Terms of reference for an environmental impact statement

CopperString Project

September 2019

COORDINATOR-GENERAL

Queensland Government

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Part A. About these terms of reference

1. Introduction

1.1 This document outlines the terms of reference (TOR) for the CopperString Project (the project) proposed by CuString Pty Ltd and being assessed under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

1.2 The project is a 1,100 kilometre (km) high voltage overhead electricity transmission line with support towers and associated substations, from a new substation at Woodstock, south of Townsville, to the Chumvale Substation, near Cloncurry. Subject to demand, the project may extend west to Mount Isa, with optional spur lines south and north to mines and renewable energy facilities. The project would require a 120 metre (m) wide easement containing high voltage electricity lines and transmission towers.

1.3 The project includes several connection options for power users and generators. These include a direct connection via an 80 km spur northwards to existing and planned renewable energy facilities, including wind and solar farms, at the Kennedy Energy Park (Kennedy Corridor Section), and an alternative eastern connection point to the broader electricity network, offering co-location and connection opportunities for Townsville City Council's proposed Lansdown Industrial Precinct (Lansdown Corridor Section).

1.4 The project also has optical fibre network capability, providing the ability to accommodate telecommunications cabling for enhanced mobile phone and internet services.

2. Statutory basis

2.1 The Coordinator-General has declared the CopperString Project to be a 'coordinated project for which an environmental impact statement (EIS) is required' under section 26(1)(a) of the SDPWO Act. This declaration initiates the statutory environmental impact assessment procedure of Part 4 of the SDPWO Act, which requires a proponent to prepare an EIS for the project.

2.2 The TOR set out the matters the proponent is to address in an EIS for the project and are approved by the Coordinator-General under section 30 of the SDPWO Act.

3. Accredited process for controlled actions under Commonwealth legislation

3.1 On 14 May 2019, the Commonwealth Minister for the Environment determined the project is a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Cwlth), due to the likely potential impacts on matters of national environmental significance (MNES) (reference number EPBC 2019/8416).

3.2 The EIS process has been accredited under the Bilateral Agreement between the Commonwealth and the State of Queensland under section 45 of the EPBC Act relating to Environmental Assessment (Bilateral Agreement), hence the EIS is to state the controlling provisions for the project and describe the particular aspects of the environment that led to the controlled action decision.

3.3 The assessment of the controlling provisions, mitigation measures and any offsets for residual impacts are to be described and illustrated in a stand-alone report in the EIS that fully addresses the matters relevant to the controlling provisions. Requirements for MNES are set out in section 12 of the TOR.

4. EIS guidelines

4.1 This TOR is to be read in conjunction with *Preparing an environmental impact statement*: *Guideline for proponents* (refer Appendix 1), which explains the following:

(a) participants in the EIS process

(b) consultation requirements

(c) EIS format and copy requirements.

4.2 In addition, the most recent version of policies and guidelines contained in Appendix 1 are to be complied with, where relevant.

5. More information

5.1 For information about the project or the EIS process under the SDPWO Act, visit **www.dsdmip.qld.gov.au/coordinator-general**

Part B. General approach and requirements

6. General approach

6.1 The objectives of the EIS are to:

(a) provide a detailed description of the project

(b) ensure that all relevant environmental, social, cultural and economic impacts of the project are identified and assessed

(c) outline the effective management, monitoring, planning and other mitigation measures proposed to avoid, minimise and/or mitigate adverse impacts

(d) demonstrate that the project is based on sound environmental principles and practices.

6.2 For the purposes of the EIS process, 'environment' is defined in Schedule 2 of the SDPWO Act and includes social, cultural and economic matters.

6.3 The detail at which the EIS deals with matters relevant to the project is to be proportional to the scale of the impacts on environmental values. When determining the scale of an impact, consider its intensity, duration, nature, magnitude, cumulative impact, irreversibility, the risk of environmental harm, management strategies and offsets provisions.

6.4 The EIS is to be prepared in accordance with relevant current policies, standards and guidelines. The applicability of such guidelines, standards and policies will be confirmed throughout the development of the EIS in consultation with the Coordinator-General, the proponent and advisory agencies.

7. Mandatory requirements of an EIS

7.1 Detail the methodology used to determine the project area, within the 5 km wide study corridor. Whilst the project's Initial Advice Statement identified a 5 km wide study corridor, the EIS must confirm the project area, comprising:

(a) 120 m wide selected project corridor (including location of high voltage lines and transmission towers)

(b) extent of associated infrastructure and works (including substations, workforce accommodation camps, construction laydown areas and access tracks).

7.2 For all the relevant matters, the EIS is to identify and describe the environmental values that must be protected. Environmental values are specified in section 9 of the *Environmental Protection Act 1994* (EP Act), the Environmental Protection Regulation 2019 (EP Regulation), environmental protection policies (EPPs) and relevant guidelines. Values under other State legislation, policies and guidelines and project specific matters are described in section 12 of the TOR.

7.3 The assessment is to cover both short and long-term impacts and state whether any relevant impacts are likely to be irreversible. The assessment is to also discuss scenarios of unknown and unpredictable impacts.

7.4 Provide all available baseline information relevant to the environmental risks of the project. Include detail about the quality of the information provided, in particular: the source of the information; how recent the information is; how the reliability of the information was tested; and any uncertainties in the information. All data, modelling and input/output information used in the EIS to determine the existing environment and/or assess impacts must be made available to the Office of the Coordinator-General upon request and in an appropriate electronic format (e.g. shapefiles).

7.5 Provide detailed strategies addressing all matters, as described in section 12 of the TOR, for the protection, or enhancement, of all relevant environmental values in terms of outcomes and possible conditions that can be measured and audited. The preferred hierarchy for managing likely impacts is:

(a) to avoid

(b) to minimise/mitigate using best practice environmental management

(c) once (a) and (b) have been applied then, if necessary and possible, offset.

7.6 Impact minimisation measures are to include ongoing monitoring and proposals for an adaptive management approach, as relevant, based on monitoring. The proposed measures are to give confidence that, based on current technologies, the impacts can be effectively minimised and/or mitigated over time.

7.7 Each matter assessed in the EIS, as described in section 12 of the TOR, must include a concise summary of the potential impacts of the project and the measures proposed to avoid, minimise, mitigate and/or offset those impacts.

7.8 Present feasible alternatives of the project's configuration and alignment, including individual elements such as associated infrastructure and access routes, that may improve environmental outcomes by avoiding adverse impacts. Describe, using desktop analysis, the comparative environmental, social and economic impacts of each alternative and why the preferred corridor was selected, and the methodology used to determine the corridor.

7.9 Discuss the consequences of not proceeding with the project and how the intended outcomes are consistent with current state policies and guidelines. If there is conflict, demonstrate the merit that supports the project instead of complying with current relevant policies and guidelines.

8. Further requirements of an EIS

8.1 Identify in the EIS the scope of all government approvals sought through the EIS process. The assessment and supporting information are to be sufficient for the administering authority and the Minister, as the case may be, to decide whether an approval is to be granted. Sufficient information is to be included to enable relevant approval conditions to be decided.

8.2 To the extent of available information, the EIS is to endeavour to predict the cumulative impact[1] of the project on environmental values over time and in combination with impacts created by the activities of other adjacent and upstream/downstream developments and landholders—as detected by baseline monitoring. This will inform the decision on the EIS and the setting of conditions.

8.3 Include a consolidated description of all proponent commitments to implement management measures (including monitoring programs) to minimise and mitigate project impacts.

8.4 Include a table listing the section of the EIS where each requirement of the TOR is addressed.

8.5 Provide all geographical coordinates throughout the EIS in latitude and longitude against the Geocentric Datum of Australia 1994 (GDA94) (or updated datasets as they become available). Identify the boundaries of the project area with reference to real property descriptions and land tenures.

8.6 The EIS is to describe the expected project benefits and opportunities (e.g. impacts to energy prices, the energy infrastructure network, renewable energy facilities, industry, communities and telecommunications services). Statements about expected project benefits and opportunities must be supported by empirical evidence.

8.7 An effective stakeholder engagement program is essential to support the environmental impact assessment process. The proponent is to consult with relevant local, state and Commonwealth government agencies, affected local and regional communities, and landowners.

8.8 The EIS is to describe the stakeholder engagement activities that have occurred and how the responses from the community and agencies have been incorporated into the design and outcomes of the project.

8.9 Include, as an appendix, a stakeholder engagement report detailing how the stakeholder engagement program was implemented, and the results.

Part C. EIS content and suggested structure

9. Executive summary

9.1 The executive summary is to describe the project and convey the most important aspects and environmental management options in a concise form. It is to use plain English, avoid jargon, be written as a stand-alone document, and structured to align with the EIS.

10. Introduction

10.1 The introduction is to clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. It should also include an overview of the structure of the document.

[1] Cumulative impact is defined as 'combined impacts from all relevant sources (developments and other activities in the area)'.

Project proponent

10.2 Describe the following:

(a) the proponent's full name, postal address and Australian Business Number, if relevant (including details of any joint venture partners)

(b) the nature and extent of business activities

(c) proponent's experience

(d) proponent's (including directors) environmental record in Australia, including a list of any breach of relevant environmental laws during the previous ten years

(e) proponent's environmental, health, safety and community policies

(f) experience and qualifications of consultants and sub-consultants engaged by the proponent to complete the EIS.

The environmental impact assessment process

10.3 Provide an outline of the environmental impact assessment process, including the role of the EIS in the Coordinator-General's decision-making process. The information in this section is required to ensure readers are informed of the process to be followed and are aware of any opportunities for input and participation.

10.4 Inform the reader how and when properly made public submissions on the EIS will be addressed and considered in the assessment processes under the SDPWO Act, *Planning Act 2016* and any other relevant legislation.

Project approvals process

10.5 Describe the approvals requiring an EIS or statement of environmental effects, which would be considered as part of this EIS process, and those required to enable the project to be constructed and operated. Explain how the EIS process (and the EIS itself) informs the issue of licences/permits/consents required for the project.

