Draft terms of reference for an environmental impact statement

CopperString Project

July 2019

COORDINATOR-GENERAL

Queensland Government

The Department of State Development, Manufacturing, Infrastructure and Planning

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Part A. About these terms of reference

1. Introduction

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

1.2 The project is a 1,100 kilometre (km) 275 kilovolt overhead high voltage electricity transmission line with support towers and associated sub-stations, from a new sub-station at Woodstock, south of Townsville, to the Chumvale Sub-station, near Cloncurry. Subject to demand, the project may extend west to Mount Isa, with spur lines south and north to mines and renewable energy facilities. The final overhead voltage electricity transmission line would require a 120 metre wide easement.

1.3 The project includes connection options for power users, including 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, 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.

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 These 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 Part C.12 of this 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:

i. participants in the EIS process

ii. consultation requirements

iii. 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 conducted 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 provide a detailed description of the proposed project and to ensure that all relevant environmental, social, cultural and economic impacts of the project are identified and assessed, and to recommend mitigation measures to avoid or minimise adverse impacts. The EIS is to 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 policies, standards and guidelines at the time of the finalisation of the draft EIS Application 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 and results of a progressive reduction in the width of the study corridor from five kilometres to the proposed project footprint of 120 metres. While the project's Initial Advice Statement included a 5 km study corridor, the EIS is to confirm a reduced study corridor of no more than one km.

7.2 The alignment of the project is to be confirmed within the EIS.

7.3 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 2008 (EP Regulation), environmental protection policies (EPPs) and relevant guidelines. Values under other State legislation, policies and guidelines and project specific matters are described in Part C.12 of this TOR.

7.4 The assessment is to cover both the 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.

7.5 Provide all available baseline information relevant to the environmental risks of the project. Provide 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.

7.6 Provide detailed strategies regarding all matters (as described in Part C.12 of this TOR) for the protection, or enhancement (as desirable), of all relevant environmental values in terms of outcomes and possible conditions that can be measured and audited. In general, the preferred hierarchy for managing likely impacts is: (a) to avoid; (b) to minimise/mitigate; and (c) if necessary and possible, to offset.

7.7 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 over the long-term.

7.8 Each matter assessed in the EIS (as described in section 12 of this TOR) should include a concise summary of the potential impacts of the project and the measures proposed by the proponent to avoid, minimise, mitigate and/or offset those impacts.

7.9 Present feasible alternatives of the project's configuration (including individual elements) that may improve environmental outcomes. Discuss the consequences of not proceeding with the project. Assess the extent to which the construction and operation of the project meets all statutory and regulatory requirements of the Commonwealth and State and that the intended outcomes are consistent with current state policies and guidelines. If there is conflict, provide comment on the merit that supports the project instead of complying with current policies and guidelines.

8. Further requirements of an EIS

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

8.2 To the extent of the information available, the assessment 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 and downstream developments and landholders—as detected by baseline monitoring. This will inform the decision on the EIS and the setting of conditions. The absence of a comprehensive cumulative impacts' analysis

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

need not be fatal to the project. The EIS is to outline ways in which the cumulative impact assessment and management of those impacts could subsequently be progressed further on a collective basis.

8.3 Include a consolidated description of all the proponent's commitments to implement management measures (including monitoring programs). Should the project proceed, these are to be able to be carried over into the recommendations as relevant.

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 site with reference to real property descriptions or other relevant tenure.

8.6 The EIS is to also describe the expected benefits and opportunities associated with the project.

8.7 An appropriate public consultation program is essential to support the environmental impact assessment process. The proponent is to consult with local, state and Commonwealth government agencies, potentially affected local communities and potentially affected communities and landholders.

8.8 The EIS is to describe the consultation that has taken place 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 public consultation report detailing how the public consultation plan was implemented, and the results.

Part C. EIS contents and suggested structure

9. Executive summary

9.1 The executive summary is to describe the project and convey the most important and preferred aspects and environmental management options relating to the project in a concise and readable form. It is to use plain English, avoid jargon, be written as a stand-alone document and be structured to follow the EIS. It is to be easy to reproduce and distribute on request to those who may not wish to read or purchase the whole EIS.

10. Introduction

10.1 Clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. Include an overview of the structure of the document.

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 this 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 taken into account 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 environmental impact assessment process (and the EIS itself) informs the issue of the licences/permits/consents required by the proponent before construction can commence.

