

# Draft terms of reference

*Environmental Protection Act 1994*

## **Draft terms of reference for an environmental impact statement under the *Environmental Protection Act 1994***

*Kestrel West Mine Extension Project  
Kestrel Coal Resources Pty Ltd  
June 2024*



**Queensland  
Government**

DRAFT

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# 1. Purpose of the draft TOR

## Document introduction

- 1.1 This document is the draft terms of reference (TOR) for the Kestrel West Mine Extension Project (herein referred to as 'the project') proposed by Kestrel Coal Resources Pty Ltd being assessed under the environmental impact statement (EIS) process in chapter 3, part 1, of the *Environmental Protection Act 1994* (EP Act). It describes the scope and content that the EIS must include to allow the purposes of the EIS and EIS process, as defined in the EP Act, to be achieved for the project (section 40 of the EP Act).

### ***EIS purpose and process***

- 1.2 The purposes of an EIS and the EIS process are:
- (a) to assess the potential adverse and beneficial environmental, economic and social impacts of the project
  - (b) to assess management, monitoring, planning and other measures proposed to minimise any adverse environmental impacts of the project
  - (c) to consider feasible alternative ways to carry out the project
  - (d) to give enough information to the proponent, Commonwealth and State authorities and the public to assess the project and for the proponent to prepare an environmental management plan for the project
  - (e) to help the department decide an environmental authority (EA) application for which the EIS is required
  - (f) to give information to other Commonwealth and State authorities to help them make informed decisions
  - (g) to meet any assessment requirements under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) for a *controlled action*
  - (h) to allow the department to meet its obligations under an accredited assessment process.

### ***Key EIS requirements of the EP Act and subordinate legislation***

- 1.3 The EIS must address key requirements outlined in the EP Act and subordinate legislation, including:
- (a) the requirements of section 40 of the EP Act, which specifies the purpose of an EIS and of the EIS process
  - (b) the requirements of sections 125, 126 and 126A which set out the general information requirements for applications for an EA
  - (c) the requirements of sections 126B, 126C and 126D which set out the information requirements for a proposed progressive rehabilitation and closure plan (PRC plan) for mining projects
  - (d) the requirements of chapter 2 and schedule 1 of the Environmental Protection Regulation 2019 (EP Regulation), including matters to be addressed under the EPBC Act by an accredited assessment process
  - (e) the environmental objectives and performance outcomes specified in schedule 8 of the EP Regulation.

### ***EIS information requirements***

- 1.4 The EIS must provide all the information needed to enable the issuing of an EA (and PRC plan schedule for mining projects) for the project as set out in these TOR in conjunction with the latest version of the department's [EIS information guidelines](#). This is because section 139 of the EP Act states that the information stage of the EA application and PRC plan does not apply if the EIS process is complete, unless there has been a subsequent change to the project including changes to a proposed PRC plan (where relevant).

- 1.5 While every attempt is made by the department to ensure the final TOR requires an assessment of all relevant matters, the final TOR may not be exhaustive. Therefore, the EIS must address other matters not covered in the final TOR in the following circumstances:
- (a) Where studies reveal a matter that had not been foreseen when the TOR was finalised.
  - (b) An issue not identified previously is considered contentious by the public, such as a public perception of potential environmental harm or nuisance even though the perception might be mistaken.
  - (c) The department directs the proponent in writing to address a matter as an information request under section 62 of the EP Act.
  - (d) New or amended legislation or policies come into effect after the TOR has been finalised, regardless of whether the legislation or policies have been listed in the TOR. Transitional arrangements or exemptions may apply for individual projects.
  - (e) The proponent makes amendments to the project that would result in a change in the nature, timing or location of any impacts.

## Information about the project and assessment

### *Project proponent*

- 1.6 Kestrel Coal Resources Pty Ltd (Kestrel) is the proponent for the Project. Kestrel is a joint venture company formed in 2018 between EMR Capital (52 %) and Adaro Energy (48 %). Kestrel (80 %) and Mitsui Kestrel Coal Investment Pty Limited (20 %) are in a joint venture for the ownership of Kestrel Mine with Kestrel being the operating entity.

### *Project description*

- 1.7 The proposed project is located approximately 40 km northeast of Emerald within the Central Highlands Regional Council local government area (refer Figure 1-1). Emerald, a town of approximately 15,000 people, is the regional hub and residence for most Kestrel personnel. An airport that links daily flights to and from Brisbane is located at Emerald.

The proposed project is seeking to develop an extension to the existing Kestrel underground coal mine and would continue to utilise standard development and longwall mining techniques to extract coal from the German Creek seam.

The Project (refer Figure 1-2) includes:

- A new mining lease in part of Mineral Development Licence (MDL) 182 (for which the majority of mining would occur)
- Minor extensions to mining in part of the existing approved mining leases (ML) 70301 and ML 70481
- Full utilisation of the existing approved Co-Disposal Area (CDA) footprint, along with a potential extension of the CDA facilities located on ML 1978.

The Project area is approximately 5,644 ha, with a total disturbance footprint (from mining and the CDA extension) of approximately 4,330 ha. The disturbance footprint of the CDA is expected to be up to approximately 396ha for the Project. There are no off-lease mining related activities expected to be required for the Project.

Mining operations are currently active in ML 1978, ML 70301, ML 70302, ML70330, and ML 70481. The Project will be a direct continuation of the existing mine, utilising the existing surface facilities, including administration and maintenance buildings, surface access roads, coal stockpiles and overland conveyor, Coal Handling and Preparation Plant (CHPP), water infrastructure and train loadout facilities. The project will also continue to utilise the same mining approach and type of equipment for the development of underground roadways and to setup longwall production faces. Extraction of coal from the German Creek seam will be undertaken using longwall mining equipment.

The Project has sought to minimise environmental impacts by utilising existing infrastructure to the greatest extent possible, including:

- Utilising the two existing mine access portals to access to the proposed project underground workings, rather than creating a more localised access, and thereby eliminating the need for significant drift drilling and constructions works, along with additional access roads and conveyors

- Utilising all existing surface infrastructure including administration and maintenance buildings, coal stockpiles, the overland conveyor, CHPP, water infrastructure, and train loadout facilities
- Maximising storage of coal washery wastes within the existing CDA footprint to minimise the potential extension area required.

There is not expected to be any additional demand on existing power and water services.

The inclusion of the proposed project would maintain annual production rates between approximately 9.0 and 11.0Mtpa ROM coal which equates to between 7.0 and 8.6Mtpa of primarily metallurgical coal product for export markets. The current Kestrel Mine approvals allow production to continue to 2036. This project will enable the operating life of the Kestrel Mine to be extended until around 2050 with an anticipated extension to the mine life of approximately 14 years. The proposed project output would replace the scheduled reduction in output from the existing underground operations.

