

**Draft Terms of Reference for the Gladstone
New Fuels Development Project Stage 2A
Environmental Impact Statement (EIS)**
Proposed by Queensland Energy Resources Pty Ltd
October 2014



Prepared by: Statewide Environmental Assessments Unit, Department of Environment and Heritage Protection

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Part A About these terms of reference

1 Statutory basis

Queensland Energy Resources (Aussun) Pty Limited; Queensland Energy Resources (No. 1) (Stuart) Pty Ltd; Queensland Energy Resources (No. 2) (Stuart) Pty Ltd ('QER'; 'proponents') jointly hold an environmental authority (EPML00658213) within a granted mining lease (ML80003) and under Petroleum Facility Licence PFL8. The environmental authority is an amalgamated environmental authority covering mining, petroleum activities and site-specific prescribed environmentally relevant activities (ERAs). The proponents operate an existing oil shale mine and processing facilities at the site, which are authorised in the ML and PFL as a demonstration processing plant.

The proponents now wish to apply to amend conditions of environmental authority EPML00658213, to provide for a commercial scale processing facility, next to the existing plant, within the existing mining lease. In addition, the amendment application will propose to extend the area of disturbance beyond the existing approved footprint, subject to offsets, within the area of the existing mining lease. A brief description of the proposed amended project is provided in the accompanying document Gladstone New Fuels Development Project Stage 2A project description.

Conditions would be revised to provide for additional processing facilities and extended disturbance area, as well as to ensure that conditions are more outcome-oriented in accordance with the Department of Environment and Heritage Protection's (EHP's) Guideline on Model Conditions for Mining. The required environmental authority (EA) amendments are anticipated to include:

- amendment of the project footprint boundary to reflect extension of the disturbed area (within the existing mining lease)
- incorporation of stack locations and other air emission points for the new plant and amendment of air release limits to provide for the proposed new facilities
- identification of several new surface water release points associated with the extension of the disturbed area
- amendment of rehabilitation requirements to incorporate the extended disturbed area
- provision for in pit placement of processed shale moistened with treated water
- identification of new monitoring requirements associated with the proposed plant and extended disturbed area.

These amendments and any others necessary to provide for the proposed additional facilities and extended disturbance area would be detailed in the environmental impact statement (EIS).

When environmental approval is granted, the proponents would apply to the Department of Natural Resources and Mines to seek variation of the existing specific purpose under section 234(1)(b) of *the Mineral Resources Act 1989* and a corresponding variation to PFL8, to remove the restriction relating to the 'demonstration' purpose of the processing plant.

On 5 September 2014, the proponents were granted approval to prepare a voluntary EIS under section 72 of the *Environmental Protection Act 1994* (EP Act).

The EIS would be completed under the process requirements set out in chapter 3 of the EP Act.

On 8 July 2014, the proposal was determined to be a 'controlled action' by the Australian Government's Department of the Environment under the *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth). Any significant impacts on matters of national environmental significance would be assessed as part of the voluntary EIS process.

Under EHP's Guideline – Generic Terms of Reference for an Environmental Impact Statement (for a resource project), the EIS would address all statutory requirements, including relevant environmental information requirements, of the Australian and state regulatory authorities.

The key information requirements of the EP Act that must be addressed in an EIS are:

- the requirements of section 40 of the EP Act, which specifies the purpose of an EIS and of the EIS process

- sections 125 and 126 which set out the general information requirements for applications for an environmental authority
- the environmental objectives and performance outcomes specified in schedule 5, part 3, table 1 of the Environmental Protection Regulation 2008 (EP Regulation).

The EIS is intended to provide the information required to enable the issuing of the relevant amendments to the existing environmental authority for the project.

Following public consultation, the terms of reference (TOR) will be finalised by the chief executive of the authority administering the EP Act.

This section draws attention to the project assessment information requirements of the EP Act administered by EHP. While these generic (TOR) aim to seek information corresponding to these requirements, proponents should confirm that the EIS addresses all statutory requirements, and also meets the relevant information requirements of other Australian and state regulatory authorities.

The generic TOR apply to the assessment of resource projects that require assessment under the EIS process requirements set out in chapter 3, part 1, of the EP Act¹.

Resource activities that are proposed to be carried out under one or more resource tenures, in any combination, as a single integrated operation are known as resource projects. Resource projects involve undertaking resource activities such as mining, petroleum (including coal seam gas (CSG)), geothermal and greenhouse gas storage activities.

The EIS process applies to site-specific (s124) EA applications for undertaking resource projects that meet any of EHP's EIS triggers in the guideline Environmental impact statements – Triggers for environmental impacts statements under the *Environmental Protection Act 1994* for mining, petroleum and gas activities', available at www.ehp.qld.gov.au.

This includes site-specific EA amendment applications for existing resource projects.

Section 139 of the EP Act states that the information stage of the environmental authority process does not apply if the EIS process under the EP Act is complete (unless there has been a subsequent change). Consequently, if the project is to proceed, it is particularly important that the EIS provide all the information needed to enable the issuing of an EA for the project.

EHP has developed a set of model conditions for resource projects, which should form the basis for draft EA conditions and general environmental protection commitments in an EIS. The EIS should discuss impact mitigation measures in the context of these model conditions. They are:

- Guideline—Mining—Model mining conditions
- Guideline—Resource activity – mining—Model water conditions for coal mines in the Fitzroy basin.

¹ See the EHP publication Guideline – The environmental impact statement process under the *Environmental Protection Act 1994*.

2 Accredited process for controlled actions under Commonwealth² legislation

The project is a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), which requires assessment by an EIS process accredited under the Bilateral Agreement (section 45 of the EPBC Act). As such, the EIS must address the 'controlling provisions' and all matters relating to them. The controlling provisions for the project, with regard to its potential impacts on matters of national environmental significance (MNES) are:

- sections 12 and 15A of the EPBC Act (World Heritage properties)
- sections 15B and 15C of the EPBC Act (National Heritage places)
- sections 18 and 18A of the EPBC Act (listed threatened species and communities)
- sections 20 and 20A of the EPBC Act (listed migratory species)
- sections 24B and 24C of the EPBC Act (Great Barrier Reef Marine Park).

