of the Project environmental management plans (EMPs).

The Project will be managed at each phase of the project in accordance with an EMP as follows:

- Planning and design phase – Project Framework Environmental Management Plan
- Field Development Plan – EMP (Design / Construction Planning)
- Construction phase – EMP (Construction)
- Operational phase – EMP (Operations).

The context of each EMP in relation to the Project phases as well as the relationship to the Environmental Impact Statement (EIS) approval conditions and proponent commitments are described in more detail in Sections 19.2.2 to 19.2.7 and Figure 19-1.

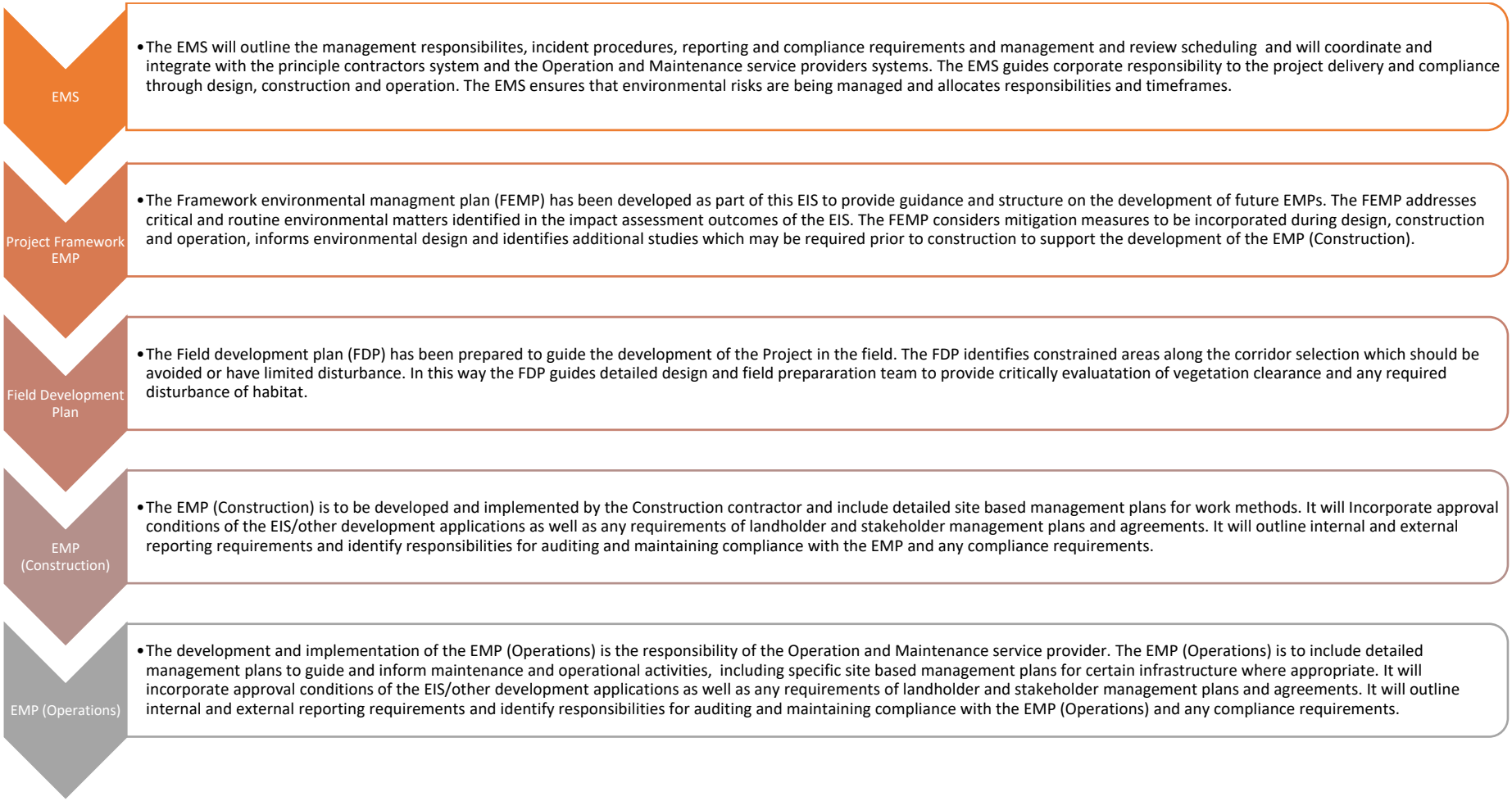


Figure 19-1 Context of EMP development

19.2.2 Relationship to environmental impact statement

The outcomes of the assessment undertaken for the Project EIS will be captured in the Project Framework Environmental Management Plan (FEMP). Notably, the relevant impacts identified throughout the EIS and the respective mitigation measures and proponent commitments will be summarised into a specific management plan for each environmental aspect (e.g. noise and vibration) this is discussed further in Section 19.2.5.