The expected workforce would be up to 750 full time equivalent (FTE) persons comprising directly employed Kestrel employees and contractors. The expected employment level, inclusive of the Project, is expected to remain consistent with the current level of employment at the Kestrel Mine. It is anticipated that specialised labour would be required during the construction phase for minor additional infrastructure requirements (such as ventilation and cooling shafts, gas drainage, dewatering bores). It is anticipated that the required workforce would be sourced from local providers wherever possible. These personnel are expected to reside in the region and would travel to the project site daily during the construction period. No material increases in traffic numbers, or the need for road infrastructure upgrades, are therefore expected to be required for the project. Similarly, no material changes to air travel requirements are expected.

The Kestrel rail network is serviced via Aurizon and Pacific National. Product coal is railed approximately 370 km to the RG Tanna Coal Terminal at the port of Gladstone. With incorporation of the project, Kestrel will continue to generate a similar production output to the current operation, therefore no changes to the existing rail network or port arrangements are expected to be required.

### **EIS assessment process**

1.8

- On 5 March 2024, the department approved an application for Kestrel to voluntarily prepare an EIS under the Environmental Protection Act for the Kestrel West Mine Extension Project. Under section 139 of the Environmental Protection Act, the EIS will form the application documents for the requirements of chapter 3 of the Environmental Protection Act.*
- This is provided that the environmental risks of the activity or way the activity will be carried out, including any proposed PRC plan, do not change between the EIS being completed under the EP Act and when the EA and PRC plan applications were made
- The proposed project was determined to be a controlled action (EPBC 2024/09792) under the EPBC Act (Cth). The controlling provisions are a) World Heritage properties (sections 12 and 15A) b) National Heritage places (sections 15B and 15C) c) Listed threatened species and communities (sections 18 and 18A) d) Great Barrier Reef Marine Park (sections 24B and 24C), and e) A water resource, in relation to unconventional gas development and large coal mining development (sections 24D and 24E).
- The EIS for the project will be jointly assessed under the EP Act and the Commonwealth's EPBC Act using the EIS process under the EP Act.
- The EIS process will assess the potential impacts of the project on the controlling provisions as an accredited assessment process under section 87(4) of the EPBC Act.
- Further information on the EIS process under the EP Act is described in the department's guideline [The environmental impact statement process for resource projects under the \*Environmental Protection Act 1994\* \(ESR/2016/2171\) \(DESI 2024\).](#)



Figure 1-1 Project Regional Location

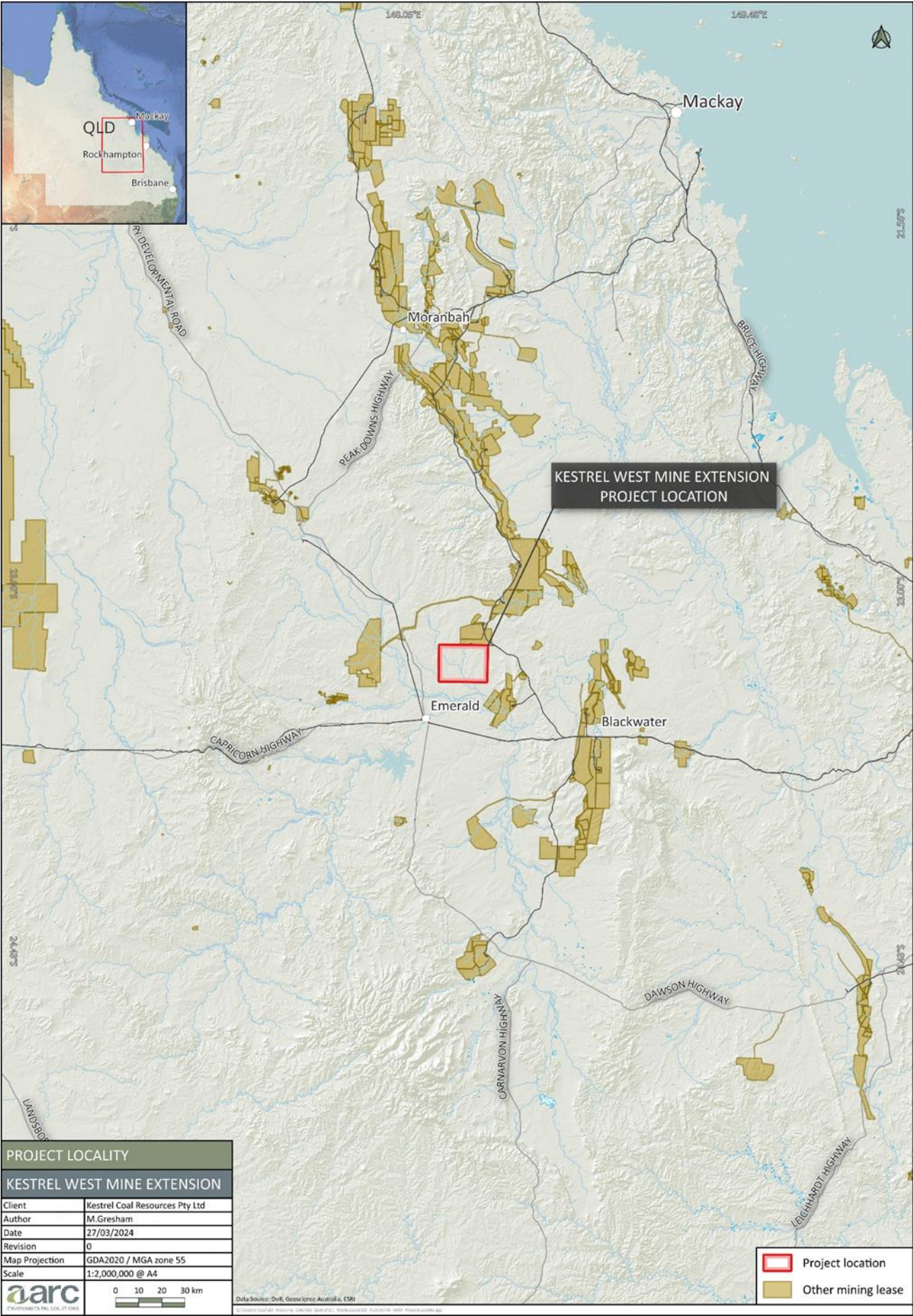
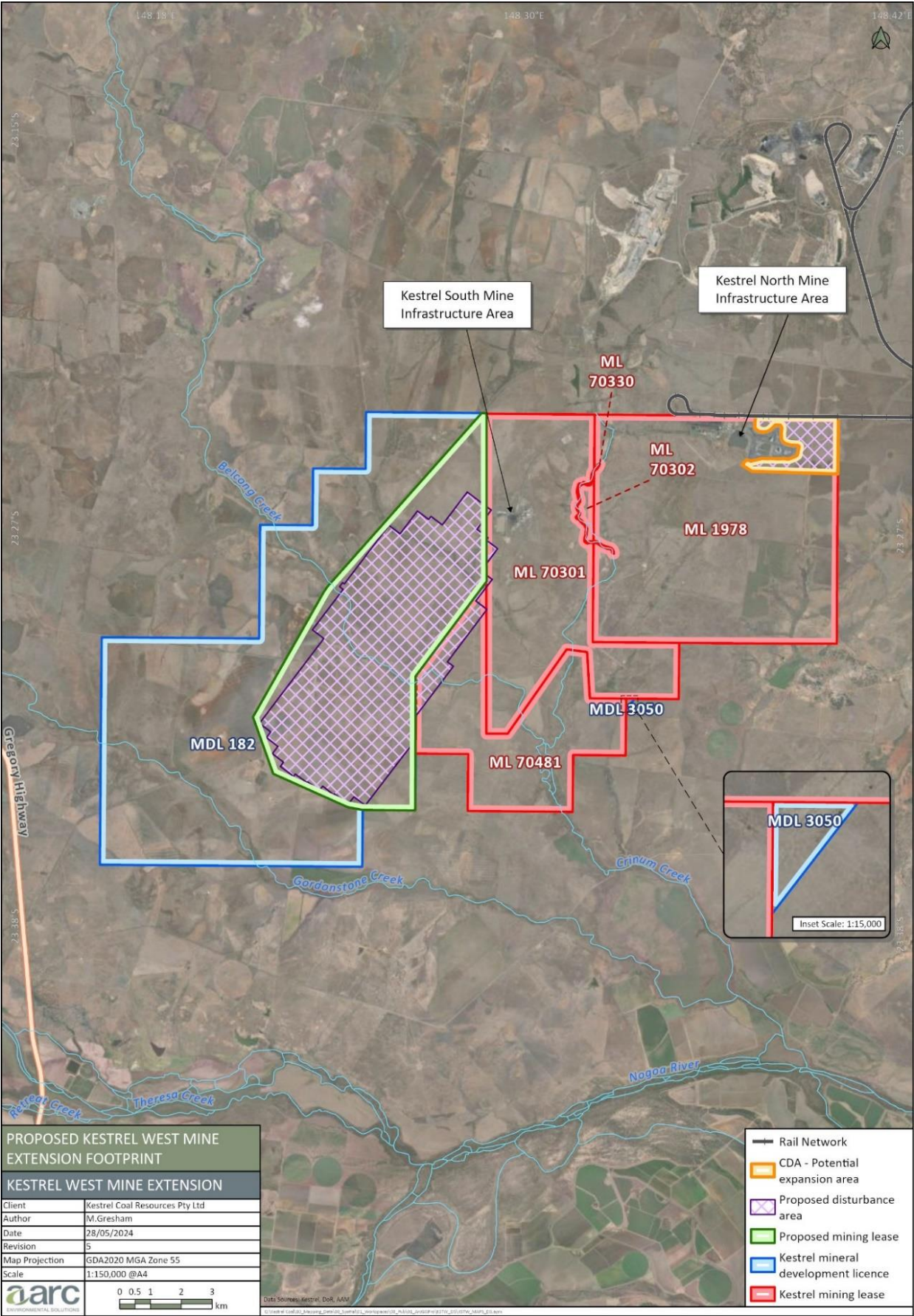




