



PEMBROKE

Olive Downs Coking Coal Project
Draft Environmental Impact Statement

Attachment 1

**Olive Downs Coking Coal
Project Terms of Reference**

Terms of reference for an environmental impact statement:

Olive Downs Project

June 2017

The Department of State Development

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Department of State Development
PO Box 15009 City East, Queensland 4002.
1 William Street, Brisbane Qld 4000 (Australia)

Phone: 13QGOV (137468)
Fax: 07 3220 6465
Email: info@dsd.qld.gov.au
Web: www.statedevelopment.qld.gov.au

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Part A. About these terms of reference

1. Statutory basis

The Coordinator-General has declared the Olive Downs Project to be a ‘coordinated project for which an environmental impact statement (EIS) is required’ under section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (SDPWO Act). This declaration initiates the statutory environmental impact assessment procedure of Part 4 of the Act, which requires a proponent to prepare an EIS for the project.

These terms of reference (TOR) set out the matters the proponent must address in an EIS for the project and are approved by the Coordinator-General under section 30 of the SDPWO Act.

2. Accredited process for controlled actions under Commonwealth legislation

The EIS process has been accredited under the Bilateral Agreement for the assessment of the project under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), hence the EIS must state the controlling provisions for the project and describe the particular aspects of the environment that led to the controlled action decision.

The assessment of the controlling provisions, mitigation measures and any offsets for residual impacts must be described and illustrated in a stand-alone report in the EIS that fully addresses the matters relevant to the controlling provisions. Requirements for matters of national environmental significance (MNES) are set out on pages 9–14 of this TOR.

3. EIS guidelines

This TOR must be read in conjunction with *Preparing an environmental impact statement: Guideline for proponents*, which explains the following:

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

In addition, subject-specific guidelines are referenced throughout this TOR; refer to Appendix 1 for a list of these policies and guidelines.

4. More information

For information about the project or the EIS process conducted under the SDPWO Act, visit www.statedevelopment.qld.gov.au/cg

Part B. Content of the EIS

5. General approach

- 5.1 The objective of the EIS is to ensure that all relevant environmental, social and economic impacts of the project are identified and assessed, and to recommend mitigation measures to avoid and minimise adverse impacts. The EIS should demonstrate that the project is based on sound environmental principles and practices.
- 5.2 For the purposes of the EIS process, 'environment' is defined in Schedule 2 of the SDPWO Act and includes social and economic matters.
- 5.3 The detail at 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.
- 5.4 The EIS is to be consistent, and in accordance with, relevant policies, standards and guidelines in place that exist at the time of its delivery.

6. Mandatory requirements of an EIS

- 6.1 For all the relevant matters, the EIS must identify and describe the environmental values¹ that must be protected. Environmental values are specified in the *Environmental Protection Act 1994* (EP Act), the *Environmental Protection Regulation 2008* (EP Regulation), environmental protection policies (EPPs) and relevant guidelines.²
- 6.2 The assessment should cover both the short and long terms and state whether any relevant impacts are likely to be irreversible. The EIS should also discuss the likelihood for unknown or unpredictable impacts, and set out how management practices would account for unexpected outcomes.
- 6.3 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.
- 6.4 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. In general, the preferred hierarchy for managing likely adverse impacts is: (a) to avoid; (b) to minimise/mitigate; and (c) once (a) and (b) have been applied, to offset. Management of impacts should be tailored to the management hierarchy relevant to the particular Environmental Protection Policy for that value or matter. Where relevant, strategies should be described in the context of EHP 'model conditions'.

¹ Defined in section 125(l)(i)(A) of the EP Act.

² For example, the *Queensland Water Quality Guidelines* and the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (refer to Appendix 1 for details).

- 6.5 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.
- 6.6 Each matter assessed in the EIS (as described in sections 10 and 11 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.
- 6.7 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.
- 6.8 For unproven elements of a resource extraction or processing process, technology or activity, identify and describe any global leading practice environmental management, where available.
- 6.9 Demonstrate how the construction, operation, decommissioning and management post closure (to the extent known) of the project would meet all statutory and regulatory requirements of the State and that the intended outcomes are consistent with current state policies and guidelines.

7. Further requirements of an EIS

- 7.1 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 and for conditions to be prepared for later approvals under the *Planning Act 2016*, the *Water Act 2000*, the *Nature Conservation Act 1994* (NCA), *Vegetation Management Act 1999* (VMA), *Fisheries Act 1994*, *Land Act 1994*, *Forestry Act 1959*, *Stock Route Management Act 2002*, *Environmental Offsets Act 2014*, *Transport Infrastructure Act 1994*, the *Mineral Resources Act 1989* (MRA), the *EP Act*, the *Regional Planning Interests Act 2014* (RPI Act) and the *EPBC Act*.
- 7.2 The proponent must identify the scope of approvals sought through the EIS process.
- 7.3 To the extent of the information available, the assessment should endeavour to predict the *cumulative* impact³ 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 final EIS and the setting of conditions. The absence of a comprehensive cumulative impacts analysis need not be fatal to the project. The EIS should also outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis.
- 7.4 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 Cumulative impact is defined as 'combined impacts from all relevant sources (developments and other activities in the area)'.

- 7.5 Provide all geographical coordinates throughout the EIS in latitude and longitude against the Geocentric Datum of Australia 1994 (GDA94).
- 7.6 An EIS should also describe the expected benefits and opportunities associated with the project.
- 7.7 An appropriate public consultation program is essential to the impact assessment process. The proponent should consult with Local, State and Commonwealth government agencies, and with potentially affected local communities.
- 7.8 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.
- 7.9 Include, as an appendix, a public consultation report detailing how the public consultation plan was implemented, and the results.

8. Executive summary

- 8.1 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.

9. Introduction

- 9.1 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

- 9.2 Describe the proponent's experience, including:
- (a) the designated proponent's full name, postal address and ABN, if relevant (including details of any joint venture partners)
 - (b) the nature and extent of business activities
 - (c) experience
 - (d) environmental record, including a list of any breach of relevant environmental laws during the previous ten years
 - (e) the proponent's environmental, health, safety and community policies.

The environmental impact assessment process

- 9.3 Provide an outline of the environmental impact assessment process, including the role of the EIS in the Coordinator-General's decision making process. The information in this section is required to ensure readers are informed of the process to be followed and are aware of any opportunities for input and participation.
- 9.4 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.