19.2.3 Environmental Policy and Record

CuString places the highest value on environmental performance and will be responsible for achieving environmental compliance as part of their corporate governance as developers / owners of the project. CuString is committed to ensuring that the following corporate values are achieved:

- Environmental harm and pollution is minimised through the active identification and management of environmental risks;
- Ensuring the efficient use of resources, recycling of materials and reduction of waste;
- Compliance is maintained with relevant environmental legislation, regulation and standards as well as project approval conditions;
- An environmental management system is implemented that is developed in accordance with AS/NZS ISO 14001; and
- Regular review and analysis of environmental performance is undertaken to identify and implement continual improvement.

CuString will ensure that the principle construction contractor's environmental record and policy aligns with these corporate values to achieve compliance with legislation and approved conditions. This policy will be updated, as necessary prior to subsequent project phases to ensure the policy reflects CuString's commitments to environmental mitigation and management.

CuString is in the feasibility and planning phase of the CopperString project and does not own or operate any other infrastructure. They have conducted project investigation field surveys along the corridor selection in accordance with relevant regulatory requirements and has not been prosecuted for any breaches under relevant environmental Commonwealth, Queensland or international laws during the previous ten years.

19.2.4 Environmental management system

Consistent with their corporate values, a simple EMS will be developed and implemented on the Project that will coordinate and integrate with the principle Contractors system and the Operations and Maintenance service providers system. The aim of this approach is to minimise duplication of compliance reporting and clarification of responsibilities (Contractors) and accountabilities (CuString). The EMS will be designed to achieve the corporate values and monitor the management of environmental hazards, risk and approval requirements. The EMS forms the core platform to implement and manage the commitments and obligations made by CuString within the Framework Environmental Management Plan (FEMP), Field Development Plan (FDP), Construction and Operational and Maintenance EMPs.

It is expected that the principle Contractors system will be in accordance with the provisions of AS/NZS ISO 14001:2015 Environmental Management Systems – Requirements with Guidance for use (Standards Australia). These plans and procedures will be developed progressively as the project progresses through each project phase. The environmental management measures

and plans that have been identified during the impact assessment are discussed in Section 19.3.

19.2.5 Project Framework Environmental Management Plan

A Project FEMP has been developed in accordance with the Department of Agriculture, Water and Environments 'Environmental Management Plan Guidelines' (2014) and incorporates the outcomes of the assessment undertaken in the EIS. The Project FEMP is provided in Volume 3 Appendix Q Framework Environmental Management Plan.

Environmental management plan

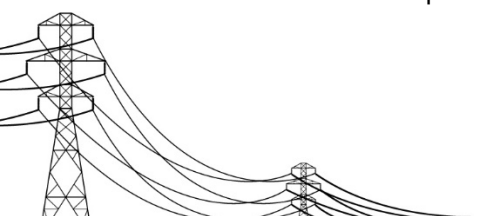
A FEMP has been presented as part of the Project EIS to inform project planning, design, construction and operations. The extensive environmental studies and investigations which have been undertaken as part of the EIS, have been used to inform the development of the FEMP. The Project FEMP identifies the overarching components of the Project FEMP and will serve to guide the implementation of the plan during planning and design and further development of the EMP (Construction) and EMP (Operations). The components of the environmental management plan include:

- Environment and Sustainability corporate values
- Planning, objectives and legal obligations
- Resources, roles, responsibilities and authorities
- Competence, training and awareness
- Communication, consultation and involvement
- Documentation, document control and records
- Operational controls
- Emergency preparedness and response
- Monitoring, inspections and audits
- Incident management
- Complaints management
- Non-conformity, corrective action and preventative action
- Environmental reporting
- Management review and continuous improvement.

Relationship to environmental design

The Project FEMP provides overarching environmental objectives and performance criteria to be achieved throughout the life of the Project and incorporates the management measures from the EIS which are to be implemented during the planning and design of the Project. Additional studies will be undertaken during the design phase (once vehicle access along the corridor selection is made available) to inform the EMP (Construction) including site specific assessments of the potential impacts associated with key construction areas such as laydowns and accommodation footprints, and finalising the location footprints of permanent infrastructure.

These management measures will ensure that the Project is designed to minimise adverse impacts to the environment during construction and operations phases. These management measures are outlined in the Project FEMP and FDP and will be subsequently incorporated into the development of the EMP (Construction) and EMP (Operations).