Figure 1-2: Proposed Kestrel West Mine Extension Project



## 2. EIS content requirements

- 2.1 The remaining sections outline the information requirements of an EIS under the EP Act for the proposed Kestrel West Mine Extension Project. It is not necessary for the EIS to follow the structure outlined below, but the relevant requirements for each section must be included in the EIS.

## 3. Glossary

- 3.1 Provide a glossary of terms and a list of acronyms and abbreviations at the start of the EIS.

## 4. Executive summary

- 4.1 The EIS must include an executive summary which describes the project and conveys the most important aspects and environmental management commitments relating to the project in a concise and readable form.

## 5. Introduction

- 5.1 The introduction of the EIS must clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. It must include an overview of the structure of the document.

### Project proponent

- 5.2 Provide information about the proponent(s) and their business, including:
- (a) the proponent's full name, street and postal address, and Australian Business Number, including details of any joint venture partners
  - (b) the nature and extent of the proponent's (including director's) business activities and experience in resource projects
  - (c) the proponent's (including director's) environmental record, including a list of any breach of, or proceedings against the proponent(s) under, a law of the Commonwealth or a State for the protection of the environment or the conservation and sustainable use of natural resources (an environmental law)
  - (d) the proponent's quality, environmental, health, safety and community policies
  - (e) experience, qualifications and certification of all appropriately qualified consultants and sub consultants engaged by the proponent to complete the EIS.

### The environmental impact statement process

- 5.3 Outline the steps of the EIS process, noting any completed milestones, and an estimated completion date for each remaining EIS stage. Highlight the steps in which the public will have the opportunity to provide input or comment. This information is required to ensure readers are informed of the EIS process and are aware of their opportunities for input and commenting.
- 5.4 Inform the reader how and when properly made public submissions on the EIS can be made, and outline how the submissions are considered in the decision-making process.

### Project approvals process

- 5.5 Describe all approvals under federal, state or local legislation that are required to enable the project to be constructed and operated. Include the following information:
- (a) the legislation under which the approvals are assessed and issued, the administering authority, stages, timing considerations and associated public notification requirements
  - (b) how the EIS fits into the assessment and approval processes for the EA and other approvals required of the project before construction and operations can start

- (c) as this project is *to be assessed under an accredited assessment process* , describe the approvals process under the EPBC Act
- (d) whether the project would likely contravene a law of the Commonwealth or the State
- (e) if there are any relevant government policies or legislation with which the project is inconsistent.

## 6. Consultation process

- 6.1 Describe the consultation that has taken place and how responses from stakeholders, including government agencies and members of the community, have been incorporated into the design and outcomes of the project.
- 6.2 Describe proposed future consultation activities and outline how the results of that consultation will be used in the ongoing management of the project. Provide information on the development and outcomes of the implementation of consultation for the people, organisations and communities identified as affected or interested persons and stakeholders for the project. Describe issues of potential concern to all stakeholders at various stages of the project from project planning to commencement, project construction, operations and decommissioning. The description of the consultation must address the following matters:
  - (a) the objectives of the consultation process
  - (b) timing of consultation
  - (c) the number and interests of the people, organisations and communities involved in the consultation (particularly the affected and interested persons defined in sections 38 and 41 of the EP Act)
  - (d) methods of consultation and communication
  - (e) consultation process reporting and feedback methods
  - (f) an assessment explaining how the consultation objectives have been met
  - (g) an analysis of the issues and views raised and their completed or planned resolution, including any alterations to the project because of feedback received.

## 7. Project description and alternatives

- 7.1 Describe all aspects of the project that are covered by the EIS assessment. If there are any aspects of the project that would be assessed separately, describe what they are, and how they would be assessed and approved. If the project is an expansion of an existing activity, clearly state the linkages, overlap and separation between them.
- 7.2 The project description must include all on lease and off lease activities relevant to the project including construction, operation and decommissioning activities. If the delivery of the project is to be staged, describe the nature and timing of the stages.