10.6 Describe the assessment process under the Bilateral Agreement between the Commonwealth and the State of Queensland under section 45 of the EPBC Act relating to Environmental Assessment (Bilateral Agreement).

10.7 The State Development Assessment Provisions (SDAP), prescribed under the Planning Regulation 2017 (Planning Regulation), set out the matters of interest to the state for development assessment. The EIS must satisfy the relevant information requirements and provide an assessment against the relevant SDAP state codes as if the EIS were a development application triggering assessment, under the Planning Regulation, against the SDAP. Further information on SDAP requirements can be accessed from: **https://planning.dsdmip.qld.gov.au/planning/better-development/the-development-assessment-process/the-states-role/state-development-assessment-provisions.**

10.8 Consider the provisions of the *Regional Planning Interests Act 2014*; *Electricity Act 1994*; relevant Regional Plan(s); and State Planning Policy and guidelines relative to the project and address as required. Where the aforementioned legislation, plans, policies and guidelines do not apply, the EIS must provide evidence as to why they do not apply.

10.9 The EIS is to provide, where relevant, the information required under section 125 of the EP Act in support of the project's environmentally relevant activities (ERA). Any ERA to be conducted as part of the project is to be listed separately with the appropriate ERA number, activity name and required threshold (see EP Regulation, Schedule 2 for a list of ERAs). The assessment and supporting information are to be sufficient for the administering authority to decide whether an approval should be granted. Environmental values and approval requirements are specified in the EP Act, the EP Regulation, EPP and relevant guidelines.

10.10 Identify the planning scheme areas traversed by the project, and the material changes of use, operational works assessment benchmarks for all activities associated with this project under each of those schemes during pre-construction, construction and operation of the project.

11. Project description

Proposed development

11.1 The EIS must describe and illustrate the following about the project:

(a) project title
(b) project description
(c) project objectives
(d) expected capital expenditure
(e) rationale for the project
(f) the regional and local infrastructure context of the project's footprint (with maps at suitable scales)
(g) relationship to other major projects and/or development (of which the proponent should reasonably be aware)
(h) the workforce numbers to be employed by the project during its various phases
(i) where personnel would be accommodated during construction and operation of the project
(j) proposed construction staging and likely schedule of works including details of early works.

Site description

11.2 Provide details of proposed tenure arrangements for all properties impacted by the project. Provide all property descriptions for land impacted by the project area, and adjacent properties. Include details of any easements, roads (existing and/or proposed, public and/or private), leases, permits to occupy, conservation tenures, approved state and/or biodiversity offset strategies, approved indigenous land use agreements, Native Title claims under consideration and decided.

11.3 Describe and map all transport corridors, private roads, local and state-controlled roads, private and government owned corporation energy infrastructure, rail, air services[2], maritime and other infrastructure or services impacted by the project, including its construction activities.

11.4 Describe and illustrate the topography of the project area and surrounds on maps and highlight any significant features. Include and name rivers and creeks. Maps should include a scale, and

[2] As defined in the State Development Assessment Provisions

have contours at suitable increments, relevant to the scale, location, potential impacts and type of project, shown with respect to Australian Height Datum (AHD) and drafted to GDA94 (or updated datum sets).

11.5 Describe and illustrate specific information about the project including the precise location of the project area and construction activities in relation to protected areas such as conservation parks, national parks and matters of national and state environmental significance.

11.6 Describe and map in plan and cross-sections the geology and landforms, including catchments, of the project area and surrounds. Show geological structures, such as aquifers, faults and economic resources (such as agricultural and mining projects) that could have an influence on, or be influenced by, the project and its construction activities.

11.7 Describe, map and illustrate soil types and profiles of the project area including added fill and/or exposed ground surface at appropriate scales. Identify soils that would require specific management due to wetness, erosivity, depth, acidity, salinity or other features.

11.8 Describe the planning schemes, regional plans, state policies and government priorities for the project area. Plans, drawings and maps must be of sufficient detail for the approvals being sought and to enable the Coordinator-General and advisory agencies to assess the impacts of the project.

Climate

11.9 Describe the climate patterns that are relevant to the environmental assessment, with particular regard to discharges to water and air and the propagation of noise. Climate information is to be presented in a statistical form including long-term averages and extreme values, as necessary.

Proposed construction and operations

11.10 Describe the following about the project:

(a) all pre-construction activities including the staging and sequencing (e.g. vegetation clearing, project area and construction access, interference with watercourses, waterways and floodplain areas including wetlands)

(b) existing infrastructure and easements on affected land, project area and surrounds

(c) the proposed earthworks, construction methods, associated equipment and techniques

(d) location, design and capacity of water supply, telecommunications and road infrastructure

(e) hours of operation for proposed construction works, including night time works

(f) nature and location of workforce accommodation and construction laydown areas

(g) the sequencing and staging of activities

(h) the capacity of high-impact plant and equipment, their chemical and physical processes, chemicals or hazardous materials to be used

(i) the known locations of new or altered works and structures and infrastructure necessary to enable the construction and operation of the development

(j) any activity that is a prescribed ERA

(k) location of quarry operations the project may source materials from

(l) the range of land uses and site layout

(m) the source of materials for the project, their nature and mode of delivery

(n) where the transmission towers and substations will be constructed and how they will be transported to the site, including details of any necessary road upgrades

(o) the height and width of the transmission towers and lines, and the depth of footings

(p) transmission towers, line and associated infrastructure commissioning process

(q) required maintenance schedule including access tracks

(r) landscaping and the rehabilitation works for affected areas post construction

(s) site restoration actions, closure and decommissioning works for removal of substations, equipment, transmission towers and cabling.

Infrastructure requirements

11.11 This section should detail, with concept and layout plans, requirements for new infrastructure, or the upgrading, retention, relocation and/or decommissioning of existing infrastructure to service the project. Infrastructure to be considered is to include, but is not limited to, access roads and tracks, transport infrastructure and utility crossings, water supply, energy supply, telecommunications, and waste disposal.

11.12 Describe the timing of requirements for this infrastructure (starting with construction of the project) and detail the decommissioning schedule for all project-related infrastructure.

11.13 Concept and layout plans should include existing infrastructure within and adjacent to the project area.

11.14 The names of the required infrastructure service providers, together with evidence as to whether discussions have been held with these providers, regarding the capacity of existing infrastructure to accommodate/or not accommodate project requirements.

12. Assessment of project specific matters

Land

Objectives

Development should be designed and operated to:

(a) minimise impacts on the environment and improve environmental outcomes

(b) protect the environmental values of land including soils, subsoils, landforms and associated flora and fauna

(c) contribute to community wellbeing

(d) contribute to strong and balanced social, economic, cultural and environmental sustainability.

Existing environment

12.1 Confirm the location of the project area including a description of:

(a) existing and proposed land uses, in and around the project area, including numbers of private properties and State land impacted by the project

(b) identify townships and urban areas located near the project

(c) any tenures, including conservation and national parks, stock routes, overlying and adjacent to the project, and any to be applied for as part of this project

(d) identify all planning schemes which will affect the project

(e) regional plans and the provisions of the planning schemes assessment benchmarks relating to material changes of use and operational works which apply to the project

(f) state interests identified in the State Planning Policy 2017 (SPP) affecting the project alignment

(g) SDAP state codes relevant to the project

(h) design factors influencing the selection of the project area

(i) if regional planning interests have been identified, state whether an application has been made pursuant to the *Regional Planning Interests Act 2014* and the decision on that application, or, when an application will be made.

12.2 Describe and map the extent of any known mining and exploration activities or quarries of commercial significance, including, but not limited to:

(a) petroleum pipeline infrastructure

(b) registered exploration permits and applications for exploration permits

(c) mineral development licences and applications for mineral development licences

(d) mining leases and applications for mining leases, including access arrangements

(e) known economic resources and their future availability

(f) active, disused, or abandoned workings within the project area and surrounds.

Address impacts on these activities, including any consultation undertaken with tenement holders, with respect to accessing land, impact assessment and mitigation measures.

Impact assessment and mitigation measures

12.3 Identify any regional planning interests (e.g. priority agricultural areas and strategic environmental areas) impacted by the project, and the source of mapping to identify those interests. Where mapping is not available, identify the methodology followed to prepare the mapping and its scale.

12.4 Identify any historical workings within or adjacent to the project area. Demonstrate how historical workings have been avoided where possible. Describe how the project will incorporate safety measures to mitigate hazards with abandoned mines and ensure the safety of personnel.

12.5 Detail any known or potential sources of contaminated land. Describe how any proposed land use may result in land becoming contaminated. Describe the actions to be undertaken to avoid, identify, remediate, manage land that is contaminated or becomes contaminated.

12.6 Identify existing and potential Native Title rights and interests impacted by the project and the potential for managing those impacts by Indigenous Land Use Agreements or other measures.

12.7 Describe the proposed land acquisition approach that will be undertaken to secure tenure for the project.

12.8 Identify any infrastructure or access tracks associated with the project to be located within, or which may have impacts on, the stock route network managed under the *Stock Route Management Act 2002*. This includes any reserves which form part of the network (i.e., for water, camping purposes). Demonstrate how the project will maintain the ongoing functionality and connectivity of the stock route network.

12.9 Describe the visual impact of the project on communities, particularly those living in townships and urban areas. Describe the proposed mitigation measures that would be used to avoid or minimise impacts.

12.10 Discuss the project's construction stages, timing and the location of construction laydown areas and workforce accommodation camps. Assess construction impacts and how they will be avoided and/or mitigated.

Topography, geology and soils

12.11 Where significant earthworks are proposed, provide an assessment of impacts to topography, geology and soils in accordance with the Soil Science Guidelines of Australia, Queensland Branch (2015), in conjunction with the DES *Information guideline for an environment impact statement – Land* and the CSIRO guidelines – *Guidelines for surveying soil and land resources* and *Australian soil and land survey field handbook* (see Appendix 1).

12.12 Discuss the project's impacts on Important Agricultural Areas as per the SPP – *State interest guideline – Agriculture* with reference to Agricultural Land Use Categories under the Queensland Agricultural Land Audit methodology (see Appendix 1) and the Queensland Land Use Mapping Program.