Project approvals process

- 9.5 Describe the approvals, and the entities granting each approval, required to enable the project to be constructed and operated. Any environmentally relevant activities (ERA) to be conducted on site should be listed separately with the appropriate ERA number, activity name and required threshold. 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, stages, timing and opportunities for public comment.
- 9.6 Inform the reader of how the SDPWO Act, the *Planning Act 2016*, the *Water Act 2000*, *Vegetation Management Act 1999* (VMA), *Environmental Offsets Act 2014*, the *Mineral Resources Act 1989* (MRA), the *EP Act*, and the RPI Act interact, with reference to the project. Inform the reader how a properly made submission on the EIS relates to the development application processes under the *Planning Act 2016* and the EP Act and the water licencing process under the *Water Act* respectively. .
- 9.7 Describe the assessment process under the Bilateral Agreement between the Commonwealth and the State of Queensland under section 45 of the EPBC Act relating to Environmental Assessment.
- 9.8 The State Development Assessment Provisions (SDAP) prescribed in the *Planning Regulation 2016* sets out the matters of interest to the state for development assessment where the chief executive of the PA is the assessment manager for development applications.. If the proponent intends to satisfy the information requirements of future development assessment decisions under SDAP for any component of the project during this coordinated project EIS process, the material provided in accordance with sections 10–12 of this TOR should be sufficient to permit those assessments to be completed for that project component. Further information on SDAP requirements can be assessed from <http://dilgp.qld.gov.au/planning/development-assessment/state-development-assessment-provisions.html>
- 9.9 Similarly, the EIS will provide the information required under section 125 and 126A of the EP Act in support of the project's EA application.

10. Project description

Proposed development

- 10.1 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
 - the workforce numbers to be employed by the project during its various phases (including peak, direct workforce numbers in the estimations); where personnel would be accommodated and, where relevant, the likely recruitment and rostering arrangements to be adopted
 - rationale for the project

- (e) the nature and scale of project components and activities to be undertaken and whether each component of the project is a greenfield or brownfield site
- (f) the regional and local context of the project's footprint (with maps at suitable scales)
- (g) relationship to other coordinated projects and other major projects (of which the proponent should reasonably be aware)
- (h) the proposed construction staging and likely schedule of works including details of early works.

Site description

- 10.2 Provide real property descriptions of the project land and adjacent properties; any easements; any underlying resource tenures (including exploration permits and identification number of any resource activity lease for the project land that is subject to application), applications for mining leases and approved mining leases; restricted and reserve land; conservation tenures; overlying resource tenure such as forests; native title interests; native title claims; Indigenous land use agreements; land and infrastructure held by government owned corporations; and agricultural land uses identified in the Queensland Agricultural Land Audit.
- 10.3 All local government and state-controlled roads, private and government owned corporation energy, rail, air, and other infrastructure in the region and impacted by the project should be described and mapped.
- 10.4 The proximity of the project from rural premises, business precincts, and public facilities (e.g. schools, health facilities) should be described and mapped.
- 10.5 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.
- 10.6 Describe and map at a suitable scale in plan and cross-sections the geology and landforms, including catchments of the project area. Show geological structures such as faults, aquifers, and economic resources that could have an influence on, or be influenced by, the project's activities. Describe exploration history at the site, the targeted seams and Joint Ore Reserves Committee (JORC) resources and reserves (as appropriate). 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.
- 10.7 Describe the planning schemes, regional plans, state policies, government priorities for the project area.
- 10.8 Describe the findings of the agricultural land audit and any land identified as strategic cropping land or priority agricultural area for the project area.
- 10.9 Identify tourist destinations and sites used for recreation in and adjoining the product delivery routes.

Climate

- 10.10 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.

Proposed construction and operations

- 10.11 Provide the following information for the construction and operation stages of the project:
- (a) proposed infrastructure
 - (b) proposed vegetation clearing, top- and sub-soil removal and stockpiling
 - (c) project site access arrangements where access to the site is on tenure not held by the proponent
 - (d) dimensions of earth and rock works and excavations
 - (e) the proposed mining and processing methods, associated equipment and techniques including any new or expanded quarry and screening operations (e.g. from off-site locations) required to service the project, and the potential impact on extractive resource availability at the regional level
 - (f) the construction timetable, sequencing and staging plans (provide detailed plans, drawings and maps to illustrate these matters where relevant)
 - (g) proposed upgrades, realignments, relocation, deviation or restricted access to roads and other infrastructure including water, power and telecommunications
 - (h) all environmentally relevant activities on and off the mining lease, and all notifiable activities
 - (i) waste rock management and waste rock dump stability, and any potential impacts from sediment runoff and contaminant transport
 - (j) the type and capacity of high-impact plant and equipment utilised to construct and operate the project, their chemical and physical processes
 - (k) type, volume and rate of chemicals and hazardous materials to be used
 - (l) water storage requirements and volumes required during construction
 - (m) site drainage, erosion and stormwater management, flood protection and waste water management
 - (n) 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 sites or right of way, and intersections required with existing infrastructure (e.g. pipeline, rail, road, power, etc)
 - (o) provide a detailed progressive rehabilitation schedule and include maps at suitable scales showing the location of disturbance areas, relevant ERA infrastructure and associated disturbance areas and the sequence of mining and progressive rehabilitation (i.e. the method and timing of restoration of areas disturbed during construction),
 - (p) the proposed schedule of site decommissioning and submission of closure plans

- (q) environmental management measures included as part of the project design
 - (r) disturbance areas
 - (s) the type, amount and source of construction materials required for the project.
- 10.12 Identify the type, quantity, origin, routes, delivery modes, storage and laydown requirements for materials required during the pre-construction, construction and operation of the project for works:
- (a) at the mine site
 - (b) at the project component sites, to the degree it is required for subsequent approval processes
 - (c) for the product delivery route.