### Project

- 7.3 Describe and illustrate the following specific information about the project:
  - (a) project title
  - (b) project objectives
  - (c) expected capital expenditure
  - (d) rationale for the project
  - (e) background to the project's development and justification for its need
  - (f) project description, including the nature and scale of all project components and activities
  - (g) whether it is a greenfield or brownfield site
  - (h) power and water supply
  - (i) transport requirements

- (j) regional and local context of the project's footprint, including maps at suitable scales
- (k) proposed timing of the development, including construction staging, likely schedule of works and anticipated mine life
- (l) relationship to other major projects, developments or actions of which the proponent is reasonably aware
- (m) the workforce numbers for all project phases
- (n) where personnel would be accommodated and the likely recruitment and rostering arrangements to be adopted
- (o) proposed travel arrangements of the workforce to and from work, including use of a fly-in-fly-out (FIFO) workforce.

## Site description

- 7.4 Provide real property descriptions of the project land and adjacent properties, any easements, any existing underlying resource tenures, and identification number of any resource activity lease for the project land that is subject to the application.
- 7.5 Describe and illustrate with scaled maps the key infrastructure in and around the site, including state-controlled and local roads, rail lines and loading yards, airfields, ports or jetties, electricity transmission infrastructure, pipelines, and any other infrastructure in the region relevant to the project.
- 7.6 Describe and illustrate the topography of the project site and surrounding area; highlight and identify any significant features shown on the maps. Map the location and boundaries of the project's footprint including all infrastructure elements and development necessary for the project. Show all key aspects including excavations, stockpiles, areas of fill, subsidence areas, services infrastructure, plant locations, water or tailings storages and infrastructure, buildings, bridges and culvert, haul and access roads, causeways, stockpile areas, barge loading facilities and any areas of dredging or bed levelling. Include discussion of any environmental design features of these facilities including bunding of storage facilities.
- 7.7 Describe and map the spatial distribution and cross-sections of geological and terrestrial and/or coastal landforms of the project area in a suitable electronic format. Provide detailed spatial information in a suitable electronic format, that clearly shows the boundaries of water catchments that are significant for the drainage of the project site, including the location of waterways as defined under the Fisheries Act 1994. Provide detailed spatial information in a suitable electronic format that clearly shows geological structures, such as aquifers, faults and economic resources that could have an influence on, or be influenced by, the project's activities.
- 7.8 Describe and illustrate the precise location of the project in relation to any designated and protected areas and waterbodies. This is to include the location of any proposed buffers surrounding the working areas and lands identified for conservation, either through retention in their current natural state or to be rehabilitated.
- 7.9 Describe, map and illustrate land and soil resources (types and profiles) of the project area at a scale relevant to the site and in accordance with relevant guidelines. Identify soils that would require particular management due to wetness, erosivity, depth, acidity, salinity or other feature, including acid sulfate soils.
- 7.10 Describe with concept and layout plans, in both plan and cross-section views, requirements for constructing, upgrading or relocating all infrastructure associated with the project. Show the locations of any necessary infrastructure easements on the plans, including infrastructure such as roads, rail (and the rail corridor), level crossings, conveyors, bridges, jetties, ferries, tracks and pathways, dams and weirs, bore fields, power lines and other cables, wireless technology (such as microwave telecommunications), and pipelines for any services, whether underground or above.

## Proposed construction and operations

- 7.11 Where applicable, describe the following information about the project, including maps and concept, design and layout plans as relevant for the following:
  - (a) existing land uses and any previous land use that might have affected or contaminated the land
  - (b) existing buildings, infrastructure and easements on the potentially affected land
  - (c) the precise location of works to be undertaken, structures to be built or components of the project



- (d) all pre-construction activities (including vegetation clearing, site access, interference with watercourses, wetlands and floodplain areas)
- (e) the proposed construction methods, associated equipment and techniques
- (f) road and rail infrastructure, and stock routes, including new constructions, closures and/or realignments
- (g) the location, design and capacity of all other required supporting infrastructure, including water supply and storage, sewerage, electricity from the grid, generators and fuels (whether gas, liquid and/or solid), power stations, renewable energy and telecommunications
- (h) proposed water management plan and changes to watercourses, flooding and overland flow on or off the site, including water diversions, crossings, flood levees, water off-takes, and locations of any proposed water discharge points
- (i) any take of surface and groundwater (both direct and indirect)
- (j) proposed tailings management and storage
- (k) any infrastructure alternatives, justified in terms of ecologically sustainable development (including energy and water conservation)
- (l) days and hours of construction and operation
- (m) proposed mine life, amount of resources to be mined and the resource base including total seam thickness and seam depths
- (n) mining sequence and cross sections showing profiles and geological strata and faults
- (o) the planned recovery of resources including the location of any resources not intended to be mined that may be sterilised during mining activity or from related infrastructure
- (p) the proposed methods, equipment and techniques for resource separation, beneficiation and processing
- (q) the sequencing and staging of activities
- (r) the proposed methods and facilities to be used for the storage, processing, transfer, and loading of product
- (s) the capacity of high-impact plant and equipment, their chemical and physical processes, and chemicals or hazardous materials to be used
- (t) any activity that would otherwise be a prescribed environmentally relevant activity (ERA)
- (u) if it were not undertaken on a mining or petroleum lease
- (v) any new borrow pits, stream bed excavations, or expanded dredging, bed levelling, quarry and screening operations that may be required to service construction or operation of the project.

## Feasible alternatives

- 7.12 Present feasible alternatives for the project. Address a range of alternatives including conceptual, technological, locality, configuration, scale and individual elements or components that may improve environmental outcomes as well as the alternative of not proceeding with the project.
- 7.13 Describe and evaluate the comparative environmental, social, and economic impacts of each alternative (including the option of not proceeding), with regard to the principles of ecologically sustainable development.
- 7.14 Discuss each alternative and its potential impacts in sufficient detail to enable an understanding of the reasons for preferring certain options and courses of action while rejecting others. Justify why the project and preferred options should proceed.

## 8. The environmental impact assessment process

- 8.1 For each project specific matter outlined in section 9, the EIS must identify and describe the relevant environmental values, assess potential adverse and beneficial environmental, economic and social impacts

of the project; and outline the management, monitoring, planning and other measures proposed to avoid, minimise and/or mitigate any adverse environmental impacts of the project. This must be addressed within the scope of the following requirements.

## Environmental values

- 8.2 For the purposes of the EIS process, 'environment' is defined in section 8 of the EP Act. Identify and describe the values that must be protected for all the relevant matters including:
- (a) environmental values specified in the EP Act, the EP Regulation (e.g. environmental objectives and performance outcomes as defined in schedule 8), environmental protection policies and associated guidelines
  - (b) values under other State legislation, policies and guidelines including the *Vegetation Management Act 1999*, the *Nature Conservation Act 1992*, the *Regional Planning Interests Act 2014*
  - (c) values identified in the project specific matters in section 9 of the TOR.
- 8.3 Consider all available baseline information relevant to the environmental risks of the project, including seasonal and long term variations. Describe the quality of all information, in particular the source of the information, how recent the information is, how the reliability of the information was tested, and any assumptions and uncertainties in the information.