12.13 Identify and investigate areas of salinity, sodic, dispersive and cracking clay soils, and potential and actual areas of acid sulfate soils. Where potential areas are identified, further investigations (including field surveys) should be undertaken in accordance with accepted industry guidelines and the requirements of the *SPP – State interest guideline emissions and hazardous activities*.

12.14 Provide details, including maps, of the locations of the project works/infrastructure with respect to soil conservation works (contour banks, waterway discharge points etc) and existing erosion control works.

12.15 Identify activities or operations likely to impact on existing erosion control works and any soil conservation plans, in particular, those approved as project plans or property plans approved under the provisions of the *Soil Conservation Act 1986.*

12.16 Identify measures to avoid or mitigate project impacts to soil values, existing conservation works and erosion control works.

Flora and fauna

Objective

Matters of state environmental significance are identified and appropriately safeguarded to support healthy and resilient ecosystems and ensure the sustainable, long-term conservation of biodiversity and the social, economic, cultural and environmental benefits it provides.

Existing environment

12.17 Identify and describe matters of state environmental significance (MSES), State and regionally significant biodiversity and natural environmental values of the terrestrial and aquatic ecology likely to be impacted by the project. Where MSES have been addressed in the section on MNES, cross referencing may be appropriate.

Impact assessment

12.18 Using maps at suitable scales, illustrate the context of the project area in relation to surrounding MSES. This includes the location of:

(a) existing infrastructure

(b) proposed infrastructure (including transmission line, substations and associated infrastructure)

(c) proposed buffers (including firebreak and safety buffers), and

(d) access tracks (including existing) required for construction and maintenance

(e) any areas of disturbance required for the establishment of temporary non-resident workforce accommodation and construction laydown areas.

12.19 The location of fauna and flora of cultural, state and national environmental significance on the site and in surrounding areas, should be shown on maps in relation to their habitat and connectivity in the landscape. Include maps showing areas of:

(a) current regulated vegetation maps showing regional ecosystems, essential habitat, wetlands, watercourse and drainage features (over the project and adjoining areas)

(b) protected habitat

(c) wetlands of high ecological significance.

12.20 Describe the likely direct and indirect impacts on the biodiversity and natural environmental values of affected areas arising from the construction and operation of the project. Consider any proposed avoidance and/or mitigation measures. The assessment is to include, but not be limited to, the following key elements:

(a) MSES and MNES

(b) fauna and flora of cultural significance to Aboriginal and Torres Strait Islander Peoples

(c) terrestrial and aquatic ecosystems (including groundwater-dependent ecosystems) and their interaction

(d) confirm the height of the tallest vegetation adjacent to project infrastructure

(e) waterways providing for fish passage

(f) the existing integrity of ecological processes, including habitats of threatened, near-threatened or special least-concern species

(g) actions of the project that require an authority under the *Nature Conservation Act 1992* (NC Act) and *Water Act 2000* (e.g. riverine protection permit), assessable development under the *Planning Act 2016*, *Vegetation Management Act 1999* and *Fisheries Act 1994*, and an authority and/or permit under the *Environment Protection Act 1994*

(h) provide an assessment against SDAP state code 16: Native vegetation clearing, addressing the relevant assessment benchmarks for a coordinated project for all other purposes.

(i) biological diversity including listed flora and fauna species and regional ecosystems

(j) strategic environmental areas identified in the regional planning interests framework

(k) conservation, national park tenures, biodiversity offset areas approved by the state or commonwealth governments

(l) chronic, low-level exposure to contaminants or the bio-accumulation of contaminants

(m) impacts on native fauna during construction and operation of the project due to their proximity to the project area (e.g. lighting, noise, waste, transmission lines).

12.21 Identify and discuss those areas where the proposed clearing of vegetation is exempt or considered accepted development for the project under the Planning Regulation, including but not limited to:

- Schedule 21, Part 1, Section 1(1)
- Schedule 21, Part 1, Section 1 (10)(a)
- Schedule 21 Part 1, Section 1 (10)(b).

Mitigation measures

12.22 Propose practical measures for protecting or enhancing natural values and assess how the nominated quantitative indicators and standards may be achieved for nature conservation management. In particular, address measures to protect or preserve any threatened or near-threatened species.

12.23 Describe strategies for protecting Ramsar wetlands and discuss any obligations imposed by state or Commonwealth legislation and/or polices, or international treaties.

12.24 Assess the need for fire breaks, safety buffer zones and the retention, rehabilitation or construction of fauna movement corridors. Propose measures that would avoid the need for waterway barriers or propose measures to mitigate the impacts of their construction and operation.

12.25 Demonstrate that the project will avoid waterways, drainage features and wetlands. Propose measures to mitigate impacts on these values. Include mitigation strategies for construction, operation and maintenance stages of the project.

12.26 Describe how the achievement of the objectives is to be monitored and audited, and how corrective actions are to be managed.

12.27 Identify whether the project will result in a significant residual impact on MSES, requiring an offset with reference to the Queensland Environmental Offsets Policy and Significant Residual Impact Guideline 2014 (see Appendix 1) and the Queensland Environmental Offsets framework.

12.28 Propose rehabilitation criteria and objectives that would be used to measure progressive rehabilitation of disturbed areas. Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed. Proposals for rehabilitation of disturbed areas should incorporate suitable terrestrial habitat.

Biosecurity

Objectives

The construction and operation of the project should aim to ensure:

(a) the spread of weeds, pest animals and animal diseases are minimised

(b) existing weeds, pest animals and animal diseases are controlled

(c) comply with relevant provisions of the *Biosecurity Act 2014*, Commonwealth animal and pest strategies, biosecurity plans, Weeds of National Significance and designated pests under the *Public Health Act 2005.*

Existing environment

12.29 Provide information on the current distribution and abundance of pest animals and weeds in the project area and surrounds.

12.30 Surveys of pest animals and weeds are to be undertaken in those areas identified during the desktop assessment as containing listed flora, fauna and ecological communities of national or state environmental significance (MNES or MSES defined by the EPBC Act and NC Acts respectively).

Impact assessment

12.31 Describe the project's construction and operational impacts on the spread of pest animals, weed species and disease along the project area construction access routes and into adjoining properties.

Mitigation measures

12.32 Propose detailed measures to control and limit the spread of pests, weeds and diseases surrounding the project area and adjacent areas. Detail any relevant local government area Biosecurity Plans. This includes restricted matters listed in the *Biosecurity Act 2014* and Biosecurity Regulation 2016, Weeds of National Significance, designated pests under the *Public Health Act 2005*.

12.33 All proposed measures are to be in accordance with any relevant biosecurity surveillance or prevention measures authorised under the *Biosecurity Act 2014* and any requirements under the VM Act/*Planning Act 2016*.

Water quality

Objective

Development is planned, designed, constructed and operated to protect environmental values of Queensland waters and supports the achievement of water quality objectives.

Impact assessment and mitigation measures

12.34 Describe the impacts of the project on water quality and the water quality objectives that are to be managed. Information is to be supported with references to relevant legislation, policies and guidelines. Describe avoidance and mitigation strategies and contingency plans for:

(a) potential accidental discharges of contaminants and sediments during construction and operation

(b) stormwater run-off from the construction of the pylons and power lines, substations and ancillary infrastructure

(c) erosion and sedimentation

(d) flooding of relevant river systems, the effects of tropical cyclones and other extreme events

(e) management of acid sulfate soils

(f) impacts to other properties and the environment during flood events.

12.35 Detail the proposed management and mitigation strategies for erosion and sedimentation control with reference to the International Erosion Control Association's *Best Practice Erosion and Sediment Control* and the former Department of Environment and Resource Management's *Urban Stormwater Quality Planning Guidelines 2010* (see Appendix 1).

12.36 Describe the treatment and disposal processes for all wastewater produced as a result of the project, including construction activities.

Water resources

Objectives

The construction and operation of the project should aim to meet the following objectives:

(a) equitable, sustainable and efficient use of water resources and riverine quarry material

(b) environmental flows, water quality, in-stream habitat diversity, and naturally occurring inputs from riparian zones support the long-term maintenance of the ecology of aquatic biotic communities

(c) the condition and natural functions of waterways, watercourses, lakes, springs, aquifers and other natural water systems and watercourses are maintained—including the stability of beds and banks of waterways and watercourses

(d) waterway barrier works in fish habitats are constructed to maintain connectivity, habitat values and fish passage

(e) volumes and quality of water resources are maintained and current lawful users of water (such as entitlement holders and stock and domestic users) and other beneficial uses of water (such as spring flows and groundwater-dependent ecosystems) are not adversely impacted by the development.

Impact assessment and mitigation measures

12.37 Provide an overview of water-related environmental values, including existing surface water and groundwater that may be impacted by the project.

12.38 Detail any significant diversion or interception of overland flow. Include maps of suitable scale showing the location of diversions and other water-related infrastructure.

12.39 Identify and describe any water features requiring modification (i.e. extraction or placement of fill material) during construction to allow machinery and/or vehicular access, or permanently for the installation of infrastructure. Diagrams, locations and volumes of material to be disturbed and features to be modified should be specified and illustrated. Identify any riverine material proposed to be used for construction purposes.

12.40 Detail those locations where waterway barrier works are required that will be undertaken in accordance with Fisheries Queensland's *Accepted development requirements for operational work that is constructing or raising waterway barrier works* (see Appendix 1).

12.41 Provide an assessment against SDAP state code 18: Constructing or raising waterway barrier works in fish habitats (see Appendix 1) for any assessable waterway barrier works required for the project, including construction activities.

12.42 Provide information on the project's water usage, including details about the source, quality and quantity of all water required for the project and its construction activities.

12.43 Describe proposed sources of water and any approvals required under the *Water Act 2000*.

12.44 Determination of potable water demand must be made for the project, particularly the temporary demands during the construction period. Include details of any existing town water supply to meet such requirements. Detail should also be provided to describe any proposed on-site water storage and treatment for use by the site workforce during construction phase.