Infrastructure requirements

Objectives

The project should provide necessary infrastructure to service the development that:

- (a) maintains or benefits services to existing users
- (b) ensures any required works are compatible with existing infrastructure

- 10.13 Describe with concept and layout plans all infrastructure required to be constructed, upgraded, relocated and decommissioned for the construction and operation of the project, such as resource extraction areas, access roads including connections to public roads and proposed road/rail interfaces, bridges, conveyors, energy supply infrastructure all sewerage related infrastructure (including location and size of the sewage treatment plant, the sewage collection system, wet weather storage and any pipelines and waste disposal areas associated with the plant), telecommunications, stormwater, waste disposal and locations of any infrastructure easements.
- 10.14 Describe the timing of requirements for this infrastructure (starting with construction of the project) and detail the decommissioning schedule for all project related infrastructure..
- 10.15 Provide details of the alignment options assessed for the raw water supply pipeline, rail spur, and electricity transmission line, including justification for the preferred and final alignments chosen.
- 10.16 Concept and layout plans should also include existing infrastructure relevant to the project.

11. Assessment of project specific matters

- 11.1 This section sets out the scope of project specific matters that should be given detailed treatment in the EIS.
- 11.2 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.

Matters of national environmental significance

Background and context

- 11.3 The project was referred as four separate proposed actions under the EPBC Act. It is expected that the EIS will relate to all four proposed actions. Therefore, this section should provide a stand-alone description and detailed assessment of the impacts for each relevant controlling provision under the EPBC Act of each proposed action, inclusive of any avoidance, mitigation and offset measures.
- 11.4 The Commonwealth Minister for the Environment and Energy has determined the following controlling provisions apply for each proposed action under the EPBC Act:
- Olive Downs Project Mine Site and Access Road (EPBC 2017/7867):
- (a) listed threatened species and communities (sections 18 and 18A);
 - (b) listed migratory species (sections 20 and 20A); and
 - (c) a water resource, in relation to coal seam gas development and large coal mining development (sections 24D and 24E).
- Olive Downs Project Water Pipeline (EPBC 2017/7868):
- (a) listed threatened species and communities (sections 18 and 18A).
- Olive Downs Project Electricity Transmission Line (EPBC 2017/7869):
- (a) listed threatened species and communities (sections 18 and 18A).
- Olive Downs Project Rail Spur (EPBC 2017/7870):
- (a) listed threatened species and communities (sections 18 and 18A).
- 11.5 In accordance with Section 3.1 of Schedule 1 of the Bilateral Agreement, for each proposed action the EIS must:
- (a) assess all relevant impacts that the proposed action has, will have or is likely to have;
 - (b) provide enough information about the proposed action and its relevant impacts to allow the Commonwealth Minister for the Environment and Energy to make an informed decision whether or not to approve the action under Part 9 of the EPBC Act; and
 - (c) address the matters mentioned in Division 5.2 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth) (EPBC Regulations).
- 11.6 A cross-reference to the relevant section in the EIS that addresses each of the matters mentioned in Division 5.2 of the EPBC Regulations should be provided.
- 11.7 Consideration must be given to any relevant advice, policy statements and guidelines (available at www.environment.gov.au) including but not limited to:
- (a) *Matters of National Environmental Significance, Significant impact guidelines 1.1, Environment Protection and Biodiversity Conservation Act 1999*;
 - (b) *Significant impact guidelines 1.3: Coal seam gas and large coal mining developments—impacts on water resources*;
 - (c) *Information Guidelines for the Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals*;

- (d) *Environment Protection and Biodiversity Conservation Act 1999*
Environmental Offsets Policy; and
- (e) any approved conservation advice, recovery plans and threat abatement plans (as relevant) for listed threatened species, migratory species and ecological communities.

Assessment Requirements

- 11.8 The EIS must provide background to each proposed action and describe in detail all aspects of each proposed 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 any matter protected by each relevant controlling provision; 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 impacts on any matter protected by each relevant controlling provision.
- 11.9 The EIS must provide details on the current status of each proposed action as well as the consequences of not proceeding with each proposed action and the project as a whole.
- 11.10 To the extent reasonably practicable, the EIS must include a discussion of feasible alternatives for each proposed action in accordance with Schedule 4, section 2.01(g) of the EPBC Regulations. The short, medium and long-term advantages and disadvantages of the alternatives must be discussed.
- 11.11 Each proposed action should initially be assessed in its own right and address how each proposed action relates to the other proposed actions.
- 11.12 The EIS should include an assessment of the cumulative impacts, with respect to each controlling provision for each proposed action and all identified consequential actions related to each proposed action and all known developments (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 each proposed action.
- 11.13 With respect to each controlling provision for each proposed action, describe any avoidance measures proposed to reduce the impact on MNES and the anticipated result of proposed avoidance measures. Supporting evidence should be provided to demonstrate the appropriateness of avoidance measures proposed. Where the likely success of avoidance measures cannot be supported by evidence, identify contingencies in the event the avoidance is not successful.
- 11.14 With respect to each controlling provision for each proposed action, describe any mitigation measures proposed to reduce the impact on MNES and the anticipated result of proposed mitigation measures. Supporting evidence should be provided to demonstrate the appropriateness of mitigation measures proposed. Where the likely success of mitigation measures cannot be supported by evidence, identify contingencies in the event the mitigation is not successful.

11.15 With respect to each controlling provision for each proposed action, describe the residual significant impacts of each proposed action after all proposed avoidance and mitigation measures are taken into account and any compensatory measures proposed.

Listed threatened species and communities

11.16 For each proposed action the EIS must:

- (a) describe the relevant listed threatened species and ecological communities (including EPBC Act listing status, distribution, life history and habitat);
- (b) provide details of the scope, methodology, timing and effort of surveys for each proposed action (including areas outside of each proposed action area which may be impacted by each proposed action); and include details of:
 - (i) the application of best practice survey guidelines
 - (ii) how studies or surveys are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements;
- (c) describe and assess the impacts to listed threatened species and ecological communities identified below and any others that are found to be or may potentially be present in areas that may be impacted by each proposed action in accordance with the *Matters of National Environmental Significance, Significant impact guidelines 1.1, Environment Protection and Biodiversity Conservation Act 1999*;
- (d) identify which aspect of each proposed action is of relevance to each listed threatened species or ecological community or if the threat of impact relates to consequential actions; and
- (e) where relevant, have regard to any approved conservation advice.

11.17 Where relevant, the EIS must demonstrate that each proposed action will not be inconsistent with:

- (a) Australia's obligations under:
 - (i) the Biodiversity Convention;
 - (ii) the Convention on Conservation of Nature in the South Pacific (Apia Convention);
 - (iii) the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and
- (b) a recovery plan or threat abatement plan.