## Impact assessment

- 8.4 Assess the impacts of the project on environmental values. This includes demonstrating that the project meets the environmental objectives and outcomes for each matter in section 9 of the TOR and the environmental objectives and performance outcomes for any matters listed in Schedule 8 of the EP Regulation. Impact assessment must address:
- (a) short-, medium- and long-term scenarios
  - (b) the scale of an impact, including:
    - i. the impact's intensity and duration
    - ii. cumulative effects of the project in combination with other major projects or developments of which the proponent is reasonably aware
    - iii. the risk of environmental harm
    - iv. avoidance, mitigation and management strategies and if necessary, offsets (Queensland Government 2024b) provisions
    - v. the potential for unforeseen impacts
    - vi. the risks associated with unlikely but potentially major impacts
    - vii. direct, indirect, secondary, permanent, temporary, unknown, unpredictable and/or irreversible impacts
    - viii. both positive and negative impacts
    - ix. impact interactions.

## Cumulative impacts

- 8.5 Assess the cumulative impacts of the project on environmental values. Every effort must be made to find information from all sources relevant to the assessment of cumulative impacts including other major projects or developments of which the proponent is reasonably aware. The EIS must outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis. Impact assessment must address cumulative impacts, including:
- (a) impacts to environmental values of land, air and water, public health and the health of terrestrial and aquatic ecosystems
  - (b) impacts to environmental values over time or in combination with other impacts in the dimensions of scale, intensity, duration or frequency of the impacts



- (c) impacts created by the activities on other adjacent, upstream and downstream developments and infrastructure, and landholders
- (d) impact of project on overall state and national greenhouse gas (GHG) inventories and targets.

## Avoidance and mitigation

- 8.6 Propose and describe avoidance, mitigation and management strategies for the protection or enhancement of identified environmental values. Proposed strategies must:
- (a) adhere to the department's management hierarchy: (a) to avoid; (b) to minimise and mitigate including best practice environmental management; once (a) and (b) have been applied, (c) if necessary and possible, to offset
  - (b) include a scientifically robust assessment of the expected or predicted effectiveness, of the mitigation measures for dealing with the project's relevant impacts
  - (c) the name of the entity responsible for endorsing or approving each mitigation measure or monitoring program
  - (d) any statutory or policy basis for the mitigation measures
  - (e) the cost of the mitigation measures
  - (f) include an environmental management plan setting out the framework for continuing management, mitigation and monitoring programs for the project's relevant impacts, including any provision for independent environmental auditing
  - (g) include an adaptive management approach to provide confidence that, based on current technologies, the impacts can be effectively managed over the long-term
  - (h) be described in context of proposed conditions including site-specific, outcome-focussed conditions that can be measured and audited.
- 8.7 For unproven elements of a resource extraction or processing process, technology or activity, identify and describe any global leading practice environmental management that would apply.
- 8.8 Demonstrate that the design of the project and its predicted outcomes:
- (a) meet the environmental objectives and outcomes listed in section 9 of the TOR for each matter and the performance outcomes stated in Schedule 8 of the EP Regulation
  - (b) address the matters outlined in Schedule 1 of the EP Regulation (including items 2 and 4)
  - (c) are consistent with the state and national emissions reduction targets, including to power Queensland with 50% renewable energy by 2030, reduce emissions by 30% below 2005 levels by 2030 and achieve net zero GHG emissions by 2050
  - (d) are consistent with best practice environmental management during construction, operation, and decommissioning of the project
  - (e) meet all statutory and regulatory requirements of the federal, state and local government, including any relevant plans, strategies, policies and guidelines.

## Conditions and commitments

- 8.9 Provide sufficient evidence and detail through studies, proposed management measures, commitments and supporting information:
- (a) to demonstrate that the predicted outcomes for the project can be achieved
  - (b) to meet the requirements of sections 125,126A of the EP Act and 126B–126D
  - (c) to meet the requirements of Schedule 1 of the EP Regulation
  - (d) for the administering authority to make recommendations about the suitability of the project, assess whether an approval be granted and recommend draft conditions for inclusion on relevant approvals

- (e) to allow the administering authority to develop a register of commitments, and how those commitments will be achieved during the development and operation of the project.

## Information sources

- 8.10 For information included in the EIS, provide the following: the source of the information, how recent the information is, how the reliability of the information was tested and any uncertainties in the information.

## Critical matters

### *Definition of critical matters*

- 8.11 The detail in which the EIS deals with all matters relevant to the project must be proportional to the potential scale of the impacts on environmental values. When determining the scale of an impact, consider the impact's intensity, duration, cumulative effect, irreversibility, the risk of environmental harm, management strategies and offset provisions. A critical matter is a project specific matter listed in section 9 of the TOR that has one or more of the following characteristics:
- (a) It has a high or medium probability of causing serious or material environmental harm, or a high probability of causing an environmental nuisance
  - (b) It is 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
  - (c) It is relevant to a controlling provision under the EPBC Act
  - (d) It raises obligations under any other legislation applicable for the project (e.g. *Water Act 2000*).
- 8.12 The final scope of critical matters will be determined by the administering authority when finalising the TOR. However, if a new additional critical matter becomes apparent after the final TOR is issued, the EIS must address that new matter.

### *Critical environmental matters for this project*

- 8.13 Critical environmental matters identified for this project which the EIS must give priority are:
- (a) *Climate (greenhouse gas emissions)*
  - (b) *Land (subsidence)*
  - (c) *Water (surface water and groundwater)*
  - (d) *Flora and fauna*
  - (e) *Matters of National Environmental Significance.*

## 9. Project specific matters

### Climate

#### *Critical*

Environmental objective and outcomes
Keep global warming below 2°C, preferably 1.5°C, above pre-industrial levels through the reduction of GHG emissions by supporting Queensland's emission reduction targets.
Prepare for climate change through climate resilient project development and operation.

- 9.1 Conduct the assessment in accordance with the latest version of the department's [Climate—EIS information guideline](#) (ESR/2020/5298) (DESI 2024). Describe the project area's climate patterns that are relevant to the environmental impact assessment, particularly the project's discharges to water and air, and propagation of noise. Provide climate data in a statistical form including long-term averages and extreme values.

- 9.3 Assess the project's vulnerabilities to projected climate change (e.g. changing patterns of temperature, rainfall, hydrology, and extreme weather events). In the assessment of climate hazards and risks, reference relevant climate projection data and employ appropriate risk assessment methodologies.
- 9.4 Describe the adaptation strategies and/or activities designed to minimise climate change impacts to the project, subsequent land uses on that site (e.g. rehabilitation projects) and surrounding land uses. Adaptation activities must be designed to avoid perverse outcomes, such as increased emissions of GHG or maladaptive outcomes for surrounding land uses.