12.45 Provide detailed designs for all infrastructure utilised in the treatment of onsite water including how any onsite water supplies are to be treated, contaminated water is to be disposed of and any decommissioning requirements and timing of temporary water supply/treatment infrastructure is to occur.

Air

Objective

Development is planned, designed, constructed and operated to protect the environmental values of air.

Impact assessment and mitigation measures

12.46 Describe the existing air quality that may be affected by the project in the context of environmental values.

12.47 Describe the characteristics of contaminants or materials that may be released from the construction or operation of the project, including point source and fugitive emissions. Emissions (point source and fugitive) during construction, commissioning, operations and upset conditions should be described.

12.48 The relevant air quality goals and objectives that will be adopted for the assessment should be clearly outlined as a basis of the assessment of impacts on air.

12.49 Describe the proposed mitigation measures and how the proposed activity will be consistent with best practice environmental management. Where a government plan is relevant to the activity or site where the activity is proposed, describe the activity's consistency with that plan.

12.50 Describe how the achievement of the objectives would be monitored, audited and reported, and how corrective actions would be managed.

12.51 Provide a Greenhouse Gas Management Plan and Carbon Dioxide (CO2) abatement plan and an inventory of project annual emissions for the life of the project for each relevant greenhouse gas, with total emissions expressed in 'CO2 equivalent' terms for the following categories as per the National Greenhouse and Energy Reporting scheme:

(a) scope 1 emissions – means direct emissions of greenhouse gases from sources within the boundary of the facility and as a result of the facility's activities (including emission from vegetation clearing)

(b) scope 2 emissions – means emissions of greenhouse gases from the production of electricity, heat or steam that the facility will consume, but that are physically produced by another facility.

Noise and vibration

Objective

Development is planned, designed, constructed and operated to protect the environmental values of the acoustic environment.

Impact assessment and mitigation measures

12.52 Describe the existing noise and vibration sources along the project area and construction access tracks (e.g. agricultural machinery, traffic and other noise sources which are accepted as part of the existing environment).

12.53 Describe the characteristics of the noise and vibration sources that would be emitted by the project (point source and general emissions). Describe noise and vibration emissions (including fugitive sources) that would be emitted during construction, commissioning, and operation.

12.54 Identify and map all existing sensitive receptors likely to be adversely affected by the project, including its construction activities, due to noise and/or vibration impacts.

12.55 Describe how the project, and in particular, the key project components described in 12.53, would be managed to be consistent with best practice environmental management for the activity (see Appendix 1).

12.56 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed.

Waste management

Objective

Any waste transported, generated, or received as part of carrying out the activity is managed in a way that protects all environmental values.

Ensure upgrades to waste infrastructure are funded by the proponent.

Impact assessment and mitigation measures

12.57 For wastes other than wastewater, describe all expected significant waste streams generated by project activities including construction, operational, rehabilitation and decommissioning phases.

12.58 Assess the proposed management measures against the preferred waste management hierarchy, namely: avoid waste generation; cleaner production; recycle; reuse; reprocess and reclaim; waste to energy; treatment; disposal. This includes the generation and storage of waste.

12.59 Detail waste management planning for the project especially how these plans would be applied to prevent or minimise environmental impacts from waste for each phase of the project. Waste management planning will include detail of all identified waste types, waste volumes and proposed locations for waste disposal.

Transport

Objectives

The construction and operation of the project is to address transport infrastructure requirements in respect of:

(a) maintenance of the safety and efficiency of all affected transport modes for the project workforce and other transport system users

(b) avoidance and/or mitigation of impacts to the condition and operation of existing and planned transport infrastructure

(c) impact mitigation works are compatible with transport infrastructure planning.

Impact assessment

12.60 The EIS is to include a description of the existing transport network including detailed maps showing:

(a) construction laydown areas and workers accommodation camps

(b) locations where the project area crosses or is located in proximity (i.e. within 100 m) to existing and planned:

i. road and rail reserves

ii. road and rail infrastructure.

12.61 The EIS is to include a summary of the total transport task for the project, including workforce and inputs/outputs during construction and operational phases.

12.62 Identify any project site access points to/from public roads that must be designed in accordance with relevant local and/or state policies, standards and manuals.

12.63 Present the transport assessment in separate sections for each project-affected mode (road, rail, air services and maritime) as appropriate for each phase of the project.

12.64 Provide sufficient information to allow an independent assessment of how the existing and future safety, condition and performance of transport infrastructure will be impacted by the project's construction and operational phases (e.g. local and state-controlled roads, rail, air services).

12.65 Include details of the adopted assessment methodology for impacts on roads within the road impact assessment report in accordance with the Queensland Department of Transport and Main Roads (DTMR) *Guide to Traffic Impact Assessment December 2018* and the relevant eight local government impact assessment methodologies for local government roads impacted by the project.

12.66 Demonstrate any necessary transport impact mitigation works will not compromise future transport corridor planning with reference to the latest version of DTMR's Queensland Transport and Roads Investment Program.

Mitigation measures

12.67 Demonstrate how project impacts will be mitigated. Mitigation strategies are to be prepared in consultation with relevant transport authorities (e.g. local governments, DTMR, Civil Aviation Safety Authority, Maritime Safety Queensland).

Social

Objectives

The construction and operation of the project should aim to:

(a) avoid or mitigate adverse social impacts arising from the project

(b) enhance benefits for local and regional communities.

Information requirements

12.68 Prepare a social impact assessment (SIA) for the project that is consistent with the requirements of the Coordinator-General's SIA Guideline (March 2018) (Appendix 1).

12.69 The SIA is to be developed in consultation with the Coordinated Project Delivery Division in the Office of the Coordinator-General, Department of State Development, Manufacturing, Infrastructure and Planning.

12.70 The SIA is to describe the potential social impacts (both positive and negative) of the project.

12.71 The SIA is required to include detailed assessment of the following key matters in accordance with the SIA guideline.

(a) community and stakeholder engagement

(b) workforce management

(c) housing and accommodation

(d) local business and industry procurement

(e) health and community well-being.

Community and stakeholder engagement

12.72 The SIA is to be informed by an inclusive and collaborative community and stakeholder engagement process. Community and stakeholder engagement is to be iterative throughout the SIA process and engagement with local government should commence at an early stage.

12.73 The SIA is to demonstrate evidence of engagement outcomes from local government, state agencies, local and regional employment and training providers, public and private housing providers, local and regional commerce and community development groups, social and public services providers (e.g.. Queensland Health and Queensland Emergency Services), and local communities. The SIA must be informed by the results from community and stakeholder engagement.

Key social impact assessment outcomes

12.74 The SIA must include a social impact management plan (SIMP) with solutions to mitigate the impacts identified in the detailed assessment of the five key matters listed above and enhance social benefits in accordance with the SIA guideline.

12.75 The SIMP will describe solutions (outcomes, tangible initiatives), a practical basis for the implementation of management measures identified through the SIA process. The SIMP is to include timeframes for implementation of solutions, key performance indicators, roles and responsibilities, stakeholders and potential partnerships. The SIMP must include a process of review throughout the project lifecycle to ensure solutions continue to be effective and ineffective solutions are amended to appropriately mitigate impacts.

12.76 The SIA will need to include details as to the type and location of workforce accommodation, the numbers of the construction workforce, workforce scheduling and where peak construction number will occur, and the health and safety risks to workers arising from:

(a) working in remote and isolated locations and impacts of long commuting distances and access to accommodation, amenities, medical facilities

(b) fatigue and heat management

(c) the impact of electrical storms and lightning strikes while workers are working at height

(d) the use of aircraft during construction.

12.77 The SIA will need to identify the percentage of locally based workers for the construction and operational phases and the methodologies used for workforce recruitment. The SIA must provide for the recruitment of workers for the project in the following priority:

(a) workers from local and regional communities

(b) workers who will live in regional communities.

Cultural heritage

Objective

The construction and operation of the project should aim to ensure that the nature and scale of the project does not compromise the cultural heritage significance of a heritage place or heritage area.

12.78 Unless section 86 of the *Aboriginal Cultural Heritage Act 2003* (ACH Act) applies, the proponent must develop a Cultural Heritage Management Plan in accordance with the requirements of Part 7 of the ACH Act.

Impact assessment and mitigation measures

12.79 For non-Indigenous historical heritage identified under the *Queensland Heritage Act 1992*, undertake a study of, and describe, the known and potential historical cultural and landscape heritage values of the area potentially affected by the project. Any such study should be conducted by an appropriately qualified cultural heritage practitioner.

12.80 Provide strategies to mitigate and manage all impact on indigenous and non-Indigenous cultural heritage values and have in place a strategy to address unexpected archaeological discoveries in accordance with the relevant part of the non-Indigenous cultural heritage guideline in Appendix 1.

Economic

Objectives

The construction and operation of the project should aim to:

(a) avoid or mitigate adverse economic impacts arising from the project

(b) capitalise on opportunities potentially available for capable local businesses and communities

(c) create a net economic benefit to the region and State.

Information requirements

12.81 Consistent with the Coordinator-General's *Economic impact assessment guideline* (April 2017) (refer Appendix 1), identify the size and nature of economic effects of the project on the local and regional area using both regional impact analysis (RIA) and cost-benefit analysis (CBA). The analysis should:

(a) describe the local and regional economies likely to be impacted by the project and identify the relevant stakeholders, including:

i. map(s) illustrating the local and regional economies (local government areas) that could be potentially impacted by the project

ii. population of relevant local government areas

iii. relevant economic indicators (e.g. electricity and telecommunication prices)

iv. the regional economy's key industries and their contribution to regional economic income

v. existing infrastructure in the region and any plans for connection to the project.

(b) quantify the direct and indirect economic impacts on local, regional and state economies arising from each stage of the project, and estimate the changes in key indicators including:

i. gross regional project

ii. gross state product

iii. employment outcomes

iv. electricity and telecommunication prices for domestic users, small businesses and large industries

v. value added to the economy by the project by sector or industry.