List of potential listed threatened species

11.18 The EIS must address impacts on the following listed threatened species for each proposed action:

- (a) Red Goshawk (*Erythrotriorchis radiatus*) – vulnerable;
- (b) Australian Painted Snipe (*Rostratula australis*) – endangered;
- (c) Curlew Sandpiper (*Calidris ferruginea*) – critically endangered;
- (d) Squatter Pigeon (southern) (*Geophaps scripta scripta*) – vulnerable;
- (e) Painted Honeyeater (*Grantiella picta*) – vulnerable;

- (f) Star Finch (eastern) (*Neochmia ruficauda ruficauda*) – endangered;
- (g) Black-throated Finch (southern) (*Poephila cincta cincta*) – endangered;
- (h) Northern Quoll (*Dasyurus hallucatus*) – endangered;
- (i) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus* (combined populations of Qld, NSW and the ACT)) – vulnerable;
- (j) Greater Glider (*Petauroides volans*) – vulnerable;
- (k) Grey-headed Flying-fox (*Pteropus poliocephalus*) – vulnerable;
- (l) Ghost Bat (*Macroderma gigas*) – vulnerable;
- (m) Corben's Long-eared Bat (*Nyctophilus corbeni*) – vulnerable;
- (n) Southern Snapping Turtle (*Elseya albagula*) – critically endangered;
- (o) Fitzroy River Turtle (*Rheodytes leukops*) – vulnerable;
- (p) Yakka Skink (*Egernia rugosa*) – vulnerable;
- (q) Allan's Lerista (*Lerista allanae*) – endangered;
- (r) Ornamental Snake (*Denisonia maculata*) – vulnerable;
- (s) Dunmall's Snake (*Furina dunmalli*) – vulnerable;
- (t) *Cycas ophiolitica* – endangered;
- (u) King Blue-grass (*Dichanthium queenslandicum*) – endangered;
- (v) Bluegrass (*Dichanthium setosum*) – vulnerable;
- (w) Black Ironbox (*Eucalyptus raveretiana*) – vulnerable; and
- (x) Quassia (*Samadera bidwillii*) – vulnerable.

List of potential listed threatened ecological communities

11.19 The EIS must address impacts on the following listed threatened ecological communities for each proposed action:

- (a) Brigalow (*Acacia harpophylla* dominant and co-dominant) – endangered;
- (b) Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin – endangered; and
- (c) Semi-evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions – endangered.

Listed migratory species

11.20 For the proposed mine site and access road (EPBC 2017/7867) the EIS must:

- (a) describe the listed migratory species identified below (including distribution, life history and habitat);
- (b) provide details of the scope, methodology, timing and effort of surveys for the proposed action (including areas outside of the proposed action area which may be impacted by the proposed action); and include details of:
 - (i) the application of best practice survey guidelines;
 - (ii) how studies or surveys are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements;

- (c) describe and assess the impacts to the listed migratory species identified below and any others that are found to be or may potentially be present in areas that may be impacted by the proposed action in accordance with the *Matters of National Environmental Significance, Significant impact guidelines 1.1, Environment Protection and Biodiversity Conservation Act 1999*; and
- (d) identify which aspect of the proposed action is of relevance to each species or if the threat of impact relates to consequential actions.

11.21 Where relevant, demonstrate that the proposed action will not be inconsistent with:

- (a) Australia's obligations under:
 - (i) the Bonn Convention;
 - (ii) CAMBA;
 - (iii) JAMBA; and
 - (iv) an international agreement approved under subsection 209(4) of the EPBC Act.

List of potential listed migratory species

11.22 The EIS must address impacts on the following migratory species:

- (a) Glossy Ibis (*Plegadis falcinellus*);
- (b) Caspian Tern (*Hydroprogne caspia*);
- (c) Fork-tailed Swift (*Apus pacificus*);
- (d) Oriental Cuckoo (*Cuculus optatus*);
- (e) White-throated Needletail (*Hirundapus caudacutus*);
- (f) Black-faced Monarch (*Monarcha melanopsis*);
- (g) Yellow Wagtail (*Motacilla flava*);
- (h) Satin Flycatcher (*Myiagra cyanoleuca*);
- (i) Curlew Sandpiper (*Calidris ferruginea*);
- (j) Latham's Snipe (*Gallinago hardwickii*);
- (k) Osprey (*Pandion haliaetus*); and
- (l) Common Greenshank (*Tringa nebularia*).

A water resource, in relation to coal seam gas development and large coal mining development

11.23 The National Partnership Agreement on Coal Seam Gas and Large Coal Mining Development, to which Queensland is a signatory, specifies that all coal seam gas and large coal mining proposals that are likely to have a significant impact on water resources are to be referred to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) for advice.

11.24 In relation to the proposed mine site and access road (EPBC 2017/7867), the EIS must provide details on the current state of groundwater and surface water in the region as well as any use of these resources.

11.25 The EIS must describe and assess the impacts to water resources giving consideration to the *Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments – impacts on water resources*.

- 11.26 The EIS must address the information requirements contained in the *Information Guidelines for the Independent Expert Scientific Committee advice on coal seam gas and large coal mining development proposals* and provide a cross-reference table to identify where each component of the guidelines has been addressed.

Offsets

- 11.27 The EIS must describe the residual impacts of each proposed action for each relevant matter protected by the EPBC Act, after all proposed avoidance and mitigation measures are taken into account.
- 11.28 The EIS must identify whether the residual impacts are significant with reference to the *Matters of National Environmental Significance, Significant impact guidelines 1.1, Environment Protection and Biodiversity Conservation Act 1999*.
- 11.29 If those residual impacts are significant the EIS must propose offsets for relevant matters protected by the EPBC Act consistent with the *Environment Protection and Biodiversity Conservation Act 1999, Environmental Offsets Policy*.

Assumptions and/or Predictions

- 11.30 If the EIS utilises predictions of the extent of threat (risk), impact and/or any benefit of any mitigation measures proposed, this must be based on sound science and quantified where possible.
- 11.31 The EIS must reference all sources of information relied upon and an estimate of the reliability of predictions must be provided.
- 11.32 Any positive impacts may also be identified and evaluated.
- 11.33 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, provides sufficient confidence in predictions that well-informed decisions can be made.