### **Greenhouse gas emissions**

- 9.5 Assess emissions to demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Reg. Meet the department's Guideline—Greenhouse gas emissions (ESR/2024/6819) (DESI 2024). Broadly this guideline requires:
- (a) Details of GHG emissions likely to be generated by the activities of the project, including both direct (Scope 1) and indirect (Scope 2 and Scope 3) emissions. GHG emission information in the EIS is required to sufficiently inform:
    - i. the EA assessment process including the regulatory requirements that must be complied with and the standard criteria that must be considered
    - ii. considerations under the *Human Rights Act 2019* and
    - iii. EA conditioning and compliance.
  - (b) Details of the management practices proposed to be implemented to prevent or minimise adverse impacts identifying how they conform with the GHG abatement hierarchy and the requirements specified for a GHG abatement plan.
  - (c) A risk assessment that outlines the scale of expected GHG emissions from the project and how it is expected to contribute to climate change impacts on Queensland's environmental values.
- 9.6 Provide information regarding GHG emissions and energy production and consumption consistent with requirements of the Commonwealth *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and its subordinate legislation including methodology, emissions factors, and calculations used to estimate project's GHG emissions.
- 9.7 Justify how the project will contribute to GHG emission reduction targets for the life of the project by:
- (a) Supporting Queensland's Government's GHG emission reduction and clean energy targets as legislated in the *Clean Economy Jobs Act 2024* and *Energy (Renewable Transformation and Jobs) Act 2024*.
  - (b) Meeting the requirements of the NGER Act and where triggered, meet emission reduction targets and trajectory as specified by the commonwealth's Safeguard Mechanism.

### **Greenhouse gas abatement plan**

- 9.8 Provide a GHG abatement plan for the project that details ongoing emission mitigation and management measures proposed to be implemented throughout the life of the project to progressively reduce emissions. The GHG emission reduction program must provide specific actions that will be implemented. Actions must be specific, measurable, achievable, realistic, and time-bound (following the SMART principals).
- 9.9 The GHG abatement plan must address the requirements outlined in Appendix A of the department's Guideline—Greenhouse gas emissions (ESR/2024/6819) (DESI 2024) and also address the following:
- (a) As part of assessment of project alternatives, detail, compare and quantify conceptual, technological, locality, configuration, scale and individual elements or components of feasible alternatives that were considered to avoid or reduce the project's emissions.
  - (b) Compare and detail preferred measures for emission controls and energy consumption in consideration of best practice and leading international environmental management for the relevant industry sector including evaluation of developing technologies.
  - (c) Describe the assumptions and data inputs applied to develop the emissions estimates and the emissions reduction targets. The calculation of baseline should follow the methodology outlined in the

National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Safeguard rule). If International Best Practice (IBP) benchmarks are not available, detail how project baseline has been estimated and identify how the IBP benchmark will be integrated should values do become available.

- (d) Detail a process to ensure continuous improvement such that current industry emission reduction strategies are applied over the life of the project. Include identification of new technologies, management practices and personnel training consistent with strategies developed for best practice environmental management.
- (e) Demonstrate that measures have been factored into the economic feasibility of the project.
- (f) Identify any voluntary initiatives, or research into reducing the lifecycle and embodied energy carbon intensity of the project's processes or products.
- (g) Identify opportunities to reduce scope 3 emissions and detail measurable commitments where appropriate.
- (h) Provide a comparison of expected cumulative project GHG emissions with the remaining global, national and state emission budgets. Consider all scope 3 emissions identified in the project estimate when comparing with the remaining global emission budget, and respective scope 3 emissions generated nationally or in Queensland for comparison with the remaining national and state emission budgets.
- (i) Where offsets have been identified as the only remaining option for abatement, develop a comprehensive carbon offsets management plan. Detail expected market availability limitations of offset credits and show how the project will secure the required supply of offsets. Identify how opportunities and commitments for offsetting GHG emissions represent genuine emissions reductions within Australia that meet the principles of the *Carbon Credits (Carbon Farming Initiative) Act 2011*.
- (j) For projects proposing to offset more than 30% of their emissions or offset outside of Queensland, provide as part of the EIS an independent review by an appropriately qualified person. This review will assess and confirm findings of the EIS that GHG emission avoidance, reduction and substitution measures have been expended and why suitable offsets are not available within Queensland.
- (k) When multi-year emissions reduction targets are proposed to take into account emerging technologies over that period, ensure the same emissions result will be delivered at the end of the multi-year period such that the trajectory of the Queensland emissions targets are met.

## Land

*Critical*

Environmental objective and outcomes
<p>The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.</p> <p>The choice of the site, at which the activity is to be carried out, avoids or minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.</p> <p>The location for the activity on a site protects all environmental values relevant to adjacent sensitive use.</p> <p>The 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.</p>

- 9.10 Conduct the impact assessment in accordance with the latest version of the department's [Land—EIS information guideline](#) (ESR/2020/5303) (DESI 2024), [Contaminated land—EIS information guideline](#) (ESR/2020/5300) (DESI 2024), [Applications for activities with impacts to land](#) (ESR/2015/1839) (DESI 2024), [DAF Environmental impact assessment companion guide](#) (DAF 2024), [RPI Act statutory guideline 11/16 companion guide](#) (DSDMIP 2019b) and, if any quarry material is needed for construction, the department's [Quarry material—EIS information guideline](#) (ESR/2020/5306) (DESI 2024).
- 9.11 Demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.
- 9.12 Describe the existing features and environmental values of the land that may be affected by the project. Address topography, cadastral data, land use, infrastructure, areas of regional interest, native title and Indigenous Land Use Agreements, geology and geomorphology, mineral resources, ore reserves, petroleum

and energy resources, and GHG storage resources, soils, land evaluations, contaminated land, landscape character, visual amenity and lightning.