The EIS would be prepared pursuant to the bilateral agreement between the Australian and Queensland governments for the purposes of the Australian Government's assessment under part 8 of the EPBC Act.

The assessment of the potential impacts, mitigation measures and any offsets for residual impacts must be dealt with in a stand-alone section of the EIS that fully addresses the matters relevant to the controlling provisions. Requirements for MNES are set out in Appendix 2 of the TOR.

The matters prescribed in section 6 (for the draft TOR) and in Schedule 1 of the EP Regulation (for the EIS).

3 EIS guidelines

The TOR must be read in conjunction with the EHP guideline—The Environmental Impact Statement Process under the EP Act, which explains:

- participants in the EIS process
- consultation requirements
- EIS format and copy requirements.

In addition, subject-specific guidelines are referenced throughout the TOR. Refer to Appendix 1 for a list of these policies and guidelines. Additional technical guidelines on how to comply with the TOR and information about the project or the EIS process conducted under the EP Act are available on the EHP website www.ehp.qld.gov.au.

Part B Content of the EIS

1 General approach

- 1.1 For the purposes of the EIS process, 'environment' is defined in section 8 of the EP Act.
- 1.2 The EIS should give priority to the critical matters associated with the project (specified in section 7 of the TOR).
- 1.3 The detail in which the EIS deals with matters relevant to the project should be proportional to the scale of the impacts on environmental values. When determining the scale of an impact, consider its intensity, duration, cumulative effect, irreversibility, the risk of environmental harm, management strategies and offsets provisions.

2 Mandatory requirements of an EIS

² This section applies where the proponent has received confirmation from the Australian Government Environmental Agency that the project is a controlled action under the EPBC Act and that it is to be assessed under an EIS accredited under the bilateral agreement.

- 2.1 Describe the project including all aspects subject to this assessment. Provide details of the proponent of the project, including details of any joint venture partners. The project description should include all on and off lease activities relevant to the project including construction, operation and decommissioning activities. If the delivery of the project is to be staged, the nature and timing of the stages should be fully described.
- 2.2 For all the relevant matters, the EIS must identify and describe the environmental values³ that must be protected. Environmental values are specified in the EP Act, the EP Regulation, environmental protection policies (EPPs) and relevant guidelines.⁴
- 2.3 The assessment should cover both the short and long-term scenarios and state whether any relevant impacts are likely to be irreversible.
- 2.4 Provide all available baseline information relevant to the environmental risks of the project. Provide details 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.
- 2.5 Demonstrate how the construction, operation and decommissioning (to the extent known) of the project would be consistent with best practice environmental management. In general, the preferred hierarchy for managing likely impacts is: (a) to avoid; (b) to minimise or mitigate; and (c) if necessary, and possible, to offset. Where relevant, mitigation strategies should be described in the context of EHP model conditions.
- 2.6 Provide detailed strategies in regard to all critical matters 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.
- 2.7 Impact minimisation measures should include ongoing monitoring and proposals for an adaptive management approach, as relevant, based on monitoring. The proposed measures should give confidence that, based on current technologies, the impacts can be effectively minimised over the long term.
- 2.8 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.
- 2.9 For unproven elements of a resource extraction or processing process, technology or activity, identify and describe any global leading practice environmental management, where available.

3 Further requirements of an EIS

- 3.1 The assessment and supporting information should be sufficient for the administering authority to decide whether an approval should be granted. Where applicable, sufficient information should be included to enable approval conditions, such as the existing model EA conditions, to be utilised.
- 3.2 To the extent of the information available on approved and existing projects, the assessment should endeavour to predict the cumulative impact⁵ 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 any conditions. The EIS should also outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis.
- 3.3 Include a consolidated description of all the proponent's commitments to implement management measures (including monitoring programs). Should the project proceed, these should be able to be carried over into the approval conditions as relevant.
- 3.4 Provide all geographical coordinates throughout the EIS in latitude and longitude against the Geocentric Datum of Australia 1994 (GDA94).

³ Defined in section 125(l)(i)(A) of the EP Act.

⁴ For example, the Queensland Water Quality Guidelines and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (refer to Appendix 1 Policies and guidelines for details).

⁵ Cumulative impact is defined as 'combined impacts from all relevant sources (developments and other activities in the area)'.

- 3.5 An appropriate public consultation program is essential to the impact assessment process. The proponent should consult with local, Queensland and Australian government authorities, and potentially affected local communities.
- 3.6 The EIS should 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. Requirements for the public consultation plan are listed in the document Preparing an environmental impact statement: guideline for proponents.
- 3.7 Include, as an appendix, a public consultation report. The report should detail how the public consultation plan was implemented including the results.

4 Executive summary

- 4.1 The executive summary should 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 should use plain English, avoid jargon, be written as a stand-alone document and be structured to follow the EIS. It should be easy to reproduce and distribute on request to those who may not wish to read or purchase the whole EIS.

5 Introduction

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.

5.1 Project proponent

- 5.1.1 Describe the proponent's experience, including:
 - the designated proponent's full name, postal address and Australian Business Number, if relevant (including details of any joint venture partners)
 - the nature and extent of business activities
 - environmental record, including a list of any breach of relevant environmental laws during the previous 10 years
 - the proponent's environmental, health, safety and community policies.

5.2 The environmental impact assessment process

- 5.2.1 The EIS should provide an outline of the environmental impact assessment process, including the role of the administering authority in the decision making process for the EIS. 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.
- 5.2.2 Inform the reader how and when properly made public submissions on the EIS will be addressed and taken into account in the decision-making process.

5.3 Project approvals process

- 5.3.1 Provide an outline of the approvals 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 leases/licences/permits/consents required by the proponent before construction can commence.