Conclusion

- 11.34 The EIS must include an overall conclusion for each proposed action as to the environmental acceptability of the proposed action on each relevant matter protected by the EPBC Act, including:
- (a) a discussion on the consideration with 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.

Other Required Information

- 11.35 The EIS must 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 proposing to take the action; and
 - (b) for an action for which a person has applied for a permit, the person making the application.
- 11.36 If the person proposing to take the action is a corporation—details of the corporation’s environmental policy and planning framework must also be included.
- 11.37 The economic and social impacts of each proposed action, both positive and negative, must be analysed, including but not limited to:
- (a) the economic and social impacts at the local, regional and national levels for each proposed action and the project as a whole
 - (i) further to the economic and social impacts for the State’s considerations (detailed at section 11.74-11.90 of this document), this may include projected economic costs and benefits of each proposed action, including the basis for their estimation through cost/benefit analysis or similar studies;
 - (b) details of the relevant cost and benefits of alternatives to each of the proposed actions
 - (ii) further to the economic and social impacts for the State’s considerations (detailed at section 11.74-11.90 of this document), this may include employment and other opportunities expected to be generated by each proposed action (including construction and operational phases) and the project as a whole;
 - (c) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views
 - (iii) further to the economic and social impacts for the State’s considerations (detailed at section 11.74-11.90 of this document), this may include:
 - (A) details of any public consultation activities undertaken, and their outcomes; and
 - (B) details of any consultation with Indigenous stakeholders.

Land, flora and fauna

Objectives and performance outcomes

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

- (a) activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna
- (b) 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
- (c) location for the activity on a site protects all environmental values relevant to adjacent sensitive use
- (d) 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, Part 3, 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—land use

- 11.38 The assessment of impacts on land, flora and fauna will be in accordance with DEHP application requirements for activities with impacts to land.
- 11.39 Discuss 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:
- (a) landscape (including visual amenity), designated sites, soils, contamination, land suitability and land uses in and around the project area, referring to regional plans and local government planning schemes
 - (b) the topography, geology, geomorphology of the project sites and adjoining areas
 - (c) the geological properties that could impact upon ground stability
 - (d) agricultural land considered as a priority agricultural area and/or strategic cropping land, and any other matters identified in the RPI Act and Regulation to that Act.
 - (e) any existing mining, petroleum, geothermal and greenhouse gas storage tenures underlying or adjacent to the project, and any to be applied for as part of this project and the potential for resource sterilisation
 - (f) any infrastructure proposed to be located within, or which may have impacts on, the Stock Route Network.
- 11.40 If the project may impact on:
- (a) Living areas in regional communities
 - (b) High-quality agricultural areas
 - (c) Strategic cropping land, or
 - (d) Regionally important environmental areas,

as defined in the RPI Act, provide the studies and approach to addressing the requirements of that Act. Specifically, identify any RPI Act requirements that are not being addressed in the EIS process.

- 11.41 If the proposed development is located within a statutory regional plan, address the policies about matters of State interest that are contained within the regional plans.
- 11.42 For surface mines and projects with activities that disturb the land surface, show how the land form during and post mining will be stable and non-eroding over time (describe how current technologies will be applied).
- 11.43 Detail any known or potential sources of contaminated land. Describe how any proposed land use may result in land becoming contaminated, how contaminated land will be managed during the life of the project and provide a submission schedule of a Site Management Plan for post-closure management in accordance with the EHP EIS information guideline – Contaminated land.
- 11.44 Identify the current tenure of all land within the project area, including freehold tenure, mining tenures, conservation tenures, state and Commonwealth tenures, and traditional owner access to land determinations. Identify land on which native title has been extinguished, land the subject of native title claims and approved Indigenous Land Use Agreements.
- 11.45 Identify 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.

Information requirements—flora and fauna

- 11.46 Describe the likely impacts on the biodiversity and natural environmental values of affected areas arising from the construction, operation and eventual decommissioning of the project (where known) in accordance with EHP's EIS information guidelines relevant to terrestrial and aquatic ecology.
- 11.47 Take into account any proposed avoidance and/or mitigation measures. The assessment should include, but not be limited to, the following key elements:
 - (a) matters of state environmental significance and national environmental significance
 - (b) terrestrial and aquatic ecosystems (including groundwater-dependent ecosystems) and their interaction
 - (c) biological diversity including listed flora and fauna species and regional ecosystems
 - (d) the existing integrity of ecological processes, including habitats of threatened, near-threatened or special least-concern species
 - (e) the integrity of landscapes and places, including wilderness and similar natural places
 - (f) 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*⁴ (VMA) and the *Fisheries Act 1994*

⁴ This is notwithstanding that the *Vegetation Management Act 1999* does not apply to mining projects. Refer also to www.nrm.qld.gov.au/vegetation/index.html

- (g) 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.
- 11.48 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.
- 11.49 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.
- 11.50 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 progress and adjust practices if necessary to ensure success over time.
- 11.51 Describe how the achievement of the rehabilitation objectives would be monitored and audited, and how corrective actions would be managed.
- 11.52 Proposals for the rehabilitation of disturbed areas should incorporate, where appropriate, provision of nest hollows, watering points and ground litter.

Offsets

- 11.53 The EIS should identify whether the project will result in a significant residual impact on matters of State environmental significance (MSES) with reference to the *Queensland Environmental Offsets Policy, Significant Residual Impact Guideline 2014*.
- 11.54 For staged offsets, the full extent of potential impacts on prescribed environmental matters from the entire proposal needs to be taken into account as part of the significant residual impact test.
- 11.55 The proposed offsets should be in line with the requirements set out in the *Queensland Environmental Offsets Policy (Version 1.2) 2016*.

Information requirements—rehabilitation

- 11.56 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.
- 11.57 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. The goals and timing of the progressive rehabilitation strategy are to be presented in a table that details milestones that will be met during progressive rehabilitation of the project site and how completion requirements would be measured and audited throughout the life of the project.
- 11.58 Describe and illustrate the proposed method of rehabilitating any voids including details of how the rehabilitation hierarchy as per the EHP Guideline has been

considered in the proposed rehabilitation method. This section should also describe where any final voids 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.

- 11.59 Describe for each domain the overarching rehabilitation goal, rehabilitation requirements, rehabilitation objectives, success indicators and performance and rehabilitation completion criteria that would be used to measure progress and completion for the project. Refer to Rehabilitation requirements for mining resources activities guideline (EHP, 2014).