(c) The CBA framework should also identify the structure of the project and the relevant direct costs and benefits (from the project), including:

i. key construction milestones and inputs

ii. a project timeline

iii. relevant renewal and rehabilitation costs related to the project (including projected repair/replacement of infrastructure)

iv. operational costs, including all input costs of production

v. benefits, including revenue projections (and stipulating unit/price assumptions)

vi. the cost to all levels of government of any additional infrastructure

vii. expected project life and any residual value over the assessment period.

(d) In addition, the CBA framework should incorporate alternative courses of action by identifying all direct private; indirect; and external social costs and benefits.

(e) These would include:

i. external net benefits (such as third parties who are providing inputs (power, gas, renewable energy and telecommunication infrastructure, etc) to the project

ii. external net costs (to third parties, community, local and State Government) as a direct result of the project.

iii. comparisons all direct, indirect and external costs and benefits and valuing those direct, indirect and external costs and benefits in monetary terms.

iv. all beneficiaries (e.g. proponents, community, local and State Government) of the project should be clearly described and incorporated in the expanded CBA framework. If there are specific issues related to electricity and telecommunications demand and prices to the community, these should be identified as external costs and benefits.

(f) In instances, where these costs and benefits could not be valued in monetary terms and are 'intangibles', these items should be described and presented separately.

(g) the RIA should address matters including, but not limited to:

i. any existing plans for integration with local governments and industries

ii. labour demand, including the ability for labour (including specialists) to be drawn from the existing local and state workforce, and the potential effects this may have on local businesses

iii. raw input demand, including the ability for existing local and state suppliers to provide relevant raw and manufactured inputs (e.g. towers, substations, wiring)

iv. the significance and anticipated economic impacts of the project in the local and regional economic context (with reference to the various project components and stages)

v. the significance and anticipated economic impacts of the project in terms of local, regional and state industries, including direct and indirect benefits (e.g. improved level of service and lower costs for domestic and industrial consumers), direct and indirect employment from the project, and key sectors and industries impacted by the project; both positively and negatively

vi. anticipated impacts the project will have on domestic and industrial energy prices, wages, economic growth, renewable energy projects, existing gas supplied energy providers, housing market costs, input costs and/or household goods and services

vii. any significant economic benefits and costs arising from all stages of the project

viii. project benefits and costs, along with relevant positive and negative externalities, should be valued and described using quantitative and qualitative information. The results of this assessment should be presented as the net present values.

Hazards, health and safety

Objectives

The construction and operation of the project should aim to ensure:

(a) the risk of, and the adverse impacts from, natural and human-made natural hazards are identified, avoided, minimised or managed and mitigated to protect people and property

(b) the community's resilience to natural hazards is enhanced

(c) developments are appropriately located, designed and constructed to minimise health and safety risks to communities and individuals and adverse effects on the environment.

Impact assessment

General

12.82 Describe the potential risks to people and property that may be associated with the project in the form of a preliminary risk assessment for all components of the project and in accordance with relevant standards. The assessment should include:

(a) potential hazards, accidents, spillages, fire and abnormal events that may occur during all stages of the project, including estimated probabilities of occurrence

(b) identifying all hazardous substances to be used, stored, processed or produced and the rate of usage

(c) potential hazards posed by wildlife interactions, natural events (for example, cyclone, flooding, bushfire) and implications related to climate change. Identify the cumulative impact of a number of natural hazards occurring at the one time

(d) how the project may potentially affect hazards away from the project area (for example, changing flooding characteristics).

12.83 Outline measures required to ensure that the project avoids the release of hazardous materials as a result of a natural hazard event(s).

12.84 Provide details on the safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons, within and adjacent to the project area(s). Identify the residual risk following application of mitigation measures. Present an assessment of the overall acceptability of the impacts of the project in light of the residual uncertainties and risk profile.

12.85 Provide an outline of the specific measures to be adopted to manage bushfire risk from adjacent land and any specific bushfire hazard mitigation strategies.

12.86 Provide an outline of the proposed integrated emergency management planning procedures (including evacuation plans, if required) for the range of situations identified in the risk assessment developed in this section.

12.87 Outline any consultation undertaken with the relevant state, district and local emergency management authorities, including the Local Disaster Management Group.

Flooding

12.88 Describe flood risk for a range of annual exceedance probabilities (including Probable Maximum Flood), water height and velocity for the site, and assess how the project may change flooding characteristics. Include a discussion of historical events.

12.89 The assessment should consider all infrastructure associated with the project including levees, roads and linear infrastructure and all proposed measures to avoid or minimise risks to life, property, community (including damage to other properties) and the environment during flood events. Mitigation measures must include flood immunity requirements.

Electromagnetic field

12.90 Provide a prudent avoidance assessment addressing the project's electromagnetic field (EMF) impacts. The prudent avoidance assessment should be prepared with reference to the EMF Management Handbook (January 2016) (see Appendix 1).

Matters of national environmental significance

12.91 On 14 May 2019, the Commonwealth Minister for the Environment determined the project (EPBC 2019/8416) is a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Cwlth), due to the likely potential impacts on:

(a) listed threatened species and communities (sections 18 and 18A); and

(b) listed migratory species (sections 20 and 20A).

12.92 The assessment of the impact on the above controlling provisions, avoidance and mitigation measures and environmental offsets for residual significant impacts (if required) are to be described and illustrated in a stand-alone MNES chapter in the EIS. All information relevant to the assessment of the above controlling provisions must be included in the MNES chapter and reference to other chapters in the EIS or appendices must be kept to a minimum. The requirements for MNES chapter are set out below.

Background and context

12.93 This section is to provide a stand-alone description and detailed assessment of the impacts of the project on the controlling provisions for the project under the EPBC Act inclusive of any avoidance, mitigation and offset measures.

12.94 The EIS is to be prepared pursuant to the Bilateral Agreement. This will enable the EIS to meet the impact assessment requirements under both Commonwealth and Queensland legislation. The project will require approval from the responsible Commonwealth minister under Part 9 of the EPBC Act before it can proceed.

12.95 Once the EIS has been prepared to the satisfaction of the Coordinator-General and MNES addressed to the satisfaction of the Australian Government Department of the Environment and Energy, the EIS will be made available for public comment.

12.96 The proponent may be required by the Coordinator-General or the Department of the Environment and Energy to provide additional material to address matters raised in submissions on the EIS.

12.97 At the conclusion of the environmental assessment process, the Coordinator-General will provide a copy of the report to the Commonwealth Minister for the Environment, in accordance with Part 13, section 36(2) of the *State Development and Public Works Organisation Regulation 2010* (Qld).

12.98 After receiving the evaluation report and sufficient information about the relevant impacts of the action, the Commonwealth Minister for the Environment has 30 business days to consider whether the impacts of the proposal are acceptable, or not, and to decide whether or not to approve each controlling provision.

12.99 The Commonwealth Minister's decision is separate to the approval decisions made by Queensland state agencies and other agencies with jurisdiction on state matters.

12.100 In accordance with Section 3.1 of Schedule 1 of the Bilateral Agreement, the EIS must:

(a) assess all relevant impacts that the action has, will have or is likely to have;

(b) provide enough information about the action and its relevant impacts to allow the Commonwealth Minister for the Environment to make an informed decision whether or not to approve the action under Part 9 of the EPBC Act; and

(c) address the matters set out in Division 5.2 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cwlth) (EPBC Regulations).

12.101 A cross-reference to the relevant sections in the MNES chapter that addresses each of the matters mentioned in Division 5.2 of the EPBC Regulations should be provided.

12.102 Consideration is to be given to any relevant information, advice, policy statements and guidelines (available at **www.environment.gov.au**) including but not limited to:

(a) Significant impact guidelines 1.1 – Matters of National Environmental Significance (see Appendix 1)

(b) EPBC Act

(c) EPBC Act Environmental Offsets Policy (see Appendix 1)

(d) listing advices, recovery plans, conservation advices, threat abatement plans, draft referral guidelines and referral guidelines.

(e) Species Profile and Threats (SPRAT) Database.

12.103 The project is to initially be assessed in its own right followed by an assessment of the cumulative impacts related to all known proposed developments in the region with respect to each controlling provision and all identified consequential actions. Cumulative impacts not solely related to the project development are to also be assessed.

12.104 Predictions of the extent of threat (risk), impact and the benefits of any avoidance, mitigation and management measures proposed, must be scientifically robust, supported by relevant suitably qualified experts and/or supported by technical data. Reference all sources of information relied upon and provide an estimate of the reliability of predictions.

12.105 Identify and evaluate any positive impacts on relevant MNES.

12.106 The extent of any new field work, modelling or testing is to be commensurate with risk and should be such that when used in conjunction with existing information, provides sufficient confidence in predictions that well-informed decisions can be made.

12.107 The following content requirements are based on these matters and considerations, with the addition of directions specific to the proposed action and the receiving environment.

Environmental history

12.108 The MNES chapter is to include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

(a) the person proposed to take the action

(b) for an action for which a person has applied for a permit, the person making the application.

12.109 If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework is to be included.

Social and economic considerations

12.110 The economic and social impacts of the action, both positive and negative, are to be analysed. Matters of interest may include:

(a) details of any public consultation activities undertaken, and their outcomes;

(b) details of any consultation with Indigenous stakeholders;

(c) projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies; and

(d) employment and other opportunities expected to be generated by the project (including construction and operational phases).

12.111 Economic and social impacts should be considered at the local, regional and national levels. Details of the relevant cost and benefits of alternative options to the proposed action must also be included.

Assessment requirements

Project description and alternatives

12.112 The MNES chapter is to provide the background to the action and describe in detail all aspects of the action, including but not limited to, the construction, operational and (if relevant) decommissioning aspects, including:

(a) the precise location of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of each aspect that may have impacts on MNES; and

(b) details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those parts of the structures or elements that may have relevant impacts on MNES.

12.113 The EIS is to provide details on the current state of the proposed action as well as the consequences of not proceeding with the action.

12.114 Project alternatives must be discussed in accordance with Schedule 4, section 2.01(g) of the EPBC Regulations, including:

(a) if relevant, the alternative of taking no action;

(b) a comparative description of the impacts of each alternative on the triggered MNES protected by controlling provisions of Part 3 of the EPBC Act for the action; and

(c) sufficient detail to make clear why any alternative or option is preferred to another.