Provide a flow chart indicating the key approvals and opportunities for public comment. Guidance on typical associated approvals can be accessed from the Coordinator-General's website.⁶

6 Project description

6.1 Proposed development

6.1.1 The EIS must describe and illustrate at least the following specific information about the proposed project:

- the project's title
- the project, its objectives, and expected capital expenditure
- rationale for the project
- the nature and scale of activities to be undertaken and whether it is a greenfield or brownfield site
- the regional and local context of the project's footprint (with maps at suitable scales)
- relationship to other coordinated projects and other major projects (of which the proponent should reasonably be aware)
- the workforce numbers to be employed by the project during its various phases, where personnel would be accommodated and, where relevant, the likely recruitment and rostering arrangements to be adopted
- the proposed construction staging and likely schedule of works.

6.2 Site description

6.2.1 Provide real property descriptions of the project land and adjacent properties; any easements; any underlying resource tenures; and identification number of any resource activity lease for the project land that is subject to application. Key transport, state-controlled roads, rail, air, port/sea and other infrastructure in the region relevant to the project and to the site should be described and mapped.

6.2.2 Describe and illustrate the topography of the project site and surrounding area, and highlight any significant features shown on the maps. Maps should 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.

6.2.3 Where appropriate, describe and map in plan and cross-sections the geology and landforms, including catchments, of the project area. Show geological structures, such as aquifers, faults and economic resources that could have an influence on, or be influenced by, the project's activities.

6.2.4 Where appropriate, describe, map and illustrate soil types and profiles of the project area at a scale relevant to the proposed project. Identify soils that would require particular management due to wetness, erosivity, depth, acidity, salinity or other feature.

6.3 Climate

6.3.1 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 should be presented in a statistical form including long-term averages and extreme values, as necessary.

6.4 Proposed construction and operations

6.4.1 Describe the following information about the proposal:

- existing infrastructure and easements on the potentially affected land
- the proposed extractive and processing methods, associated equipment and techniques

⁶ www.dsdip.qld.gov.au/coordinator-general

- the sequencing and staging of activities
- the capacity of high-impact plant and equipment, their chemical and physical processes, and chemicals or hazardous materials to be used
- the known locations of new or altered works and structures and infrastructure necessary for the project at all stages of its development, whether on or off the project lease(s) or rights of way
- any activity that is a prescribed environmentally relevant activity if it were not undertaken on a mining/petroleum lease
- any new or expanded quarry and screening operations (e.g. from off-site locations) required to service the project.

7 Assessment of critical matters

7.1 Critical matters

7.1.1 This section sets out the scope of critical matters that should be given detailed treatment in the EIS. A critical matter is an aspect of the proposal that has one or more of the following characteristics:

- a high or medium probability of causing serious or material environmental harm or a high probability of causing an environmental nuisance⁷
- considered important by the administering authority and/or there is a public perception that an activity has the potential to cause serious or material environmental harm or an environmental nuisance, or, the activity has been the subject of extensive media coverage
- identified (in a referral decision) as a specific controlling provision under the EPBC Act.

7.1.2 The final scope of critical matters will be determined by the administering authority when finalising the TOR. In the course of preparing the EIS, information may become available that warrants a change of scope.

7.2 Matters of national environmental significance

7.2.1 The Australian Government Environment Minister has determined that the project impacts on MNES. The controlling provisions for the project, with regard to its potential impacts on MNES are:

- sections 12 and 15A of the EPBC Act (World Heritage properties)
- sections 15B and 15C of the EPBC Act (National Heritage places)
- sections 18 and 18A of the EPBC Act (listed threatened species and communities)
- sections 20 and 20A of the EPBC Act (listed migratory species)
- sections 24B and 24C of the EPBC Act (Great Barrier Reef Marine Park).

Refer to Appendix 2 for detailed MNES requirements.

⁷ 'Material environmental harm', 'serious environmental harm' and 'environmental nuisance' are defined in Part 3, sections 15, 16 and 17 of the *Environmental Protection Act 1994*.

7.3 Flora and fauna

Objectives and performance outcomes

The environmental objectives to be met under the EP Act are that the:

- activity is operated in a way that protects the environmental values of associated flora and fauna including marine ecosystems
- choice of the site, at which the activity is to be carried out, minimises serious environmental harm on areas of high conservation value and special significance
- location for the activity on a site protects all environmental values relevant to adjacent sensitive use
- design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management.

The performance outcomes corresponding to these objectives are in Schedule 5, tables 1 and 2 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

The EP Act allows for a condition to be placed on an approval to require offsets for impacts on matters of state environmental significance (MSES). Therefore the project should seek to:

- Avoid and minimise and mitigate impacts on MSES
- Offset any significant residual impacts in accordance with the *Environmental Offsets Act 2014*.

Information requirements—rehabilitation

- 7.3.1 The EIS should provide information based on relevant guidelines, current best practice approaches and legislative requirements about the strategies and methods for progressive and final rehabilitation of the environment disturbed by the project and decommissioning.
- 7.3.2 Develop a preferred rehabilitation strategy that would minimise the amount of land disturbed at any one time, and minimise the residual loss of land and water bodies with ecological or productive value. Show the expected final topography of the site with any excavations, waste areas and dam sites on suitably scaled maps. Illustrate the proposed final land uses.
- 7.3.3 Describe and illustrate where final voids and uncompacted overburden and workings at the end of operations would lie in relation to flood levels up to and including the 'probable maximum flood level' based on the Bureau of Meteorology's 'probable maximum precipitation' forecast for the locality.
- 7.3.4 Describe rehabilitation success criteria that would be used to measure progress and completion.
- 7.3.5 Notwithstanding that management techniques may improve over the life of the project, and legislative requirements may change, the EIS needs to give confidence that all potential high-impact elements of the project (e.g. spoil dumps, voids, tailings and water management dams, creek diversions, subsidence areas, etc.) are capable of being managed and rehabilitated to achieve acceptable land use capabilities/suitability, to be stable and self-sustaining and to prevent upstream and downstream surface and groundwater contamination.