Notwithstanding that management techniques may improve over the life of the project and that legislative requirements may change, the EIS needs to give confidence that all potential high-impact elements of the project (e.g. spoil dumps, voids, including any final void, tailings and water management dams, creek diversions and re-instatements if relevant, any disturbed area within the project site etc.) are capable of being managed and rehabilitated to achieve acceptable land use capabilities/suitability, to be safe, stable, non-polluting and self-sustaining and to prevent upstream and downstream surface and groundwater contamination.

- 11.60 Describe the topsoil resource on site and how topsoil storage will be quantitatively and qualitatively managed for the life of the project as per the EIS Guideline - Rehabilitation (ESR/2016/1975).

Water quality

Objective and performance outcomes

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

- (a) protects the environmental values of waters
- (b) protects the environmental values of wetlands
- (c) protects the environmental values of groundwater and any associated surface ecological systems.

The performance outcomes corresponding to this objective are in Schedule 5, Part 3, 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

- 11.61 The assessment of impacts on water quality will be in accordance with DEHP application requirements for activities with impacts to water (Guideline ESR/2015/1837).
- 11.62 Detail the chemical and physical characteristics of surface waters and groundwater within the area that may be affected by the project in accordance with Department of Environment and Heritage Protection's TOR guideline – Water.
- 11.63 In accordance with section 126A of the *Environmental Protection Act 1994* state how any proposed exercise of underground water rights for the life of the project

would be carried out on site and describe the aquifers affected or likely to be affected.

- 11.64 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.
- 11.65 Demonstrate how the implementation of mitigation strategies would mitigate significant impacts of water discharges on the receiving environment. Information should be supported with references to relevant legislation, policies, guidelines and modelling.
- 11.66 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed.

Water resources

Objectives

The construction, operation and decommissioning 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 to 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) volumes and quality of groundwater are maintained or alternate water supply is provided and current lawful users of water (such as entitlement holders and stock and domestic users) and other beneficial uses of water (such as surface water users, spring flows and groundwater-dependent ecosystems) are not adversely impacted by the development.

Information requirements

- 11.67 Describe the quality, quantity and significance of groundwater in the project area and any surrounding area potentially affected by the project's activities, in accordance with Department of Environment and Heritage Protection's TOR guideline – Water.
- 11.68 Provide details of any proposed impoundment, extraction (i.e. volume and rate), discharge, injection, use or loss of surface water or groundwater. Identify any approval or allocation that would be needed under the *Water Act 2000*.
- 11.69 Detail any significant diversion or interception of overland flow including an assessment of impacts in accordance with the DNRM Guideline on Watercourse Diversions and include the consideration of alternatives. Include maps of suitable scale showing the location of diversions and other water-related infrastructure in relation to mining infrastructure.

- 11.70 Describe the options for supplying water to the project, and assess any potential consequential impacts in relation to the objectives of the Water Plan (Fitzroy Basin) 2011 and any resource operations plan that may apply.
- 11.71 Identify any quantitative standards and indicators which will be used to describe the ecological values and health of surface water environments.
- 11.72 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 including to the post-decommissioning phase. The models should also 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:
- (a) changes in flow regimes from diversions, water take and discharges
 - (b) alterations to riparian vegetation and bank and channel morphology
 - (c) direct and indirect impacts arising from the development.
- 11.73 Describe the groundwater impact of water evaporation from mined out areas and its impact on local and regional groundwater, including long term equilibrium rates of groundwater losses through pit evaporation and equilibrium contaminant and salt transport rates from the pit into groundwater. List the primary contaminants mobilised. The groundwater model should be peer reviewed.
- 11.74 Provide details of the management strategies for mine-affected water for the life of the project to demonstrate minimisation of any impacts to land and waters, in particular off-site.

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 in Schedule 5, Part 3, 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

- 11.75 The assessment of impacts on air from all components of the project (i.e. on-mine site and off-mine site) will be in accordance with DEHP application requirements for activities with impacts to air (Guideline ESR/2015/1840) and the DEHP EIS Guideline – Air.
- 11.76 Fully describe the characteristics of the contaminants or materials released when carrying out the activity. Emissions during construction, commissioning, upset conditions, operation and closure should be fully described. 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:

- (a) address residual impacts on the environmental values (including appropriate indicators and air quality objectives) of the air receiving environment, with reference to sensitive receptors,⁵ 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)).
- (b) 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).
- (c) 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).

- 11.77 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.
- 11.78 For human health, describe what legislation, policy and guidelines would need to be adhered to.
- 11.79 Describe how the achievement of the objectives would be monitored, audited and reported, and how corrective actions would be managed.

Social and economic

Objectives

The construction and operation of the project should aim to:

- (a) avoid or mitigate/manage adverse social impacts arising from the project
- (b) capitalise on opportunities potentially available for local industries and communities
- (c) create a net economic benefit to the location, region and state.

Information requirements – social

- 11.80 The EIS is to be consistent, and in accordance with, relevant policies, standards and guidelines in place that exist at the time of its delivery.
- 11.81 Conduct a social impact assessment (SIA) in accordance with the Coordinator-General's *Social impact assessment guideline* (July 2013) and the Coordinator-

⁵ For example, the locations of existing residences, places of work, schools, etc., agricultural or ecologically significant areas/species that could be impacted.

General's *Social impact assessment guideline (draft)* (October, 2016) or the guideline in place at the time of delivery of the SIA.

The SIA should be developed in consultation with the Coordinated Project Delivery Division in the Office of the Coordinator-General (OCG), Department of State Development, and describe the likely social impacts (positive and negative) on affected communities. The proposed mitigation measures are to be discussed.

Should the Strong and Sustainable Resource Communities Bill 2016 (SSRC Bill) be passed, the proponent must meet all requirements of the legislation that apply to the project.

Matters to be considered in the SIA are detailed in the following sections.

11.82 The SIA should include:

- (a) a profile of key stakeholders
- (b) a social baseline study of potentially impacted communities within the SIA study area
- (c) an overview of state government legislation and policies and priorities which complement the mitigation measures for the project's social impacts
- (d) an explanation of sources used to gather information and analysis methods used. Discuss rationale for both primary and secondary data
- (e) a description of how the potentially impacted communities and affected stakeholders/other interested were engaged and consulted with during the development of the SIA
- (f) identification of potential social impacts and their likely significance, including duration
- (g) the proponent's proposed enhancement and mitigation/management measures
- (h) details of the proponent's proposed monitoring and reporting framework.