Environmental aspects and structure of management plans

The Project FEMP identifies the aspects of the Project which are likely to have significant environmental impacts as identified in the EIS and subsequently require consideration during the planning phase and further management and monitoring during the construction and operations phases. The Project FEMP outlines the management plans for the relevant environmental aspects and impacts associated with the Project, which will inform development of the EMP (Construction) and EMP (Operation). These management plans provide environmental management objectives for each aspect and outlines management measures to be implemented, the timing and the responsibility for each, across the Project. The general structure of each management plan is outlined in Table 19-1.

Table 19-1 Structure of management plans

Element	Description of Content
Conditions of approval	Cross reference the conditions of approval from the Coordinator General and/or other approvals.
Project Description	A description of the project and activities to be undertaken.
Objectives	Objectives of the environmental management plan should be defined and tailored to the environmental issues outlined in the plan.
Environmental management roles and responsibilities	Allocation of roles and responsibilities for compliance with conditions and implementation of the commitments made in the environmental management plans.
Reporting	A description of internal and external reporting requirements and include a list of required reports, the required content, any reporting triggers, document control and reporting recipient. Reporting requirements should be consistent with any conditions of approval.
Environmental training	All people involved with the Project should receive relevant environmental training to ensure responsibilities are understood when implementing environmental management plans.
Emergency contacts and procedures	Identify key emergency contact responsible for management of environmental emergencies. Establish procedures for managing environmental emergencies.
Environmental management measures	
Existing environmental values and potential impacts	A description of the environmental values likely to be impacted by the Project (direct and indirect), including the nature of the impact and any short or long term effects.
Risk assessment	Undertake a risk assessment for each potential impact including estimating the likelihood and consequence of each impact.
Management objective(s)	The overarching objective to be achieved for the environmental value likely to be affected by the Project.
Performance criteria	Measurable outcomes or indicators prescribed to gauge whether the management objectives are being met.

Element	Description of Content
Management and mitigation measures	The strategies, tasks or methods proposed to achieve the performance criteria. This section provides the measures relevant to design, construction and operation.
Monitoring requirements and corrective actions	The proposed monitoring activities to measure the performance criteria against relevant thresholds or trigger values and the corrective actions to be implemented where certain performance criteria are not met.
Closeout / Project completion	Recorded evidence that no further actions or monitoring is required and performance standard has been achieve.
Environmental auditing and review of environmental management plan	Include a schedule or triggers for auditing the implementation and effectiveness of the plan. Should include both internal and external audit requirements.

The mitigation measures identified within this EIS have been incorporated into the FEMP (Volume 3 Appendix Q Framework environmental management plan).

Commitments made within this EIS are summarised in Volume 3 Appendix J Project commitments register.

19.2.6 Field Development Plan

The Field Development Plan (FDP) has been developed to provide guidance to the design and field preparation team regarding which areas along the corridor selection should be avoided, or have limited disturbance. It will ensure that that detailed design process evaluates the vegetation clearing and disturbance of habitats required, in a manner that is compliant with the impact assessment mitigation measures detailed in the EIS.

19.2.7 EMP (Construction) and EMP (Operation)

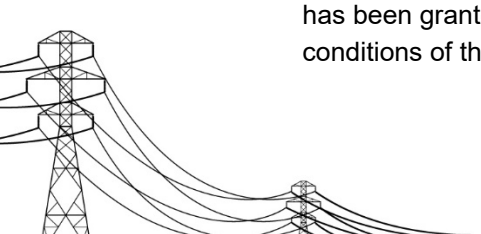
The EMP (Construction) and EMP (Operation) will set out a detailed procedure for managing environmental impacts during the construction and operation of the Project respectively and will be developed in accordance with the objectives, performance criteria, management measures and monitoring requirements stipulated in the Project FEMP. The EMP (Construction) and EMP (Operation) will also incorporate the approval conditions issued for the Project and any commitments made by CuString in the EIS.

Where it was determined in the EIS, that particular areas along the Project are environmentally sensitive or where the proposed construction activities demonstrate a high risk for environmental damage, a site-specific, site based management plan will be prepared.

19.2.8 Site based environmental management plans

Where required, the EMP (Construction) and EMP (Operation) will identify the need for a site based management plan(s) for specific activities of the Project.

A site based management plan will be developed to accompany the respective permit / approval application where required for certain (generally high-risk) activities. Once the permit / approval has been granted, the site based management plan will be updated to incorporate any relevant conditions of the approval.



19.2.9 Grievance Procedure

The EMS will include the development and implementation of a grievance and dispute resolution procedure to ensure any complaints from landholders and other stakeholders are managed effectively and efficiently. Where necessary, this may include monitoring or changes to environmental management plans and procedures.

19.2.10 Review and Auditing

The EMS framework will facilitate continual improvement in performance by the review and, where necessary, revision of the environmental management plans, procedures and monitoring. This will be undertaken periodically, as necessary, and prior to the commencement of subsequent project phases to enable the CuString to adapt to the changes in predicted and actual environmental impacts arising in each project phase.