Information requirements—flora and fauna

- 7.3.6 Describe the likely impacts on the biodiversity values of affected areas arising from the construction, operation and eventual decommissioning of the project (where known). Take into account any avoidance and/or mitigation measures and potential offsets. The assessment should include, but not be limited to, the following key elements:
- matters of state environmental significance and national environmental significance (if applicable)
 - terrestrial and aquatic ecosystems (including groundwater-dependent ecosystems, and marine ecology) and their connectivity and interaction
 - biological diversity including listed flora and fauna species and regional ecosystems

- the integrity of ecological processes, including habitats of threatened, and special least-concern species
 - the integrity of landscapes and places, including wilderness and similar natural places
 - impact of waterway barriers on fish passage in significant waterways
 - chronic, low-level exposure to contaminants or the bio-accumulation of contaminants; and
 - impacts on native fauna due to wastes at the site, particularly those related to any form of toxicants in supernatant water of any tailings storage facility.
- 7.3.7 Describe any actions of the project that require an authority under the *Nature Conservation Act 1992*, and/or would be assessable development for the purposes of the *Vegetation Management Act 1999*⁸ (VMA) and/or the *Fisheries Act 1994*.
- 7.3.8 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 MNES and matters of state environmental significance (MSES).
- 7.3.9 Specifically address any obligations imposed by State or Commonwealth legislation or policy or international treaty obligations, such as the China – Australia Migratory Bird Agreement, Japan – Australia Migratory Bird Agreement, or Republic of Korea – Australia Migratory Bird Agreement.
- 7.3.10 Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors, and propose measures that would avoid the need for waterway barriers, or propose measures to mitigate the impacts of their construction and operation. The measures proposed for the progressive rehabilitation of disturbed areas should include rehabilitation success criteria in relation to natural values that would be used to measure the progress.
- 7.3.11 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed. Proposals for the rehabilitation of disturbed areas should incorporate, where appropriate, provision of nest hollows and ground litter.

Offsets

- 7.3.12 Where Commonwealth and Queensland legislation and relevant offset policies allows for or requires an offset for a significant residual impact on MNES or MSES, the offset proposal(s) shall be presented in a form consistent with relevant legislation and policy (including Queensland Environmental Offsets Framework 2014).

7.4 Water quality

Objective and performance outcomes

The environmental objectives to be met under the EP Act are that the activity (project) be operated in a way that:

- minimises harm to the environmental values of waters
- protects the environmental values of wetlands
- protects the environmental values of groundwater and any associated surface ecological systems.

The performance outcomes corresponding to this objective are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

⁸ Refer to Schedule 24 of the Sustainable Planning Regulation 2009 in order to determine whether or not the development is assessable development under the Vegetation Management Act 1999. Refer also to www.dnrm.qld.gov.au/land/vegetation-management

Information requirements

- 7.4.1 Detail the chemical and physical characteristics of surface waters and groundwater within the area that may be affected by the project.
- 7.4.2 Identify the quantity, quality and location of all potential discharges of water and waste water by the project, whether as point sources (such as controlled discharges from regulated dams) or diffuse sources (such as seepage from waste rock dumps or irrigation to land of treated sewage effluent). Assess the potential impacts of any discharges on the quality and quantity of receiving waters taking into consideration the assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts.
- 7.4.3 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed.

7.5 Water resources

Objectives

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

- equitable, sustainable and efficient use of water resources
- environmental flows, water quality, in-stream habitat diversity, and naturally occurring inputs from riparian zones (including groundwater dependent ecosystems) support the long-term maintenance of the ecology of aquatic biotic communities
- the condition and natural functions of water bodies (e.g. lakes, springs, watercourses and wetlands) are maintained—including the stability of beds and banks of watercourses.

Information requirements

- 7.5.1 Provide details of any proposed impoundment, extraction, discharge, injection, use or loss of surface water or groundwater. Identify any approval or allocation that would be needed under the *Water Act 2000*.
- 7.5.2 Detail any significant diversion or interception of overland flow. Include maps of suitable scale showing the location of diversions and other water-related infrastructure in relation to mining infrastructure.
- 7.5.3 Describe the options for supplying water to the project, and assess any potential consequential impacts in relation to the objectives of any water resource plan, resource operations plan and wild river declaration that may apply.
- 7.5.4 Develop hydrological models as necessary to describe the inputs, movements, exchanges and outputs of all significant quantities and resources of surface water and groundwater that may be affected by the project. The models should address the range of climatic conditions that may be experienced at the site, and adequately assess the potential impacts of the project on water resources. The models should include a site water balance. This should enable a description of the project's impacts at the local scale and in a regional context including proposed:
- changes in flow regimes from diversions, water take and discharges
 - alterations to riparian vegetation and bank and channel morphology
 - direct and indirect impacts arising from the development.

7.6 Air

Objectives and performance outcomes

The environmental objective to be met under the EP Act is that the activity will be operated in a way that protects the environmental values of air.

The performance outcomes corresponding to this objective are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 7.6.1 Fully describe the characteristics (through an emissions inventory) of the contaminants or materials released when carrying out the activity (point source and fugitive emissions). Emissions (point source and fugitive) during construction, commissioning, upset conditions, operation and closure should be described.
- 7.6.2 Predict the impacts of the releases from the activity on environmental values of the receiving environment using recognised quality assured methods. The description of impacts should take into consideration the assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. The impact prediction must:
- Address residual impacts on the environmental values (including appropriate indicators and air quality objectives) of the air receiving environment, with reference to sensitive receptors⁹, using recognised quality assured methods. This should include all relevant values potentially impacted by the activity, under the EP Act, EP Regulation and Environmental Protection (Air) Policy 2008 (EPP (Air)).
 - Address the cumulative impact of the release with other known releases of contaminants, materials or wastes associated with existing development and possible future development (as described by approved plans and existing project approvals).
 - Quantify the human health risk and amenity impacts associated with emissions from the project for all contaminants whether or not they are covered by the National Environmental Protection (Ambient Air Quality) Measure or the EPP (Air).
- 7.6.3 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.
- 7.6.4 Describe how the achievement of the objectives would be monitored, audited and reported, and how corrective actions would be managed.