Social impact assessment study area

11.83 Define the project's SIA study area (including the local, district, regional and state level as relevant), taking into account the:

- (a) potential for social impacts to occur
- (b) location of other relevant projects (existing or proposed)
- (c) location and types of physical and social infrastructure, settlements and land-use patterns
- (d) social values that might be affected by the project including integrity of social conditions, liveability, social harmony and wellbeing and sense of community
- (e) Indigenous social and cultural characteristics, such as native title rights and interests, and cultural heritage.

Social Baseline Study

11.84 Undertake a targeted baseline study of the people residing within the project's SIA study area. This will provide a benchmark against which to identify the project's social issues, potential negative and positive social impacts, and the mitigation/management plans to address these impacts. The social baseline study

should be based on qualitative, quantitative and participatory methods. It should be supplemented by community engagement processes and primary data collection, and should reference relevant data contained in local and state government publications, reports, plans, guidelines and documentation, including regional and community plans.

Community Engagement

- 11.85 The baseline study, assessment of potential social impacts and development of appropriate mitigation measures and management plans should be informed by an inclusive and collaborative community and stakeholder engagement process. The engagement should commence at an early stage of the EIS process, and should include consultation with a broad range of stakeholder groups including affected landholders, local residents, community groups, Traditional Owner / Aboriginal and Torres Strait Islander representatives, state and local government agencies, non-government organisations, and traditionally-underrepresented stakeholders (vulnerable groups, women, people with a disability and Indigenous people).
- 11.86 The community and stakeholder engagement process should be adequately described and documented in the EIS report. This should include details such as stakeholders consulted and how and when they were consulted, principles and processes adopted, overview of the consultation program and key events, stakeholder feedback and issues raised (including the means by which these have been or will be addressed), and details of any negotiations or agreements required for impact mitigation and management.

Potential impacts and mitigation – social

Impact assessment

- 11.87 Assess and describe the type, level and significance of the project's social impacts (both negative and positive), based on the outcomes of the community engagement, social baseline study and impact analysis processes. This should include sufficient data to enable affected local and state authorities to make informed decisions about the project's effects. The potential social impacts will be identified by considering the potential changes to key aspects included in the social baseline study as a result of the project.
- 11.88 Impact assessment should include an assessment of the potential scope and significance of impacts at the local and regional level, considering factors such as population and demographic changes, workforce, lifestyles and amenity, community values, housing, local and regional planning outcomes, social infrastructure, and the health and social/cultural wellbeing of families and communities.
- 11.89 The impact assessment should also evaluate and discuss the potential cumulative social impacts resulting from the proposed project in combination with other existing or projects in advanced planning stages within the SIA study area. Key issues assessed should include:
- (a) population
 - (b) workforce (construction and operation)
 - (c) workforce accommodation

- (d) local and regional housing markets
- (e) use of and access to community infrastructure, services and facilities (including social and health services and facilities)
- (f) any existing legacy issue(s) or cumulative impact(s) which is/are not attributed to the present project proposal or advanced planned projects.

11.90 The impact assessment should include:

- (a) the impacts identified by the SIA process
- (b) impacted stakeholders
- (c) impacts, mitigation and management measures timing/timeframes
- (d) description of the mitigation and management measures
- (e) defined outcomes, and the performance indicators and targets to achieve the outcomes
- (f) monitoring and reporting framework
- (g) residual impacts (after mitigation/management) and how these will be addressed.

Management plans

11.91 Management plans for the following are to be provided as part of the SIA:

- (a) community and stakeholder engagement
- (b) workforce management
- (c) housing and accommodation
- (d) local business and industry content
- (e) health and community wellbeing.

Information requirements – economic

Impact assessment

11.92 Assess the economic impacts of the project and identify measures to manage any negative impacts and capture the economic opportunities generated by the project. The economic impact assessment (EIA) should be consistent with the Coordinator-General's *Economic impact assessment guideline*⁶ or the guideline in place at the time of delivery of the EIS.

11.93 The EIA should include:

- (a) a description of the project
- (b) the 'base case' local and regional economic environment without the project
- (c) a summary of the predicted key economic impacts, measured against the 'base case'
- (d) an impact management strategy to manage economic impacts and capitalise on economic opportunities, with consideration given to an adaptive

⁶ Coordinator-General (2017), *Economic impact assessment guideline*.
Brisbane: Office of the Coordinator-General.

management approach to adjust measures to changing economic circumstances

- 11.94 The EIA must use standardised methodologies and information and make all assumptions transparent. The EIS must:
- (a) use the best current data available
 - (b) use standard and consistent terms and methodologies at all stages of the project
 - (c) cover the full life-cycle of the project
 - (d) specify the modelling methodologies used
 - (e) adopt an appropriate discount rate for costs and benefits occurring in the future
 - (f) document all key assumptions and their rationale
 - (g) explain the methods used to gather information
 - (h) describe how the key impacted stakeholders and communities were consulted and the data they provided
 - (i) express monetary values in Australian dollars adjusted to a common date
 - (j) use a risk management framework to focus on the impacts with the highest probability and consequential impacts
 - (k) consider cumulative impacts of other developments in the region, where feasible
 - (l) undertake the EIS as an integral component of the EIS, together with the social and environmental impact assessments for the project.
- 11.95 The specific consideration of regional economic impacts must also provide an overview of:
- (a) the key stakeholders and communities of interest
 - (b) the local, regional, state and national economies of interest
 - (c) local business and industry content opportunities
 - (d) source locations of employees and contractors
 - (e) cost of living pressures such as impacts on housing supply and demand and household goods and services
 - (f) demands for other essential services and facilities
 - (g) expected timing and geographic distribution of impacts
 - (h) any relevant positive and negative externalities.
- 11.96 Where possible, impact modelling should also describe and quantify the following:
- (a) capital and operational expenditure
 - (b) project revenues
 - (c) direct impacts on gross regional product and gross state product
 - (d) any relevant royalties, taxes and duties
 - (e) any relevant site remediation costs
 - (f) source of goods and services, Queensland, interstate and overseas

- (g) workforce and labour market impacts, including effects on wages and local labour supply and demand
- (h) direct and indirect full-time equivalent job numbers at each phase of construction and operation.