- 9.13 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 the following matters:
- (a) Any changes to the landscape and its associated visual amenity in and around the project area.
  - (b) Any existing or proposed mining tenement under the *Mineral Resources Act 1989*, petroleum authority under the *Petroleum and Gas (Production and Safety) Act 2004*, petroleum tenure under the *Petroleum Act 1923*, geothermal tenure under the *Geothermal Energy Act 2010* and GHG tenure under the *Greenhouse Gas Storage Act 2009* overlying or adjacent to the project site.
  - (c) Temporary and permanent changes to land uses of the project site and adjacent areas, considering:
    - i. actual and potential agricultural uses
    - ii. regional plans and local government planning schemes
    - iii. any Key Resource Areas that were identified as containing important extractive resources of state or regional significance which the State considers worthy of protection
    - iv. strategic cropping land, priority agricultural areas, priority living area and strategic environmental areas under the *Regional Planning Interests Act 2014* and the trigger map for strategic cropping land
    - v. findings of the Agricultural land audit (including land of agriculture state interest under State Planning Policy)
    - vi. impacts on Property and Project Plans approved under the *Soil Conservation Act 1986*
    - vii. constraints to the expansion of existing and potential agricultural land uses.
  - (d) Identify any existing or proposed incompatible land uses within and adjacent to the site, including the impacts on economic resources and the future availability and viability of the resource including extraction, processing and transport location to markets.
  - (e) Identify any infrastructure proposed to be located within, or which may have impacts on, the stock route network associated with the *Stock Route Management Act 2002*.
- 9.14 Assess the project against the requirements of the *Regional Planning Interests Act 2014*.
- 9.15 Propose suitable measures to avoid or minimise impacts related to land use.
- 9.16 Show how landforms, during and after disturbance, will meet any requirements of project or property plans approved under the *Soil Conservation Act 1986*.
- 9.17 For underground mines and any other projects likely to cause land subsidence, assess and provide comprehensive surface subsidence predictions using tools or techniques that enable the location, extent and scale of subsidence, and its effect over time on surface landforms and hydrology to be understood. Propose detailed mitigation measures for any significant impacts that would result from subsidence including impacts on infrastructure, land, hydrology, flora and fauna.
- 9.18 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.
- 9.19 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 in accordance with the *Native Title (Queensland) Act 1993* and consistent with the Queensland Government's [Native title work procedures](#) (Queensland Government 2024e).
- 9.20 Detail (including with the use of maps) the following native title considerations:
- (a) current tenure of all land or waters within the project area (which may include creeks)
  - (b) land or waters where native title has been determined to exist by the Federal Court
  - (c) land or waters that are covered by a native title determination application
  - (d) land or waters that are covered by a registered Indigenous Land Use Agreement.

- 9.21 Describe pathways for resolving any native title considerations that comply with the Queensland Government's [Native title work procedures](#) (Queensland Government 2024e) (such as the negotiation and registration of an Indigenous Land Use Agreement).

### ***Rehabilitation and closure***

Environmental objective and outcomes
Land disturbed by mining activities will be rehabilitated progressively as it becomes available, to minimise the risks of environmental impacts and reduce cumulative areas of disturbed land.
The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.
The activity is operated in a way that disturbed land will be rehabilitated or restored to a stable condition; the land is safe and structurally stable, there is no environmental harm being caused by anything on or in the land, and the land can sustain a post-mining land use.
The progress and outcomes of progressive rehabilitation activities will be monitored and reported on to demonstrate how successful they have been in achieving progress towards the agreed final land use, and to inform corrective action where required.

### ***Mining projects***

- 9.22 Address the rehabilitation requirements of the EP Act including the provisions requiring a proposed PRC plan), or where there is an approved PRC plan, provide a proposed amended PRC plan. Demonstrate that the proposed rehabilitation is consistent with the department's guideline Progressive rehabilitation and closure plans (ESR/2019/4964) (DES 2023a) and best practice approaches about the strategies and methods for progressive and final rehabilitation.
- 9.23 Demonstrate that the rehabilitation of the environment disturbed by construction, operation, and decommissioning of the project can meet the environmental objectives and performance outcomes in Schedule 8A of the EP Regulation.

### ***Proposed PRC plan***

- 9.24 Provide a proposed PRC plan for the project. The plan must show how and where activities will be carried out on land in a way that maximises the progressive rehabilitation of the land to a stable condition and provide for the condition to which the holder must rehabilitate the land before the EA may be surrendered.

The proposed PRC plan must consist of two components:

- (a) rehabilitation planning part
  - (b) progressive rehabilitation and closure plan schedule (PRCP schedule).
- 9.25 The proposed PRC plan must be consistent with the information requirements in the department's [Submission of a progressive rehabilitation and closure plan](#) (ESR/2019/4957) (DESI 2024).

### ***Rehabilitation planning part***

- 9.26 Provide the rehabilitation planning part of the proposed PRC plan, by addressing the following:
- (a) Describe each resource tenure, including the area of each tenure
  - (b) Describe the relevant activities and the likely duration of the relevant activities
  - (c) Include a detailed description, including maps, of how and where the relevant activities are to be carried out
  - (d) Include details of the consultation undertaken by the applicant in developing the proposed PRC plan
  - (e) Include details of how the applicant will undertake ongoing consultation in relation to the rehabilitation to be carried out under the plan
  - (f) State the extent to which each proposed post-mining land use or non-use management area is consistent with the outcome of consultation with the community in developing the plan and any strategies or plans for the land of a local government, the State or the Commonwealth



- (g) For each proposed post-mining land use, state the applicant's proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP schedule
- (h) Identify the risks of a stable condition for land identified as a proposed post-mining land use not being achieved, and how the applicant intends to manage or minimise the risks
- (i) For each proposed non-use management area, state the reasons the applicant considers the area cannot be rehabilitated to a stable condition because of either of the below:
  - i. carrying out rehabilitation of the land would cause a greater risk of environmental harm than not carrying out the rehabilitation or
  - ii. the risk of environmental harm as a result of not carrying out rehabilitation of the land is confined to the area of the relevant resource tenure and the applicant considers, having regard to each public interest consideration, that it is in the public interest for the land not to be rehabilitated to a stable condition.
- (j) Include copies of reports or other evidence relied on by the applicant for each proposed non-use management area
- (k) For each proposed non-use management area, state the applicant's proposed methodology for achieving best practice management of the area to support the management milestones under the proposed PRCP schedule for the area
- (l) Include other information requirements outlined in the department's statutory guideline [Progressive rehabilitation and closure plans](#) (ESR/2019/4957) (DESI 2024).

#### *PRCP schedule*

- 9.27 Provide a proposed PRCP schedule which describes time-based milestones for achieving each post-mining land use or non-use management area for the project. Present the proposed PRCP schedule in the table template included in the department's [Submission of a progressive rehabilitation and closure plan](#) (ESR/2019/4957) (DESI 2024).

The proposed PRCP schedule, must identify:

- (a) all land within the resource tenure as either a post-mining land use or non-use management area
  - (b) when land becomes available for rehabilitation or improvement
  - (c) rehabilitation milestones to achieve a post-mining land use
  - (d) management milestones to achieve a non-use management area
  - (e) milestone criteria that demonstrate when each milestone has been completed
  - (f) completion dates for each milestone to be achieved
  - (g) a final site design.
- 9.28 All milestone criteria must be consistent with the SMART principles described in the [Progressive rehabilitation and closure plans](#) (ESR/2019/4957) (DESI 2024).

## **Water**

### *Critical*

#### **Water quality**

Environmental objective and outcomes
The activity will be operated in a way that protects environmental values of waters.
The activity will be operated in a way that protects the environmental values of groundwater and any associated surface ecological systems.
The activity will be managed in a way that prevents or minimises adverse effects on wetlands.