The short, medium and long-term advantages and disadvantages of the alternatives must be discussed.

Listed threatened species and communities (sections 18 and 18A)

List of potential listed threatened species

12.115 The MNES chapter must provide habitat descriptions and address impacts on the following listed threatened species:

(a) Curlew Sandpiper (*Calidris ferruginea*)

(b) Eastern Curlew (*Numenius madagascariensis*)

(c) Carpentarian Grasswren (*Amytomis dorotheae*)

(d) Gouldian Finch (*Erythrura gouldiae*)

(e) Star Finch (eastern) (*Neochmia ruficauda ruficauda*)

(f) Night Parrot (*Pezoporus occidentalis*)

(g) Southern Black-throatetd Finch (*Poephila cincta cincta*)

(h) Australian Painted-snipe (*Rostratula Australia*)

(i) Northern Quoll (*Dasyurus hallucatus*)
(j) Gulf Snapping Turtle (*Elseya lavarackorum*)
(k) Red Goshawk (*Erythrotriorchis radiatus*)
(l) Squatter Pigeon (southern) (*Geophaps scripta scripta*)
(m) Painted Honeyeater (*Grantiella picta*)
(n) Masked Owl (northern) (*Tyto novaehollandiae Kimberli*)
(o) Murray Cod (Maccullochella peelii)
(p) Semon's Leaf-nosed Bat (*Hipposideros semoni)*
(q) Ghost Bat (*Macroderma gigas*)
(r) Greater Bilby (*Macrotis lagotis*)
(s) Greater Glider (*Petauroides volans*)
(t) Koala (*Phascolarctos cinereus*)(combined populations of Qld, NSW and the ACT)
(u) Spectacled Flying-fox (*Pteropus conspicillatus*)
(v) Large-eared Horseshoe Bat (*Rhinolophus robertsi*)
(w) Bare-rumped Sheath-tailed Bat (*Saccolaimus saccolaimus nudicluniatus*)
(x) Julia Creek Dunnart (*Sminthopsis douglasi*)
(y) Pink Gidgee (*Acacia crombiei*)
(z) Miniature Moss-orchid (*Bulbophyllum globuliforme*)
(aa) Bluegrass (*Dichanthium setosum*)
(bb) King Blue-grass (*Dicanthium queenslandicum*)
(cc) Mt Stuart Ironbark (*Eucalyptus paedoglauca*)
(dd) Black Ironbox (*Eucalyptus raveretiana*)
(ee) *Marsdenia brevifolia*
(ff) *Omphalea celata*
(gg) Plains Death Adder (*Acanthophis hawkei*)
(hh) Ornamental Snake (*Denisonia maculata*)
(ii) Yakka Skink (*Egernia rugosa*)
(jj) Mount Cooper Striped Skink (*Lerista vittata*)
(kk) Freshwater Sawfish (*Pristis pristis*).

List of potential listed threatened communities

12.116 The MNES chapter must provide habitat descriptions and address impacts on the following listed threatened communities:

(a) the community of native species dependent on natural discharge of groundwater from the Great Artesian Basin
(b) Brigalow (*Acacia harpophylla* dominant and co-dominant)
(c) Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin
(d) Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions.

Habitat assessment

12.117 Describe the listed threatened species and ecological communities identified above (including EPBC Act listing status, distribution, life history and habitat).

12.118 Provide details of the scope, methodology, timing and effort of surveys (which must be undertaken by relevant qualified species experts) for the project (including areas outside of the project site which may be impacted by the project); and include details of:

(a) the application of best practice survey guidelines; and

(b) how studies or surveys are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements.

12.119 The MNES chapter must include records identified from field surveys of the above listed threatened species and ecological communities within and/or adjacent to the project site. The records must include a description of the habitat in which the record was identified.

12.120 The MNES chapter must include known historical records of the above listed threatened species and ecological communities in the broader region. All known records must include the source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.

12.121 The MNES chapter must include a detailed habitat assessment for each of the listed threatened species and ecological communities identified above within the project area. The habitat assessment must:

(a) consider habitat use requirements (e.g. denning, foraging, breeding, nesting, dispersal, etc.);

(b) be informed by desktop analysis and field surveys;

(c) consider relevant Departmental documents (e.g. approved conservation advices, recovery plans, draft referral guidelines and listing advices), the SPRAT Database; and

(d) be support by relevant published research (if required)

(e) not rely solely on the application of Queensland Regional Ecosystems and/or ‘remnant’ and ‘non-remnant’ vegetation classifications.

12.122 The MNES chapter must include the area (in hectares) of all suitable habitats. The MNES chapter must also include an assessment of the quality of all suitable habitats in accordance with a Departmental, State or local government habitat quality assessment

12.123 Detailed mapping of suitable habitat for the above listed threatened species and ecological communities must be included in the MNES chapter, and must:

(a) be specific to the habitat assessment undertaken for each listed threatened species and ecological community (Note: provision of Queensland Regional Ecosystems alone is not adequate);

(b) include an overlay of the disturbance footprint;

(c) include known records of individuals from desktop analysis and/or field surveys; and

(d) be provided separately as attachments in a JPEG format.

Impact assessment

12.124 Describe and assess the impacts (direct, indirect, facilitated and consequential) to the listed threatened species and ecological communities and their habitat, and any others that are found

to be or may potentially be present in areas that may be impacted by any of the stages of the project.

12.125 The MNES chapter must identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities (including known potential future projects by the proponent and/or other proponents in the region and vicinity).

12.126 The impacts must be assessed in accordance with relevant Department policies and guidelines, and information provided in the SPRAT Database. Any technical data and other information used or needed to make a detailed assessment of the relevant impacts must be included as appendices to the EIS.

Avoidance, mitigation and management measures

12.127 The MNES chapter must include detailed descriptions of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of all stages of the project on listed threatened species and communities. The proposed measures should be based on best available practices, appropriate standards and supported by scientific evidence. The MNES chapter must include:

(a) proposed measures to be undertaken to avoid and mitigate the relevant impacts of the proposed action on listed threatened species and communities, including those required by other Commonwealth, State and local government approvals;

(b) an assessment of the predicted effectiveness of the proposed measures;

(c) any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advices, and a discussion on whether the proposed measures are not inconsistent with relevant recovery plans and threat abatement plans;

(d) details of ongoing management, including monitoring programs to support an adaptive management approach and determine the effectiveness of the proposed measures;

(e) details on measures, if any, proposed to be undertaken by State and local government, including the name of the agency responsible for approving each measure; and

(f) information on the timing, frequency and duration of the measures to be implemented.

12.128 All proposed measures should consider the 'S.M.A.R.T' principle:

(a) S – Specific (what and how)

(b) M – Measurable (baseline information, number/value, auditable)

(c) A – Achievable (timeframe, money, personnel)

(d) R – Relevant (conservation advices, recovery plans, threat abatement plans, scientific evidence)

(e) T – Time-bound (specific timeframe to complete).

12.129 An outline of an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing, may be included as an appendix to the EIS. The draft EMP must be prepared by a suitably qualified person and in accordance with the Department's Environmental Management Plan Guidelines (2014), available at: **www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines**.

Listed migratory species (sections 20 and 20A)

List of potential migratory species

12.130 The MNES chapter must provide habitat descriptions and address impacts on the following listed migratory species:

(a) Fork-tailed Swift (*Apus pacificus*)
(b) Estuarine Crocodile (*Crocodylus porosus*)
(c) Freshwater Sawfish (*Pristis pristis*)
(d) Oriental Cuckoo (*Cuculus optatus*)
(e) White-throated Needletail (*Hirundapus caudacutus*)
(f) Black-faced Monarch (*Monarcha melanopsis*)
(g) Spectacled Monarch (*Monarcha trivirgatus*)
(h) Grey Wagtail (*Motacilla cinerea*)
(i) Yellow Wagtail (*Motacilla flava*)
(j) Satin Flycatcher (*Myiagra cyanoleuca*)
(k) Rufous Fantail (*Rhipidura rufifrons*)
(l) Common Sandpiper (*Actitis hypoleucos*)
(m) Sharp-tailed Sandpiper (*Calidris acuminata*)
(n) Curlew Sandpiper (*Calidris ferruginea*)
(o) Pectoral Sandpiper (*Calidris melanotos*)
(p) Oriental Plover (*Charadrius veredus*)
(q) Latham's Snipe (*Gallinago hardwickii*)
(r) Oriental Pratincole (*Glareola maldivarum*)
(s) Eastern Curlew (*Numenius madagascariensis*)
(t) Osprey (*Pandion haliaetus*)
(u) Common Greenshank (*Tringa nebularia*).

Habitat assessment

12.131 Describe the listed migratory species identified above (including distribution, life history and habitat).

12.132 Provide details of the scope, methodology, timing and effort of surveys (which must be undertaken by relevant qualified species experts) for the project (including areas outside of the project site which may be impacted by the project); and include details of:

(a) the application of best practice survey guidelines; and
(b) how studies or surveys are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements.

12.133 The MNES chapter must include records identified from field surveys of the above listed migratory species within and/or adjacent to the project area. The records must include a description of the habitat in which the record was identified.

12.134 The MNES chapter must include known historical records of the above listed migratory species in the broader region. All known records must include the source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.

12.135 The MNES chapter must include a detailed habitat assessment for each of the listed migratory species identified above within the project area. The habitat assessment must:

(a) consider habitat use requirements (e.g. foraging, breeding, nesting, dispersal, etc.);

(b) be informed by desktop analysis and field surveys;

(c) consider relevant Departmental documents and the SPRAT Database; and

(d) be support by relevant published research (if required)

(e) not rely solely on the application of Queensland Regional Ecosystems and/or 'remnant' and 'non-remnant' vegetation classifications.

12.136 The MNES chapter must provide known historical records of the above listed migratory species in the broader region. All known records must include the source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.

12.137 The MNES chapter must include the area (in hectares) of all suitable habitats. The MNES chapter must also include an assessment of the quality of all suitable habitats in accordance with a Departmental, State or local government habitat quality assessment methodology. This assessment, including justification for using the chosen methodology and all justifications to determine the habitat quality, must be included in an appendix to the EIS.