Transport

Objectives

The construction and operation of the project should aim to:

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

Information requirements

- 11.97 Proponents should make appropriate modal choices to ensure transport efficiency and minimise impacts on the community. 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.
- 11.98 Present the transport assessment in separate sections for each project-affected mode (road, rail and air) 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).
- 11.99 Include details of the adopted assessment methodology:
 - (a) for impacts on roads: the road impact assessment report in accordance with the *Guidelines for Assessment of Road Impacts of Development*
 - (b) for impacts on rail level crossings: the Australian Level Crossing Assessment Model
- 11.100 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), should consider those authorities' works program and forward planning, and be in accordance with the relevant transport authorities' methodologies, guidelines and design manuals.

Hazards and community safety

Objectives

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

- (a) the risk of, and the adverse impacts from, natural and man-made hazards are avoided, minimised or managed and mitigated to protect people and property
- (b) the community's resilience to natural hazards is enhanced
- (c) 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

- 11.101 Describe the potential risks to public safety, 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, storm tide inundation, flooding, bushfire) and implications related to climate change
 - (d) how the project may potentially affect hazards away from the project site (e.g. changing flooding characteristics).
- 11.102 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.
- 11.103 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.
- 11.104 Outline any consultation undertaken with the relevant emergency management authorities, including the Local Disaster Management Group.

Biosecurity

Objective

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

- (a) the spread of weeds and pest animals and vector agents impacts are/is minimised
- (b) existing weeds and pests are controlled.

Information requirements

- 11.105 Propose detailed measures to control and limit the spread of restricted matters including noxious fish, invasive plants and invasive animals on the project site and adjacent areas as per Schedule 2 of the *Biosecurity Regulation 2016*, and any relevant local government area Biosecurity Plans.
- 11.106 Provide information relating to the distribution and abundance of invasive plants which are considered to be Weeds of National Significance (WoNS) on the project sites.
- 11.107 Provide details of any proposed vertebrate pest and weed control programs to be implemented by the project.

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

- 11.108 Describe current flood risk for a range of 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 and be affected by floods. Flood modelling should consider all infrastructure and disturbance areas associated with the project including levees, roads and linear infrastructure and all proposed measures to avoid or minimise impacts.
- 11.109 List and describe all dams and levees proposed or existing on the project site and undertake an assessment to determine the consequence category of each dam or levee assessed (low, significant, or high), consistent with the criteria in the EHP *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*. Illustrate how any regulated structure on site would be managed during periods of high incidental rainfall and/or flooding on site so that any potential impacts to land or water are minimised.

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 this objective are in in Schedule 5, Part 3, 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

- 11.110 The assessment of impacts on noise and vibration will be in accordance with DEHP Application Requirements for Activities with noise impacts (Guideline ESR/2015/1838).
- 11.111 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.
- 11.112 Predict the impacts of the noise emissions from the activity on the environmental values of the receiving environment, with reference to sensitive receptors, 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:
- (a) activity's consistency with the objectives
 - (b) cumulative impact of the noise with other known emissions of noise associated with existing development and possible future development (as described by approved plans)
 - (c) potential impacts of any low-frequency (<200 Hz) noise emissions.
- 11.113 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.
- 11.114 Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed.

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 this objective are in in Schedule 5, Part 3, 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

- 11.115 The assessment of impacts on waste will be in accordance with DEHP application requirements for activities with waste impacts (Guideline ESR/2015/1836), impacts to land (Guideline ESR/2015/1839) and impacts to water (Guideline ESR/2015/1837).

- 11.116 Describe all the expected significant waste streams⁷ from the proposed project activities (typically these would include waste rock, tailings and coarse rejects from mining and refining projects, sewage effluent, chemical and fuel spillages, and general and any regulated waste such as sewage screenings, sewage grit and sewage biosolids), during the construction, operational and decommissioning phases of the project.
- 11.117 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.
- 11.118 Define and describe the objectives and practical measures for protecting or enhancing environmental values from impacts by wastes.
- 11.119 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.
- 11.120 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.
- 11.121 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.
- 11.122 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.

Cultural heritage

Objective

The construction and operation of the project should aim to ensure that all reasonable and practicable measures to ensure the project does not harm Aboriginal cultural heritage are carried out, and the nature and scale of the project does not compromise the cultural heritage significance of a heritage place or heritage area.

Information requirements

- 11.123 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. The EIS should provide details of the Cultural Heritage Management Plan, or plans, and any associated agreements that have been developed or reached or steps taken up to that point to develop or reach such a plan or agreement.
- 11.124 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

⁷ Waste includes overburden, tailings and any materials (liquid, solid or gaseous) generated by the project that is not product.

appropriately qualified cultural heritage practitioner. If Heritage Act requirements are triggered, provide strategies to mitigate and manage any negative impacts on non-Indigenous cultural heritage values and enhance any positive impacts.

The non-Indigenous historical heritage impact assessment should also separately confirm if any known family grave sites would be impacted by the project works and provide strategies to mitigate and manage any negative impacts on the historical family grave sites and enhance any positive impacts. Any discoveries of important archaeological artefacts must be reported to the Department of Environment and Heritage Protection (EHP) in accordance with the requirements of the Queensland Heritage Act 1992 (see <https://www.qld.gov.au/environment/land/heritage/archaeology/discoveries/>).

12. Appendices to the EIS

- 12.1 Appendices should provide the complete technical evidence used to develop assertions and findings in the main text of the EIS.
- 12.2 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.
- 12.3 Include a table listing the section of the EIS where each requirement of the TOR is addressed.
- 12.4 Include a glossary of terms and a list of acronyms and abbreviations.

Part B. Acronyms and abbreviations

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

Acronym/abbreviation	Definition
AHD	Australian Height Datum
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
MNES	matters of national environmental significance (under the EPBC Act)
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i>
TOR	terms of reference
VMA	<i>Vegetation Management Act 1999</i>

Appendix 1. Policies and guidelines

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The Coordinator-General
PO Box 15517, City East Qld 4002
tel 13 QGOV (13 74 68)
info@dss.qld.gov.au
www.statedevelopment.qld.gov.au