8 Assessment of routine matters

8.1 Routine matters

- 8.1.1 The following subsections list the routine matters for resource projects, with (where applicable) a reference to the objectives defined in the EP Regulation. In some cases, not all the matters may be relevant, while in others the list may not be exhaustive. Where applicable, refer to the objective of the EP Regulation (section 3) to ensure ecologically sustainable development is achieved.
- 8.1.2 For each routine matter identified below, the level of detail should be proportional to the scale of impacts. As a minimum, the proponent should supply sufficient information that confirms the risks/impacts are not significant.

⁹ For example, the locations of existing residences, places of work, schools, etc., agricultural or ecologically significant areas/species that could be impacted.

8.2 Land

Objectives and performance outcomes

The environmental objectives to be met under the EP Act are that the:

- activity is operated in a way that protects the environmental values of land including soils, subsoils and landforms
- choice of the site, at which the activity is to be carried out, minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places
- location for the activity on a site protects all environmental values relevant to adjacent sensitive use
- design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management.

The performance outcomes corresponding to these objectives are in Schedule 5, tables 1 and 2 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements—land use

- 8.2.1 Describe potential impacts of the proposed land uses taking into consideration the proposed measures that would be used to avoid or minimise impacts. The impact prediction must address:
- landscape (including visual amenity) and land uses in and around the project area, referring to regional plans and local government planning schemes
 - any existing mining, petroleum, geothermal and greenhouse gas storage tenures overlying or adjacent to the project site, and any to be applied for as part of this project
 - any infrastructure proposed to be located within, or which may have impacts on, the Stock Route Network.
- 8.2.2 Address the requirements of the *Regional Planning Interests Act 2014*.¹⁰
- 8.2.3 For surface mines and projects with activities that disturb the land surface, describe the proposed land use during and after the project. Show how the land form during and post mining will be stable and non-eroding over time (describe how current technologies will be applied).
- 8.2.4 Detail any known or potential sources of contaminated land that could be impacted by the project. Describe how any proposed land use may result in land becoming contaminated.
- 8.2.5 Identify existing or 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.

8.3 Biosecurity

Objective

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

- the spread of weeds and pest animals is minimised
- existing weeds and pests are controlled.

Information requirements

- 8.3.1 Propose detailed measures to control and limit the spread of pests and weeds on the project site and adjacent areas, particularly declared plants under the *Plant Protection Act 1989* and the Land Protection (Pest and Stock Route Management) Regulation 2003 and weeds of national significance.

¹⁰ www.dsdip.qld.gov.au/infrastructure-and-planning/regional-planning-interests-act.html

8.4 Flooding and regulated dams

Objective

The construction and operation of the project should aim to ensure the risk of, and the adverse impacts from flooding hazards or dam failure are avoided, minimised or mitigated to protect people, property and the environment.

Information requirements

- 8.4.1 Describe current flood risk for a range of annual exceedance probabilities up to the probable maximum flood, for potentially affected waterways, and assess (through flood modelling) how the project may potentially change flooding characteristics. The assessment should consider all infrastructure associated with the project including levees, roads and linear infrastructure and all proposed measures to avoid or minimise impacts.
- 8.4.2 List and describe all dams or levees proposed on the project site and undertake an assessment to determine the hazard category of each dam or levee (low, significant, or high), according to the criteria in the EHP Manual for Assessing Hazard Categories and Hydraulic Performance of Dams. Refer also to the requirements under the hazards and safety section of the TOR.

8.5 Noise and vibration

Objective and performance outcomes

The environmental objective to be met under the EP Act is that the activity will be operated in a way that protects the environmental values of the acoustic environment.

The performance outcomes corresponding to these objectives are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 8.5.1 Fully describe the characteristics of the noise and vibration sources that would be emitted when carrying out the activity (point source and general emissions). Noise and vibration emissions (including fugitive sources) that may occur during construction, commissioning, upset conditions, operation and closure should be described.
- 8.5.2 Predict the impacts of the noise emissions from the activity on the environmental values of the receiving environment, with reference to sensitive receptors¹⁰, using recognised quality assured methods. Taking into account the practices and procedures that would be used to avoid or minimise impacts, the impact prediction must address the:
- activity's consistency with the objectives
 - cumulative impact of the noise with other emissions of noise associated with existing development and possible future development (as described by approved plans)
 - potential impacts of any low-frequency (<200 Hz) noise emissions.
- 8.5.3 Describe how the proposed activity 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.
- 8.5.4 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed.

8.6 Waste management

Objective and performance outcomes

The environmental objective to be met under the EP Act is that any waste transported, generated, or received as part of carrying out the activity is managed in a way that protects all environmental values.

The performance outcomes corresponding to these objectives are in Schedule 5, Table 1 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

- 8.6.1 Describe all the expected significant waste streams from the proposed project activities (typically these would include waste rock, tailings and coarse rejects from mining and refining projects, water and salt from petroleum and gas projects), during the construction, operational and decommissioning phases of the project.
- 8.6.2 Describe the quantity, form (liquid, solid, gas), hazard, and toxicity of each significant waste, as well as any attributes that may affect its likelihood of dispersal in the environment, as well the associated risk of causing environmental harm.
- 8.6.3 Define and describe the objectives and practical measures for protecting or enhancing environmental values from impacts by wastes.
- 8.6.4 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.
- 8.6.5 Describe how nominated quantitative standards and indicators may be achieved for waste management, and how the achievement of the objectives would be monitored, audited and managed.
- 8.6.6 Detail waste management planning for the proposed project especially how these concepts have been applied to prevent or minimise environmental impacts due to waste at each stage of the project.
- 8.6.7 Provide details on natural resource use efficiency (such as energy and water), integrated processing design, and any co-generation of power and by-product reuse as shown in a material/energy flow analysis.

8.7 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.

Information requirements

- 8.7.1 Undertake research/studies as required under the *Aboriginal Cultural Heritage Act 2003* (ACH Act) and describe impacts on Indigenous cultural heritage, taking into account the practices and procedures that would be used to avoid or minimise impacts. Include a cultural heritage management plan in accordance with the requirements of Part 7 of the ACH Act.
- 8.7.2 For non-Indigenous historical heritage, 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. Provide strategies to mitigate and manage any negative impacts on non-Indigenous cultural heritage values and enhance any positive impacts (refer to the Queensland Heritage Register).