Periodic audits of each plan will also be undertaken, as necessary, to ensure compliance with regulatory requirements and CuString environmental policy.

19.2.11 Training

Employees and contractors will undergo site inductions and training relating to environmental management in accordance with the EMS documentation and CuString environmental management commitments.

19.3 Environmental values and commitments

The impact assessment undertaken for this EIS has identified management measures and monitoring required to be implemented in order to address the impacts of the project. These are outlined in Volume 3 Appendix Q Framework environmental management plan for each environmental aspect. An outline of the objectives and performance criteria, management measures and monitoring requirements of each environmental aspect is discussed.

Table 19-2 lists each environmental aspect and the management sub-plans which have been identified in the EIS. The environmental management plans will include the following key components:

- Scope and objectives of the plan
- Brief outline of the potential impacts that have been identified for the relevant issue
- Details of the specific mitigation and management measures that will be implemented including an implementation strategy and the performance criteria (as measurable outcomes) to be adopted
- Roles and responsibilities of management, employees and contractors (as applicable) for the implementation of the plan
- Monitoring requirements
- Reporting protocols and requirements, including regulatory agencies, and
- Process for review and evaluation of the effectiveness of the plan including outlining the process for the corrective actions to be made, if warranted.

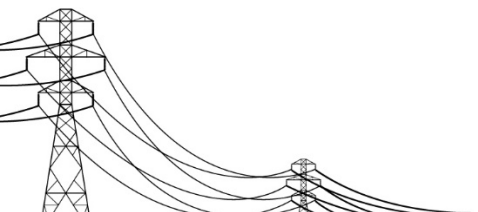
CuString will engage with relevant stakeholders, as necessary, as part of the development of these plans.

CuString's commitments to environmental management are detailed throughout the EIS and are also summarised in Volume 3 Appendix J Project commitments register.

Table 19-2 Environmental Management Sub-Plans for the Project

Environmental Aspect	Management Plan	EIS Reference
Land	Field Development Plan Rehabilitation Plan	Volume 3 Appendix R Field Development plan Volume 3 Appendix T Concept rehabilitation plan
Geology and soils	Erosion and Sediment Control Plan	Volume 3 Appendix S Concept erosion and sediment control plan
Water resources	Stormwater Management Plan (Substations, Temp construction laydown areas and accommodation camps)	Volume 3 Appendix Q Framework environmental management plan
Air	Dust Management Plan	Volume 3 Appendix Q Framework environmental management plan
Noise and Vibration	Noise and Vibration Management Plan	Volume 3 Appendix Q Framework environmental management plan
Greenhouse Gas	Greenhouse Gas Management Plan	Volume 3 Appendix V Greenhouse Gas assessment
Flora and fauna	Weed Management Plan Pest Management Plan Rehabilitation Plan Flora and Fauna Connectivity Strategy Environmental Offsets Plan Species specific management Plan	Volume 3 Appendix U Concept biosecurity plan Volume 3 Appendix T Concept rehabilitation plan Volume 3 Appendix P Ecological Assessment Volume 2 Chapter 21 Environmental offsets
Waste	Waste Management Plan	Volume 3 Appendix Q Framework

Environmental Aspect	Management Plan	EIS Reference
		environmental management plan
Heritage	Cultural Heritage Management Plan	Volume 2 Chapter 15 Cultural heritage
Hazard and Risk	Risk Management Plan	Volume 2 Chapter 17 Hazards, Health and Safety
Traffic	Road Use Management Plan Traffic Management Plan	Volume 3 Appendix X Transport impact assessment
Social	Social Impact Management Plan Stakeholder Engagement Plan Outrage Management Plan	Volume 3 Appendix Z Social impact assessment



19.4 Conclusion

This chapter provides an outline of the environmental management procedures that have been developed to implement management procedures for the potential environmental impacts associated with the life of the project.

A Project Framework Environmental Management Plan (FEMP) and the Field Development Plan (FDP) have been developed for the design, site planning, construction, maintenance and the operation of the Project. The plans sets out the overarching components of the project and serves as a guide for further development of management procedures, and has been prepared to ensure that environmental harm and pollution is minimised through the active identification and management of environmental risks throughout the project.

The FEMP and FDP considers impacts to environmental values and includes detailed management plans including mitigation measures, objectives, performance criteria as well as monitoring and corrective actions. Further to this, the EMP (Construction) and EMP (Operation) will set out a detailed procedure for managing environmental impacts during the construction and the operation of the project respectively. Where permit or approval requirements are identified, a site-based management plan will be developed to accompany the respective permit and will be updated to incorporate any relevant conditions of that approval.