10.6 Identify the planning scheme areas which would be traversed by the project, and the material changes of use, operational works, codes and policy requirements for all activities associated with this project under each of those schemes during pre-construction, construction and operation of the project.

10.7 The State Development Assessment Provisions (SDAP) prescribed in the Planning Regulation 2017 set out the matters of interest to the state for development assessment where the chief executive of *Planning Act 2016* is the assessment manager for development applications. The EIS is to satisfy the information requirements of future assessment decisions as if it were an application under SDAP for any component of the project. 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.**

10.10 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.

10.11 Describe the provisions of the *Regional Planning Interests Act 2014* and Regulation (if the project area is affected by the provisions of this Act; the *Electricity Act 1994*; Regional Plans; and State Planning Policies and guidelines which apply to the project area. If the provisions do not apply, this should be stated in the EIS providing a reason as to why they do not apply.

11. Project description

Proposed development

11.1 The EIS must describe and illustrate at least the following specific information about the proposed 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 Identify the project study area land boundaries. Provide details on proposed tenure arrangements for properties impacted by the proposal. Provide information on the land descriptions for the project study area and adjacent properties; easements; roads (existing and/or proposed) tenures; leases; permits to occupy; conservation tenures; approved state and/or biodiversity offset strategies; approved indigenous land use agreements; native title claims under consideration; decided native title claims.

11.3 Describe and map key transport, all local government and state-controlled roads, private and government owned corporation energy, rail, air, port/sea and other infrastructure or services in the region and impacted by the project.

11.4 Describe and illustrate the topography of the project study area and surrounding areas on maps and highlight any significant features. Include and name rivers and creeks. Maps should include a scale and 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 proposed project including the precise location of the proposed development in relation to protected areas such as conservation parks, national parks, fish habitat areas 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 study area. 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's activities.

11.7 Where relevant, describe, map and illustrate soil types and profiles of the project study area including added fill and/or exposed ground surface of all parts of the project area at a scale relevant to the proposed project. 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, 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 adequately assess the impacts of the project.

Climate

11.9 Describe the site's 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 information about the project:

(a) all pre-construction activities including the staging and sequencing (e.g. vegetation clearing, site access through landholders properties, interference with watercourses and floodplain areas including wetlands)

(b) existing infrastructure and easements on the potentially affected land and project study area

(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) the sequencing and staging of activities

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

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

(i) any activity that is a prescribed ERA

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

(k) the range of land uses and site layout

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

(m) where the towers will be constructed and how they will be transported to the site

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

(o) the tower, line and associated infrastructure commissioning process

(p) closure and decommissioning stage works to be undertaken for removal of plant, equipment, towers and transmission lines and site restoration actions.

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, road 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 also include existing infrastructure on-site and off-site relevant to the project.

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

12. Assessment of project specific matters

12.1 This section sets out the scope of project specific matters that are to be given detailed treatment in the EIS.

12.2 The final scope of project specific matters will be determined by the Coordinator-General when finalising the TOR. In the course of preparing the EIS, information may become available that warrants a change of scope.

Land

Objectives

Development should be designed and operated to:

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

(b) contribute to community wellbeing

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

Existing environment

12.3 Discuss the location of the project which should include a description of:

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

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

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

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

(e) state interests identified in the State Planning Policy 2017 (SPP) affecting the corridor route

(f) regional plans and the provisions of the eight planning scheme provisions relating to material changes of use and operational works which apply to the project

(g) SDAPs which apply to the project and the project site

(h) location and design factors influencing the choice of the project corridor

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

Impact assessment and mitigation

12.4 Identify any regional planning interests (e.g., priority agricultural areas and strategic environmental areas) affected by the project, and the source of mapping to identify those interests. Where mapping was not available on the government website, identify the methodology followed to prepare the mapping and its scale.

12.5 Describe and map the extent of any known mines or quarries of commercial significance, including petroleum pipeline infrastructure, registered exploration permits, mineral development licences, or mining leases, and active, disused, or abandoned workings within the project area. Address impacts on these activities.

12.6 Identify any historical workings within or adjacent to the proposed transmission corridor. 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.

12.7 Identify potential and actual areas of acid sulfate soils. Where potential areas are identified, further investigations (including field surveys) should be undertaken in accordance with the SPP and accepted industry guidelines. Assess the impacts and the proposed mitigation measures.

12.8 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, clean-up, manage and dispose of land that is currently contaminated or becomes contaminated.

12.9 Identify existing and potential Native Title rights and interests possibly impacted by the project and the potential for managing those impacts by an Indigenous Land Use Agreement or other measure.