12.138 Detailed mapping of suitable habitat for the above listed migratory species must be included in the MNES chapter, and must:

(a) be specific to the habitat assessment undertaken for each listed migratory species (Note: provision of Queensland Regional Ecosystems alone is not adequate);

(b) include an overlay of the disturbance footprint;

(c) include known records of individuals from desktop analysis and/or field surveys; and

(d) be provided separately as attachments in a JPEG format.

Impact assessment

12.139 Describe and assess the impacts (direct, indirect, facilitated and consequential) on the listed migratory species, and their habitat, and any others that are found to be or may potentially be present in areas that may be impacted by any of the stages of the project.

12.140 The MNES chapter must identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities (including known potential future projects by the proponent and other proponents in the region and vicinity).

12.141 The impacts must be assessed in accordance with relevant Department policies and guidelines, and information provided in the SPRAT Database. Any technical data and other information used or needed to make a detailed assessment of the relevant impacts must be included as appendices to the EIS.

12.142 Where relevant, demonstrate the project is not inconsistent with Australia's obligations under:

(a) Convention on the Conservation of Migratory Species of Wild Animals (the Bonn Convention);

(b) China-Australia Migratory Bird Agreement (CAMBA);

(c) Japan-Australia Migratory Bird Agreement (JAMBA); and

(d) an international agreement entered into under subsection 209(4) of the EPBC Act.

12.143 Where relevant, consider the requirements of the Department's *Draft referral guideline for 14 birds listed as migratory under the EPBC Act* (2015), available at: **www.environment.gov.au/biodiversity/threatened/publications/epbc-act-referral-guidelines-migratory-birds**.

Avoidance, mitigation and management measures

12.144 The MNES chapter must include detailed descriptions of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of all stages of the project on listed migratory species. The proposed measures should be based on best available practices, appropriate standards and supported by scientific evidence. The MNES chapter must include:

(a) proposed measures to be undertaken to avoid and mitigate the relevant impacts of the proposed action on listed migratory species, including those required by other Commonwealth, State and local government approvals;

(b) an assessment of the predicted effectiveness of the proposed measures;

(c) any statutory or policy basis for the proposed measures, including reference to the SPRAT Database;

(d) details of ongoing management, including monitoring programs to support an adaptive management approach and determine the effectiveness of the proposed measures;

(e) details on measures, if any, proposed to be undertaken by State and local government, including the name of the agency responsible for approving each measure; and

(f) information on the timing, frequency and duration of the measures to be implemented.

12.145 All proposed measures should consider the 'S.M.A.R.T' principle:

(a) S – Specific (what and how)

(b) M – Measurable (baseline information, number/value, auditable)

(c) A – Achievable (timeframe, money, personnel)

(d) R – Relevant (scientific evidence)

(e) T – Time-bound (specific timeframe to complete).

12.146 An outline of an EMP that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing, may be included as an appendix to the EIS.

12.147 The draft EMP must be prepared by a suitably qualified person and in accordance with the Department's *Environmental Management Plan Guidelines* (2014).

Offsets

12.148 The MNES chapter must include an assessment of the likelihood of residual significant impacts occurring on listed threatened species and communities, and listed migratory species after avoidance, mitigation and management measures relating to the project have been applied. If it is determined that a residual significant impact is likely, include a draft Offset Management Strategy (as an appendix to the EIS) that provides, at a minimum:

(a) details of the environmental offset/s (in hectares) for residual significant impacts of the proposed action on relevant MNES, and/or their habitat;

(b) details of how the environmental offset/s meets the requirements of the Department's *EPBC Act Environmental Offsets Policy* (2012) (EPBC Act Offset Policy), including the

Offsets Assessments Guide, available at: **www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy**;

(c) details of a strategy for the staging of environmental offset/s for each project stage (if proposed);

(d) details of appropriate offset area/s (including a map) to compensate for the residual significant impact on relevant MNES, and/or their habitat;

(e) information about the proposed offset area/s provides connectivity with other relevant habitats and biodiversity corridors which meet the ecological requirements of the protected matter; and

(f) details of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide protection for the offset area/s against development incompatible with conservation.

12.149 If available, include a draft Offsets Management Plan which also provides (where possible):

(a) a field validation survey and baseline description of the current condition (prior to any management activities) of the offset area/s, including existing vegetation, for relevant MNES, and/or their habitat;

(b) details, including justifications, of the assessment of the quality of all suitable habitats proposed as offsets in accordance with Departmental, State or local government habitat quality assessment methodology (Note: the chosen habitat quality assessment methodology must be the same as that used for the impact site);

(c) a description and map (including shapefiles) to clearly define the location and boundaries of the proposed offset area/s, accompanied by the offset attributes (e.g. physical address of the offset area/s, coordinates of the boundary points in decimal degrees, the MNES that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares);

(d) a description of the management measures (including timing, frequency and duration) that will be implemented in the offset area/s;

(e) a discussion of how proposed management measures take into account relevant approved conservation advices and are consistent with the measures contained in relevant recovery plans and threat abatement plans;

(f) stage completion criteria and performance targets for evaluating the effectiveness of the Offset Management Plan implementation, and criteria for triggering corrective actions;

(g) a program to monitor, report on and review the effectiveness of the Offset Management Plan;

(h) a description of potential risks to the successful implementation of the environmental offset/s, and contingency measures that would be implemented to mitigate against these risks; and

(i) details of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the offset area/s against development incompatible with conservation.

12.150 The draft Offset Management Plan must be prepared by a suitably qualified person and in accordance with the Department's *Environmental Management Plan Guidelines* (2014), available at: **www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines**.

Other approvals and conditions

12.151 The MNES chapter must include information on any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action. This must include:

(a) details of any local or State Government planning scheme, or plan or policy under any local or State Government planning system that deals with the proposed action, including:

i. what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy; and

ii. how the scheme provides for the prevention, minimisation and management of any relevant impacts;

(b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the EPBC Act), including any conditions that apply to the action;

(c) a statement identifying any additional approval that is required; and

(d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

Conclusion

12.152 The MNES chapter is to include an overall conclusion for the action as to the environmental acceptability of the project on each relevant matter protected by the EPBC Act, including:

(a) a discussion on the consideration of the requirements of the EPBC Act, including the objects of the EPBC Act, the principles of ecologically sustainable development and the precautionary principle;

(b) reasons justifying undertaking the proposed action in the manner proposed, including the acceptability of the avoidance and mitigation measures; and

(c) if relevant, a discussion of residual significant impacts and any offsets and compensatory measures proposed or required for residual significant impacts on relevant matters protected by the EPBC Act, and the relative degree of compensation and acceptability.

13. Appendices to the EIS

13.1 Appendices are to provide the complete technical evidence used to develop assumptions, statements and findings in the main text of the EIS.

13.2 No significant issue or matter is to be mentioned for the first time in an appendix—it is to be addressed in the main text of the EIS.

13.3 Include a table listing the section of the EIS where each requirement of the TOR is addressed.

13.4 Include a glossary of terms and a list of acronyms and abbreviations.

Part D. Acronyms and abbreviations

The following acronyms and abbreviations have been used in this document.

Acronym/abbreviation	Definition
ACH Act	*Aboriginal Cultural Heritage Act 2003*
AHD	Australian Height Datum
EIS	environmental impact statement
EMF	electromagnetic field
EP Act	*Environmental Protection Act 1994*
EP Regulation	Environmental Protection Regulation 2019
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
EPP	Environmental Protection Policy (under the EP Act)
GDA94	Geocentric Datum of Australia 1994
km	kilometre(s)
MNES	matters of national environmental significance (under the EPBC Act)
MSES	matters of state environmental significance
MSQ	Maritime Safety Queensland
RPI Act	*Regional Planning Interests Act 2014*
SDAP	State Development Assessment Provisions
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SIA	social impact assessment
SPP	State Planning Policy 2017
TOR	terms of reference
VM Act	*Vegetation Management Act 1999*

Appendix 1. Policies and guidelines

General

Queensland Government, *Preparing an environmental impact statement: Guideline for proponents*, 2015, The Coordinator-General, Department of State Development, Manufacturing, Infrastructure and Planning, viewed 3 June 2019, **http://www.dsdmip.qld.gov.au/fact-sheets-and-guidelines/coordinated-projects.html**

Queensland Government, *Information guideline for an environmental impact statement* – Policies and guidelines, 2016, Department of Environment and Science, viewed 3 June 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Queensland Government, *DAFF Environmental Impact Assessment Companion Guide*, Department of Agriculture, Fisheries and Forestry, Brisbane, 2014, viewed 3 June 2019, **https://publications.qld.gov.au/dataset/daff-environmental-impact-assessment-companion-guide**

Queensland Government, *State Development Assessment Provisions,* Department of State Development, Manufacturing, Infrastructure and Planning, Brisbane, 2019*,* viewed 3 June 2019, **https://dsdmipprd.blob.core.windows.net/general/sdap-version-2.5.pdf**

Land

Queensland Government, *Application requirements for activities with impacts to land*, Department of Environment and Science, 2017, viewed 3 June 2019, **https://environment.des.qld.gov.au/assets/documents/regulation/era-gl-land-impacts.pdf**

Queensland Government, *Information guideline for an environmental impact statement – Land; Contaminated land; Rehabilitation; Quarry Material*, 2016, Department of Environment and Science, viewed 3 June 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Queensland Government, *State Planning Policy*, April 2016, Department of State Development, Manufacturing, Infrastructure, and Planning, Brisbane, 2018, viewed 3 June 2019, **https://planning.dsdmip.qld.gov.au/planning/better-planning/state-planning/state-planning-policy-spp**

Australian Government, *Acid Sulfate Soil National guidance materials*, Water Quality Australia, viewed 3 June 2019, **http://www.waterquality.gov.au/issues/acid-sulfate-soils**

Queensland Government, Managing acid sulfate soil including best-practice guidelines to find out more about managing acid sulfate soils in Queensland, Department of Environment and Science, viewed 3 June 2019, **https://www.qld.gov.au/environment/land/management/soil/acid-sulfate/management**

Queensland Government, State Development Assessment Provisions v.2.4, Department of State Development Manufacturing Infrastructure and Planning, viewed 3 June 2019, **https://dsdmipprd.blob.core.windows.net/general/sdap-v2-4.pdf**

Queensland Government, *Queensland Agricultural Land Audit,* Department of Agriculture and Fisheries, 2017, viewed August 2019, **https://www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/agribusiness/agricultural-land-audit/land-audit**

Queensland Government, *Information guideline for an environmental impact statement – Land*, Department of Environment and Science, viewed August 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

CSIRO – Victoria - McKenzie, N.J., Grundy, M.J. & Ringrose-Voase, A.J., eds., (2008), *Guidelines for surveying soil and land resources*, CSIRO, Collingwood, Vic.