8.8 Social and economic

Objectives

The construction and operation of the project should aim to:

- avoid or mitigate adverse social and economic impacts arising from the project
- capitalise on opportunities potentially available to affected communities.

Information requirements

- 8.8.1 In accordance with the Coordinator-General's Social impact assessment guideline, describe the likely social impacts of the project (positive and negative) on affected communities taking into account proposed mitigation and management measures to be implemented by the proponent.
- 8.8.2 Describe the likely impacts (positive and negative) of the project on the economies materially impacted by the project. The analysis should describe both the potential and direct economic impacts including estimated costs, if material, on industry and the community.
- 8.8.3 The assessment should identify opportunities to capture the economic benefits of the project, including:
- strategies for ensuring local suppliers of goods and services receive full, fair and reasonable opportunity to tender for work throughout the life of the project through adopting policies such as the Queensland Resources and Energy Sector Code of Practice for Local Content administered by Queensland Resources Council
 - employment development and training strategies for local residents, including Indigenous communities, people with a disability and women
 - opportunities to support the agricultural and tourism industries
 - any recruitment and training programs to be offered.

8.9 Transport

Objectives

The construction and operation of the project should aim to:

- maintain the safety and efficiency of all affected transport modes for the project workforce and other transport system users
- minimise and mitigate impacts on the condition of transport infrastructure
- ensure any required works are compatible with existing infrastructure and future transport corridors.

Information requirements

- 8.9.1 The EIS should include a clear summary of the total transport task for the project, including workforce, inputs and outputs, during the construction and operational phases. Proponents should make appropriate modal choices to ensure transport efficiency and minimise impacts on the community.
- 8.9.2 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. 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 (e.g. local roads and state-controlled roads).
- 8.9.3 Include details of the adopted assessment methodology:
- for impacts on roads: the road impact assessment report in accordance with the Guidelines for Assessment of Road Impacts of Development
 - for impacts on rail level crossings: the Australian Level Crossing Assessment Model
 - for impacts on maritime operations: the Maritime Safety Queensland Guidelines for major development proposals.

- 8.9.4 Discuss and recommend how identified impacts will be mitigated so as to meet the above objectives for each transport mode. Mitigation strategies may include works, contributions or management plans and are to be prepared in close consultation with relevant transport authorities (including local government). Strategies should consider those transport authorities' works program and forward planning, and be in accordance with the relevant methodologies, guidelines and design manuals.

8.10 Hazards and safety

Objectives

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

- the risk of, and the adverse impacts from, natural and man-made hazards are avoided, minimised or mitigated to protect people and property
- the community's resilience to natural hazards is maintained or enhanced
- developments involving the storage and handling of hazardous materials are appropriately located, designed and constructed to minimise health and safety risks to communities and individuals and adverse effects on the environment.

Information requirements

- 8.10.1 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:
- potential hazards, accidents, spillages, fire and abnormal events that may occur during all stages of the project, including estimated probabilities of occurrence
 - identifying all hazardous substances to be used, stored, processed or produced and the rate of usage
 - potential wildlife hazards, natural events (e.g. cyclone, storm tide inundation, flooding, bushfire) and implications related to climate change
 - how the project may potentially affect hazards away from the project site (e.g. changing flooding characteristics).
- 8.10.2 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.
- 8.10.3 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.
- 8.10.4 Outline any consultation undertaken with the relevant emergency management authorities, including the Local Disaster Management Group.

9 Appendixes to the EIS

- 9.1 Appendixes should provide the complete technical evidence used to develop assertions and findings in the main text of the EIS.
- 9.2 No significant issue or matter should be mentioned for the first time in an appendix—it must be addressed in the main text of the EIS.
- 9.3 Include a table listing the section of the EIS where each requirement of the TOR is addressed.
- 9.4 Include a glossary of terms and a list of acronyms and abbreviations.

Acronyms and abbreviations

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

Acronym/abbreviation	Definition
ACH Act	<i>Aboriginal Cultural Heritage Act 2003</i>
AHD	Australian height datum
bilateral agreement	an agreement between the Commonwealth and the State of Queensland under section 45 of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> relating to environmental assessment
EIS	environmental impact statement
EP Act	<i>Environmental Protection Act 1994</i>
EP Regulation	Environmental Protection Regulation 2008
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwlth)
EPP	Environmental Protection Policy (under the EP Act)
GDA94	Geocentric Datum of Australia 1994
IESC	Independent Expert Scientific Committee
MNES	matters of national environmental significance (under the EPBC Act)
MSES	matters of State environmental significance (under the <i>Environmental Offsets Act 2014</i>)
TOR	terms of reference
VMA	<i>Vegetation Management Act 1999</i>

Appendix 1 Policies and guidelines

Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand 2000, *The Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian Water Association (Artarmon) and NZ Water and Wastes Association (Auckland), viewed 18 June 2013, www.environment.gov.au/water/publications/quality/nwqms-guidelines-4-vol1.html

Australian Level Crossing Assessment Model (ALCAM), www.tmr.qld.gov.au/Travel-and-transport/Rail/Level-crossings/ALCAM.aspx

The Coordinator-General, 2013, Preparing an environmental impact statement: *Guideline for proponents*, Department of State Development, Infrastructure and Planning, Brisbane, viewed 18 June 2013, www.dsdip.qld.gov.au/fact-sheets-and-guidelines/coordinated-projects.html

The Coordinator-General, 2013, *Social impact assessment guideline* (draft), Department of State Development, Infrastructure and Planning, Brisbane.