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

12.11 Identify any infrastructure or access tracks associated with the project proposed to be located within, or which may have impacts on, the stock route network managed under the *Stock Route Management Act 2002*, including 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.

12.12 Describe the visual impact of the project on communities, particularly those living in townships and urban areas.

12.13 Describe the proposed mitigation measures that would be used to avoid or minimise impacts.

12.14 Discuss the stages of the construction of the project, timing and the location of set down areas for materials. Assess the impacts and their mitigations.

Flora and fauna

Objective

Biodiversity including 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

12.15 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

12.16 Using maps at suitable scales, illustrate the context of the corridor route and proposed footprint and impact areas 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.

12.17 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.

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

(a) matters of state environmental significance (MSES) and matters of national environmental significance

(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) evidence of the height of the tallest vegetation adjacent to the proposed infrastructure

(e) fish habitat areas

(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*, assessable development under the *Vegetation Management Act 1999* (VM Act), and an authority and/or permit under the *Environment Protection Act 1994*

(h) provide a statement against State Code 16: Native vegetation clearing of the State Development Assessment Provisions, addressing the relevant performance outcomes for coordinated projects (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) the existing integrity of ecological processes, including habitats of threatened, near-threatened or special least-concern species

(m) actions of the project that require an authority under the NC Act and *Water Act 2000* (for example, riverine protection permits) and/or would be assessable development for the purposes of the VM Act, the *Fisheries Act 1994*

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

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

Mitigation measures

12.19 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.

12.20 Describe strategies for protecting Ramsar wetlands; and discuss any obligations imposed by state or Commonwealth legislation or policy, or international treaty obligations as described in section 12.123.

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

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

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

12.24 Where Queensland legislation or policy requires an offset for a significant residual impact on a particular natural environmental value, the offset proposal(s) is to be presented in a form consistent with relevant legislation and policy.

Biosecurity

Objectives

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

(a) the spread of weeds and pest animals is minimised

(b) existing weeds and pest animals 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

12.25 Provide information on the current distribution and abundance of pest animals and weeds on the proposed alignment.

12.26 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

12.27 Describe the impact the project's construction and operation will have on the spread of pest animals, weed species and disease along the proposed alignment and into adjoining properties.

Mitigation measures

12.28 Propose detailed measures to control and limit the spread of pests, weeds and diseases surrounding the proposed alignment 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*.

12.29 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

12.30 Describe the impacts of the project on water quality and water quality objectives are to be managed. Describe 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.

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

(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 water bodies, lakes, springs and watercourses are maintained—including the stability of beds and banks of watercourses

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

(e) volumes and quality of groundwater 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

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

12.32 Provide detail that demonstrates the proposal meets the performance outcomes of SDAP Code 18: Constructing or raising waterway barrier works in fish habitats (see Appendix 1) in relation to any causeways or bridge crossings that interfere with fish movement through the watercourse.

12.33 Provide information on the proposed water usage by the project, including details about the quality and quantity of all water required to service to the site during the construction.

12.34 Describe proposed sources of water supply given the implication of any approvals required under the *Water Act 2000*.

12.35 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.

12.36 Provide detailed designs for all infrastructure utilised in the treatment of on-site 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

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

12.38 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.

12.39 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.

12.40 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.

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

12.42 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

12.43 Describe the existing noise and vibration sources along the project site e.g., agricultural machinery and other noise sources which are accepted as part of the existing environment.

12.44 Describe the characteristics of the noise and vibration sources that would be emitted when carrying out the activity (point source and general emissions). Describe noise and vibration emissions (including fugitive sources) that may occur during construction, commissioning, and operation.

12.45 Describe how the proposed activity, and in particular, the key project components described above, would be managed to be consistent with best practice environmental management for the activity. Where a government plan is relevant to the activity, or the site where the activity is proposed, describe the activity's consistency with that plan.

12.46 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

12.47 For wastes besides wastewater (which is addressed in the water resources section of this TOR), describe all the expected significant waste streams from the proposed project activities during the construction and operational phases of the project.

12.48 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.

Transport

Objectives

The construction and operation of the project is to aim to address local government and state government issues 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 or mitigation of impacts on the condition of transport infrastructure

(c) ensure any required works are compatible with existing infrastructure and future transport corridors.

Impact assessment

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

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

12.51 Provide sufficient information to allow an independent assessment of how existing transport infrastructure will be affected by project transport at the local and regional level (for example, local government roads and state-controlled roads).