CSIRO – Victoria - NCST, 2009, *Australian soil and land survey field handbook National Committee on Soil and Terrain,* CSIRO, Collingwood, Vic.

Flora and fauna

Queensland Government, *Queensland Environmental Offsets Policy (Version 1.1),* Department of Environment and Science, Brisbane, 2014, viewed 3 June 2019, **https://environment.des.qld.gov.au/assets/documents/pollution/management/offsets/offsets-policyv1-6.pdf**

Queensland Government, Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, December 2014, **http://www.dlgrma.qld.gov.au/resources/guideline/planning/dsdip-significant-residual-impact-guideline.pdf**

Queensland Government, *Information guideline for an environmental impact statement – Flora and fauna; Matter of national environmental significance; Biosecurity*, 2016, Department of Environment and Science, viewed 3 June 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Queensland Government, *Terrestrial Vertebrate Fauna Survey Guidelines for Queensland Ecological Sciences*, Queensland Herbarium, Brisbane, June 2018 (V 3.0), viewed 3 June 2019, **https://www.qld.gov.au/__data/assets/pdf_file/0022/68224/fauna-survey-guidelines.pdf**

Queensland Government, *Terrestrial Vertebrate Fauna Survey Field Data Sheets Ecological Sciences*, Queensland Herbarium, Brisbane, June 2018, viewed 3 June 2019, **https://www.qld.gov.au/__data/assets/pdf_file/0030/68259/fauna-survey-datasheets.pdf**

Queensland Government, *Targeted species survey guidelines are available for selected threatened species*, Department of Environment and Science, viewed 3 June 2019, **https://www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey**

Queensland Government, *Flora Survey Guidelines - Protected Plants Nature Conservation Act 1992*, Department of Environment and Heritage Protection, Brisbane, NCS/2016/2534, Version 2.00, December 2016, viewed 3 June 2019, **https://environment.des.qld.gov.au/licences-permits/plants-animals/documents/gl-wl-pp-flora-survey.pdf**

Queensland Government, *Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities*, Department of Science, Information Technology and Innovation, Brisbane, Version 4.0, May 2017, viewed 3 June 2019 **https://publications.qld.gov.au/dataset/redd/resource/6dee78ab-c12c-4692-9842-b7257c2511e4**

Queensland Government*, Guide to determining terrestrial habitat quality A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy*, Department of Environment and Heritage Protection, Brisbane, Version 1.2 April 2017, viewed 3 June 2019 **https://environment.des.qld.gov.au/assets/documents/pollution/management/offsets/habitat-quality-assessment-guide.pdf**

Social and economic

Queensland Government, *Social impact assessment guideline* March 2018, The Coordinator-General, Department of State Development, Manufacturing, Infrastructure, and Planning, viewed 3 June 2019, **https://www.dsdmip.qld.gov.au/resources/cg/social-impact-assessment-guideline.pdf**

Queensland Government, *Economic impact assessment guideline* April 2017, The Coordinator-General, Department of State Development, Manufacturing, Infrastructure, and Planning, viewed 3 June 2019, **https://www.dsdmip.qld.gov.au/resources/guideline/cg/economic-impact-assessment-guideline.pdf**

Queensland Government, *Information guideline for an environmental impact statement – Indigenous cultural heritage; Non-Indigenous cultural heritage*, 2016, Department of Environment and Science, viewed 3 June 2019,

https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html

Air

Australian Government, *National Greenhouse and Energy Reporting Scheme Measurement: Technical Guidelines for the estimation of emissions by facilities in Australia,* Department of the Environment and Energy, October 2017*,* viewed 3 June 2019, **https://www.environment.gov.au/system/files/resources/0e76f367-dfad-451d-8f41-859acfad327a/files/ngers-technical-guidelines-2017-18.pdf**

Queensland Government, *Application requirements for activities with impacts to air*, Department of Environment and Science 2017, viewed 3 June 2019, **https://environment.des.qld.gov.au/assets/documents/regulation/era-gl-air-impacts.pdf**

Queensland Government, *Guideline Odour Impact Assessment from Developments*, Department of Environment and Heritage Protection, viewed 3 June 2019, **https://environment.des.qld.gov.au/licences-permits/business-industry/pdf/guide-odour-impact-assess-developments.pdf**

Queensland Government, *Information guideline for an environmental impact statement – Air; Climate*, 2016, Department of Environment and Science, viewed 3 June 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Noise and vibration

Australian Standard, *Guide to noise and vibration control on construction, demolition and maintenance sites 2010* (AS 2436-2010), version 2016.

Queensland Government, *Information guideline for an environmental impact statement – Noise and vibration,* 2016, Department of Environment and Science, viewed August 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html.**

Water

Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, *The Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian Water Association (Artarmon) and NZ Water and Wastes Association (Auckland), viewed 3 June 2019 **http://www.waterquality.gov.au/anz-guidelines/guideline-values/**

Commonwealth of Australia, *National Strategy for Ecologically Sustainable Development*, Ecologically Sustainable Development Steering Committee, Canberra, 1992, viewed 3 June 2019, **http://www.environment.gov.au/about-us/esd/publications/national-esd-strategy**

Commonwealth of Australia, *National Water Quality Management Strategy: Australian Drinking Water Guidelines*, National Health and Medical Research Council, 2011, updated November 2016, viewed 3 June 2019, **https://nhmrc.gov.au/about-us/publications/australian-drinking-water-guidelines**

Queensland Government, *Application requirements for activities with impacts to water*, Department of Environment and Science, 2017, viewed 3 June 2019, **https://environment.des.qld.gov.au/assets/documents/regulation/era-gl-water-impacts.pdf**

Queensland Government, *Guidelines for major development proposals*, Maritime Safety Queensland, Brisbane, 2013, viewed 3 June 2019, **http://www.msq.qld.gov.au/Waterways/Major-development-proposals.aspx**

Queensland Government, *Information guideline for an environmental impact statement – Water; Aquatic ecology; Coastal; Groundwater dependent ecosystems*, 2016, Department of Environment and Science, viewed 3 June 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Queensland Government, *Queensland Water Quality Guidelines*, Department of Environment and Science, Brisbane, 2018, viewed 3 June 2019, **https://environment.des.qld.gov.au/water/guidelines/**

Queensland Government*, Monitoring and Sampling Manual Environmental Protection (Water) Policy 2009*, Department of Environment and Science, Brisbane, 2018, viewed 3 June 2019, **https://environment.des.qld.gov.au/water/monitoring/sampling-manual/pdf/monitoring-sampling-manual-2018.pdf**

Queensland Government, *Using monitoring data to assess groundwater quality and potential environmental impacts*, Department of Science, Information Technology and Innovation, March 2017, viewed 3 June 2019, **https://publications.qld.gov.au/en/dataset/groundwater-quality-assessment-guideline**

Queensland Government, Guideline: *Works that interfere with water in a watercourse—watercourse diversions*, Department of Natural Resource and Mines, Brisbane, September 2014, viewed 3 June 2019, **https://www.dnrme.qld.gov.au/?a=109113:policy_registry/watercourse-diversions-water-act.pdf&ver=2.00**

Queensland Government, *Guide for the determination of waterways using the spatial data layer Queensland waterways for waterway barrier works*, January 2013, **https://www.daf.qld.gov.au/__data/assets/pdf_file/0007/75886/spatial-data-layer-user-guide-jan-13.pdf**

Queensland Government, Accepted development requirements for operational work that is constructing or raising waterway barrier works, October 2018, **https://www.daf.qld.gov.au/__data/assets/pdf_file/0007/1258396/daf-adr-waterway-barrier-works.pdf**

Queensland Government, Urban Stormwater Quality Planning Guidelines, December 2010, **http://www.onsiteisite.com/SiteFiles/whiteheadenvironmentalinfocomau/DERM_Urban_Stormwater_Quality_Planning_Guidelines_2010.pdf**

International Erosion Control Association, *Best Practice Erosion and Sediment Control,* November 2008.

Transport

Queensland Government, *Guide to Traffic Impact Assessment,* Brisbane, 2017, viewed 3 June 2019, **https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guide-to-Traffic-Impact-Assessment**

Queensland Government, *Information guideline for an environmental impact statement - Transport*, 2016, Department of Environment and Science, viewed 3 June 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Queensland Government, *Transport Noise Management Code of Practice Volume 1 – Road Traffic Noise*, Department of Transport and Main Roads, November 2013, viewed 3 June 2019, **https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Transport-noise-management-code-of-practice.aspx**

Queensland Government, *EIS information guideline – Transport,* Department of Environment and Science, **https://www.ehp.qld.gov.au/management/impact-assessment/eisprocesses/documents/generic-tor-supporting-guidelines/tor-guideline-transport.docx**

Hazards, health and safety

Energy Networks Association, *EMF Management Handbook*, January 2016, **https://www.energynetworks.com.au/sites/default/files/emf_handbook_2016_02_1.pdf**

Matters of national environmental significance

Australian Government, *Significant Impact Guidelines 1.1 – matters of national environmental significance*, 2013, Department of the Environment and Energy, viewed 3 June 2019, **http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance**

Australian Government, *EPBC Act environmental offsets policy*, 2012, Department of the Environment and Energy, viewed 3 June 2019, **http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy**

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