Department of Agriculture, Fisheries and Forestry, *Waterway Barrier Works Development Approvals: Fish Habitat Management Operational Policy FHMOP 008*, April 2013, Department of Primary Industries, Brisbane, 2013, viewed 23 July 2013, www.daff.qld.gov.au/__data/assets/pdf_file/0016/51415/FHMOP008.pdf

Department of Environment and Heritage Protection 2012, *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, February 2012, Department of Environment and Heritage Protection, Brisbane, viewed 17 June 2013, www.ehp.qld.gov.au/land/mining/pdf/mn-mi-assess-haz-cat-hyd-perf-dams-em635.pdf

Department of Environment and Heritage Protection model mining conditions:
www.ehp.qld.gov.au/land/mining/guidelines.html

Department of Environment and Resource Management 2009, *Queensland Water Quality Guidelines, Version 3*, Department of Environment and Resource Management, Brisbane, viewed 18 June 2013, www.ehp.qld.gov.au/water/pdf/water-quality-guidelines.pdf

Department of Main Roads, *Guidelines for Assessment of Road Impacts of Development*, Department of Main Roads, Brisbane, 2006, viewed 26 March 2013, www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guidelines-for-assessment-of-road-impacts-of-development.aspx

Maritime Safety Queensland 2013, *Guidelines for major development proposals*, May 2013, www.msq.qld.gov.au/Waterways/Major-development-proposals.aspx

Department of State Development, Infrastructure and Planning 2014, *State Planning Policy*, www.dsdip.qld.gov.au/about-planning/state-planning-policy.html, Department of State Development, Infrastructure and Planning, Brisbane, viewed 17 June 2013,

Department of State Development, Infrastructure and Planning 2013, *Social impact assessment guideline*, Department of State Development Infrastructure and Planning, Brisbane, viewed 4 March 2014, <http://www.dsdip.qld.gov.au/resources/guideline/social-impact-assessment-guideline.pdf>

EHP (2014) *Flora Survey Guidelines - Protected Plants, Nature Conservation Act 1992*. Department of Environment and Heritage Protection, Queensland Government, Brisbane.

Eyre, T.J., Kelly, A.L., Neldner, V.J., Wilson, B.A., Ferguson, D.J., Laidlaw, M.J. and Franks, A.J. (2011a) *BioCondition: A Condition Assessment Framework for Terrestrial Biodiversity in Queensland. Assessment Manual. Version 2.1*. Department of Environment and Resource Management (DERM), Biodiversity and Ecosystem Sciences, Queensland Government, Brisbane.
<https://www.qld.gov.au/environment/plants-animals/biodiversity/biocondition/>

Eyre T.J., Ferguson D.J., Hourigan C.L., Smith G.C., Mathieson M.T., Kelly, A.L., Venz M.F. and Hogan, L.D. (2012). *Terrestrial Vertebrate Fauna Survey Assessment Guidelines for Queensland, August 2013*. Department of Science, Information Technology, Innovation and the Arts, Queensland Government, Brisbane.
<https://www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey/>

Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland (Neldner *et al.* 2012); available from

<https://www.qld.gov.au/environment/assets/documents/plants-animals/herbarium/herbarium-mapping-methodology.pdf> ; http://www.ehp.qld.gov.au/ecosystems/biodiversity/regional-ecosystems/regional_ecosystem_framework.html

Queensland environmental offsets framework. <http://www.qld.gov.au/environment/pollution/management/offsets/>

Queensland Resources Council 2013, *Queensland Resources and Energy Sector Code of Practice for Local Content*, Queensland Resources Council, Brisbane, viewed 18 June 2013, https://www.qrc.org.au/01_cms/details.asp?ID=3209

Appendix 2 Matters of national environmental significance

The project is a controlled action under the *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) (EPBC 2014/7241) and the Department of Environment and Heritage Protection (EHP) has approved an application to voluntarily prepare an environmental impact statement (EIS) under section 72 of the *Environment Protection Act 1994*.

The EIS will be prepared pursuant to the bilateral agreement between the Australian and Queensland governments for the purposes of the Australian Government's assessment under part 8 of the EPBC Act. The EIS must address potential impacts on the matters of national environmental significance (MNES) that were identified when the project was determined to be a controlled action.

The MNES section of the EIS must bring together assessments of impacts on MNES in other chapters (e.g. water resources, flora and fauna, cultural heritage) and produce a stand-alone document in a format suited for the assessment of impacts on MNES under the EPBC Act.

The relevant controlling provisions under the EPBC Act are:

- sections 12 and 15A of the EPBC Act (World Heritage properties)
- sections 15B and 15C of the EPBC Act (National Heritage places)
- sections 18 and 18A of the EPBC Act (listed threatened species and communities)
- sections 20 and 20A of the EPBC Act (listed migratory species)
- sections 24B and 24C of the EPBC Act (Great Barrier Reef Marine Park).

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

Predictions of the extent of threat (risk), impact and the benefits of any mitigation measures proposed, should be based on sound science and quantified where possible. All sources of information relied upon should be identified and an estimate of the reliability of predictions should be provided.

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

This section should include mapping of a scale suitable for identifying the distribution of relevant MNES and their habitat, both on the proposal site and in a regional context.

Introduction

Provide background to the project, including:

- a description of the action, including location and property description, as well as planning, construction, operational and decommissioning phases
- how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action
- a list of persons and agencies consulted during the preparation of the EIS
- the names, qualifications and experience of the persons involved in preparing the EIS, including sub-consultants and reviewers
- the environmental record of the proponent, including details of their environmental policy and planning framework and details of any proceedings under a Commonwealth, or state law for the protection of the environment against them
- a brief summary of social/economic impacts as a result of the project.

Impacts on listed world heritage properties and national heritage places

Where the project has the potential to impact on the Great Barrier Reef World Heritage Area (GBRWHA) and national heritage places, the EIS should provide:

- a description of the values of the GBRWHA and national heritage places that are likely to be impacted by the project, including but not restricted to the significant regional habitat for listed threatened and migratory marine species
- a description of the potential direct and indirect impacts on the values of each area, place, site or reserve, resulting from:
 - modification, destruction, fragmentation, isolation or disturbance of an important, sensitive or substantial area of habitat
 - a substantial change in water quality (including temperature) and hydrological regime which may adversely impact on biodiversity, ecological integrity, social amenity or human health
 - persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected
- a description of the impacts on other users of the area
- a discussion of the extent to which identified impacts can be forecast or predicted and managed
- a description of any mitigation measures proposed to reduce the impact on the values and environments of each area, place, site or reserve.