12.52 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 *Guide to Traffic Impact Assessment December 2018* and the relevant eight local government impact assessment methodologies for local government roads impacted by the project.

12.53 Identify whether the project is part of the *Queensland Roads and Investment Program 2017-2018 – 2020-2021.*

Mitigation measures

12.54 Discuss and recommend how identified impacts will be mitigated. Mitigation strategies are to be prepared in close consultation with relevant transport authorities (including local governments).

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

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

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

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

12.58 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

12.59 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.

12.60 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, and local communities. The SIA must be informed by the results from community and stakeholder engagement.

Key social impact assessment outcomes

12.61 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.

12.62 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.

12.63 The SIA will need to identify the percentage of locally based workers for the construction and operational phases. 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.

12.64 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

12.65 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.

12.66 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

12.67 Consistent with the Coordinator-General's *Economic impact assessment guideline* (April 2017). Identify the size and economic effects of the project on the local and regional area using regional impact analysis and cost-benefit analysis. The provided analysis should:

(a) describe the local and regional economies likely to be impacted by the project and identify the relevant stakeholders, including:
   i. a map illustrating the local and regional economies (local government areas) that could be potentially impacted by the project
   ii. population
   iii. economic indicators
   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 (GRP)
   ii. gross state product (GSP)
   iii. employment outcomes
   iv. value added to the economy by the project by sector or industry.

(c) the Cost-Benefit Analysis provided should clearly identify the structure of the project and relevant direct and indirect costs 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. ongoing operational costs and benefits
   v. the cost to all levels of government of any additional infrastructure
   vi. expected project lifetime and any residual value over the assessment period.

(d) the Regional Impact Analysis should consider 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 of the proposal in the local and regional economic context (with reference to the various project components and stages)

v. the significance of the proposal in terms of the local, regional and state industry, including direct and indirect benefits (e.g. improved level of service for domestic and industrial consumers), direct and indirect employment from the project, and key sectors and industries impacted

vi. the potential impacts the project may have on relevant prices, which might include utilities prices, wages, 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, or different project options if available. Potential benefits and costs along with relevant positive and negative externalities should be valued where reasonable, otherwise they should be 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

12.68 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 site (for example, changing flooding characteristics).

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

12.70 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.

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

12.72 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.

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

Flooding

12.74 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.

12.75 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.

Matters of national environmental significance

12.1 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).

12.2 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

12.76 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.

12.77 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.

12.78 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.

12.79 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.

12.80 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).

12.81 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.

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

12.83 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).

12.84 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.

12.85 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.

12.86 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.

12.87 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.

12.88 Identify and evaluate any positive impacts on relevant MNES.

12.89 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.

12.90 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

12.91 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.

12.92 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

12.93 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).

12.94 Economic and social and cultural 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.

12.95 Identification of affected parties is required, including a statement mentioning any communities that may be affected and describing their views.

Assessment requirements

Project description and alternatives

12.96 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.

12.97 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.

12.98 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

12.99 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

12.100 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

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

12.102 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.

12.103 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.

12.104 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.

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

12.106 The MNES chapter must include the area (in hectares) and quality of all suitable habitats.

12.107 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

12.108 Describe and assess the impacts (direct, indirect 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.

12.109 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).

12.110 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

12.111 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.

12.112 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).

12.113 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.

Listed migratory species (sections 20 and 20A)

List of potential migratory species

12.114 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

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

12.116 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.

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

12.118 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.

12.119 The MNES chapter must include a detailed habitat assessment for each of the listed migratory species identified above within the project site. 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).

12.120 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.

12.121 The MNES chapter must include the area (in hectares) and quality of all suitable habitats.

12.122 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

12.123 Describe and assess the impacts (direct, indirect 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.

12.124 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).

12.125 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.

12.126 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.

12.127 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

12.128 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.

12.129 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).

12.130 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.

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

Offsets

12.132 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 how the proposed offset/s area provides connectivity with other relevant habitats and biodiversity corridors; 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.

12.133 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) 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);

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

(d) 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;

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

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

(g) 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

(h) 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.

12.134 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

12.135 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

12.136 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
EP Act	*Environmental Protection Act 1994*
EP Regulation	Environmental Protection Regulation 2008
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)
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, 2018*,* viewed 3 June 2019, **https://planning.dsdmip.qld.gov.au/planning/better-development/the-development-assessment-process/the-states-role/state-development-assessment-provisions**

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**

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-policyv1-1.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**

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**

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**

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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