Impacts on listed threatened species and ecological communities

Identify EPBC Act-listed threatened species and ecological communities that could be affected, directly and indirectly and as a consequence of the proposal (including EPBC Act status, distribution, life history, habitats).

Consider and assess all potential impacts, both direct and indirect, to listed threatened species and ecological communities for which the project was declared a controlled action or that are found to be or may potentially be present in areas that may be impacted by the project. Refer to impacts on suitable habitat present irrespective of whether the species were detected in surveys. Conduct targeted surveys for listed threatened species and ecological communities in accordance with relevant departmental survey guidelines to identify the likely presence of listed threatened species and communities, and provide a high level of certainty of their presence or absence from the proposal site.

Describe and map, where necessary, the distribution, ecology, and habitat preferences of each listed threatened species and ecological community, including:

- all potential habitat for each species, irrespective of whether species/communities were detected in surveys
- habitat components important for each species such as breeding, foraging, nesting or roosting habitat
- the location and source of known records (including those from databases and all surveys previously conducted in the project area).

Discuss the relationship between individuals and populations/sub-populations of EPBC Act-listed threatened species and ecological communities on the proposed site and the regional context of threatened species and ecological communities.

Assess the impacts to the listed threatened species (including habitat) and ecological communities and any others that are found to be or may potentially be present in areas that may be impacted by the project, include evidence based justification for conclusions reached on whether or not a species/community is likely to be significantly impacted. Identify which component of the project is of relevance to each species or community or if the threat of impact relates to consequential actions, resulting from:

- a decrease in the size of a population or a long-term adverse effect on an ecological community
- reduction in the area of the species' occupancy or extent of occurrence of the ecological community
- fragmentation of an existing population or ecological community

- disturbance or destruction of habitat critical to the survival of the species or ecological community
- disruption of the breeding cycle of a population
- modification, destruction, removal, isolation or reduction of the availability or quality of habitat to the extent that the species is likely to decline
- modification or destruction of abiotic (non-living) factors (such as water, nutrients or soil) necessary for the ecological community's survival
- the introduction of invasive species that are harmful to the species or ecological community becoming established
- interference with the recovery of the species or ecological community
- an action that may be inconsistent with a recovery plan or threat abatement plan.

List of listed threatened species

The EIS must discuss the nature and scale of impacts associated with the proposed action for listed threatened species.

The EIS must discuss the nature and scale of impacts associated with all EPBC Act listed threatened species and ecological communities which are known or may possibly be present within the project site as well as areas adjacent to or in close vicinity of the project area which are likely to be directly and/or indirectly impacted by the project. This must include a discussion of the potential impacts to the Port Curtis area.

Impacts on listed migratory species

The EIS should provide a description of the EPBC Act listed migratory species, distribution, life history, habitats etc. likely to occur in the project study area defined as the area potentially impacted.

The EIS should consider and assess the impacts to the identified listed migratory species that may be impacted by the project. The EIS should identify which component of the project is of relevance to each species or if the threat of impact relates to consequential actions. Impacts may result from:

- the destruction, isolation or modification of habitat important to a migratory species
- the introduction of invasive species in an important habitat that would be harmful to a migratory species
- the disruption of the lifecycle (breeding, feeding, migration, or resting behaviour) of an ecologically important proportion of the population of a migratory species
- interference with the recovery of the species or ecological community
- actions which may be inconsistent with a recovery plan.

Any positive impacts should also be identified and evaluated.

A description of any mitigation measures proposed to reduce the impact on migratory species should be discussed.

List of listed migratory species

The EIS must discuss the nature and scale of impacts associated with the proposed action for listed migratory species.

The EIS must discuss the nature and scale of impacts associated with all EPBC Act listed migratory species which are known or may possibly be present within the project site as well as areas adjacent to or in close vicinity of the project area which are likely to be directly and/or indirectly impacted by the project. This must include a discussion of the potential impacts to the Port Curtis area.

Impacts on the Great Barrier Reef Marine Park

Where the project has the potential to impact on the Great Barrier Reef Marine Park Area (GBRMPA), the EIS should provide:

- a description of the values including the outstanding universal values (OUV) of the GBRMPA that are likely to be impacted by the project, including but not restricted to the significant regional habitat for listed threatened and migratory marine species.
- a description of the potential direct and indirect impacts on the values of each area, place, site or reserve, resulting from:
 - modification, destruction, fragmentation, isolation or disturbance of an important, OUV, sensitive or substantial area of habitat
 - a substantial change in water quality (including temperature) and hydrological regime which may adversely impact on biodiversity, ecological integrity, social amenity or human health
 - persistent organic chemicals, heavy metals, or other potentially harmful chemicals accumulating in the marine environment such that biodiversity, ecological integrity, social amenity or human health may be adversely affected
- a description of the impacts on other users of the area
- a discussion of the extent to which identified impacts can be forecast or predicted and managed
- a description of any mitigation measures proposed to reduce the impact on the values, including OUV, and environments of each area, place, site or reserve.

Avoidance, mitigation and offset measures

Describe any avoidance and mitigation measures proposed to reduce the impacts on the listed threatened species and ecological communities, migratory species, the Great Barrier Reef World Heritage Area, national heritage places and the Great Barrier Reef Marine Park and include the following elements:

- a description of proposed safeguards, avoidance and mitigation measures to deal with relevant impacts of the action including mitigation measures proposed to be taken by state governments, local governments or the proponent
- an assessment of the expected or predicted effectiveness of the mitigation measures
- an explanation of any statutory or policy basis for the mitigation measures, including a discussion on how the proposed approach is not inconsistent with relevant recovery plans and threat abatement plans for listed threatened species and communities.

Describe any proposed offsets for residual impacts to listed threatened species and ecological communities as a result of the proposed action.

Discuss proposed offsets with reference to the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* Environmental Offsets Policy, including the Offsets assessment guide. This discussion should include details of the:

- timing of procuring the proposed offset
- location, size, habitat quality and how the proposed offset will provide a net benefit for MNES where residual significant impacts are considered likely to occur
- tenure arrangements
- proposed management measures, including timeframes for delivery.

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