- 9.33 Conduct the impact assessment in accordance with the following guidelines: [Water—EIS information guideline](#) (ESR/2020/5312) (DESI 2024), [Applications for activities with impacts to water](#) (ESR/2015/1837) (DESI 2024), [Water quality guidelines](#) (DESI 2024a), [Australian and New Zealand Guidelines for Fresh and Marine Water Quality](#) (ANZECC and ARMCANZ 2000); (ANZG 2018); 2023), [Queensland Water Quality Guidelines](#) (DEHP 2009), [Wastewater release to Queensland waters](#) (ESR/2015/1654) (DESI 2024), [Monitoring and sampling manual](#) (DES 2018), [Information guidelines on deriving site-specific guideline values for physico-chemical parameters and toxicants](#) (IESC 2019) and [Using monitoring data to assess groundwater quality and potential environmental impacts](#) (DES 2021).
- 9.34 Demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.
- 9.35 With reference to the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 and section 9 the EP Act, identify the environmental values of surface- and ground- waters within the project area and immediately downstream or downgradient that may be affected by the project, including wetlands, semi-permanent and permanent pools, seagrass beds, corals, any human uses and cultural values of water.
- 9.36 Define the relevant water and sediment quality guidelines applicable to the environmental values and demonstrate how these will be met by the project during construction, operation, decommissioning and following project completion. Locally derived trigger values must be derived in accordance with best practice environmental management including the guidelines listed in [Water—EIS information guideline](#) (ESR/2020/5312) (DESI 2024).
- 9.37 Detail the hydrological, hydrogeological, chemical, physical and biological characteristics of surface waters and groundwater within the area that may be affected by the project and at suitable reference locations using sufficient data to define natural variation, including for various water types, and seasonal and spatial variation.
- 9.38 Describe the quantity, quality, location, duration and timing of all potential and/or proposed releases of contaminants. Releases may include controlled water discharges to surface water streams, uncontrolled discharges when the design capacity of storages is exceeded, spills of products during loading or transportation, contaminated run-off from operational areas of the site (including seepage from waste rock dumps), or run-off from disturbed acid sulfate soils. Refer to section 9.1 (Waste management) for further information requirements applicable to releases.
- 9.39 Assess the potential impact of any releases from point or diffuse sources on all relevant environmental values and water quality objectives of the receiving environment. The impact assessment must consider the resultant quality and hydrology of receiving waters, cumulative impacts, and the assimilative capacity of the receiving environment.
- 9.40 Describe how water quality guidelines and objectives would be achieved and environmental impacts would be avoided or minimised through the implementation of management strategies that comply with the management hierarchy and management intent of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019. Appropriate management strategies may include the use of erosion and sediment control practices, and the separation of clean storm water run-off from the run-off from disturbed and operational areas of the site.
- 9.41 Describe how monitoring would be used to demonstrate that objectives were being assessed, audited and met. For example, provide measurable criteria, standards and/or indicators that will be used to assess the condition of the ecological values, environmental values and health of surface- and ground- water environments. Propose detailed corrective actions to be used if objectives are not likely to be met.

### **Water resources**

<b>Environmental objective and outcomes</b>
Equitable, sustainable and efficient use of water resources.
Maintenance of environmental flows and water quality to support the long term condition and viability of terrestrial, riverine, wetland, lacustrine, estuarine, coastal and marine ecosystems.
Maintenance of the stability of beds and banks of watercourses, and the shores of waterbodies, estuaries and the coast.
Maintenance of supply to existing users of surface and groundwater resources.

- 9.42 Conduct the impact assessment in accordance with the department's [Water—EIS information guideline, ESR/2020/5312](#) (ESR/2020/5312) (DESI 2024) and [DAF Environmental impact assessment companion guide](#) (DAF 2024). Address the requirements of section 126A of the EP Act.
- 9.43 Describe present and potential users and uses of water in areas potentially affected by the project, including municipal, agricultural, industrial, recreational and environmental uses of water.
- 9.44 Describe the quality, quantity and significance of groundwater in the project area and any surrounding area potentially affected by the project's activities. Include the following:
- (a) characterise: the nature, type, geology/stratigraphy and depth to and thickness of the aquifers; their hydraulic properties; and value as water supply sources
  - (b) analyse the movement of underground water to and from the aquifer(s), including how the aquifer(s) interacts with other aquifers and surface water, and the effect of geological structures on this movement
  - (c) characterise the quality and volume of the groundwater including seasonal variations of groundwater levels
  - (d) provide surveys of existing groundwater supply facilities (e.g. bores, wells, or excavations).
- 9.45 Model and describe the inputs, movements, exchanges and outputs of surface water and groundwater that would or may be affected by the project. The models used to estimate associated water take must take into account the climatic conditions at the site, assess the potential impacts on water resources and include a site water balance. The model should be peer-reviewed by an independent appropriately qualified person(s) consistent with the *Australian groundwater modelling guidelines* (Barnett et al. 2024).
- 9.46 Provide a description of the project's impacts at the local scale and in a regional context including:
- (a) changes in flow regimes from diversions, water take and discharges
  - (b) groundwater draw-down and recharge
  - (c) management of mine affected water
  - (d) alterations to riparian vegetation and bank and channel morphology
  - (e) direct and indirect impacts arising from the development.
- 9.47 Provide an ecohydrological conceptual model that identifies the potential pathways and mechanisms of the effects of altered surface flows on groundwater connectivity, in-stream water quality, and surface and groundwater ecosystems in consideration of the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development's (IESC) [Information Guidelines Explanatory Note – Using impact pathway diagrams based on ecohydrological conceptualisation in environmental impact assessment](#). This conceptual model would help to identify and justify strategies proposed to mitigate and manage potential impacts. The findings should be considered in relation to the potential GDEs identified in the project area.
- 9.48 Provide a water management plan, for the life of the project, which details management strategies of mine-affected water, sediment-affected water and drainage from areas not disturbed by mining activities. Any water taken off site for further use must also be accounted for and must be consistent with the General Use Approval for associated water (including CSG water).
- 9.49 Identify any approvals or entitlements that would be needed under the *Water Act 2000*. Specifically address whether or not the project would take water from, or affect recharge to, aquifers of the Great Artesian Basin. Describe the practices and procedures that would be used to avoid or minimise impacts on water resources.
- 9.50 Describe how 'make good' provisions would apply to any water users that may be adversely affected by the project. Propose a network of groundwater monitoring bores before and after the commencement of the project that would be suitable for the purposes of monitoring groundwater quality and hydrology impacts that may occur as a result of the resource activity. Include details on investigation timeframes and actions if exceedances are detected.
- 9.51 Include maps of suitable scale showing the location of diversions and other water-related infrastructure in relation to resource infrastructure. Detail any significant diversion or interception of overland flow, including the effects of subsidence.

- 9.52 Describe the various options for supplying water to the project and assess any potential consequential impacts in relation to the objectives and strategies of any water plan and associated planning documents that may apply. The construction of in-stream water storages to collect water supply for the project should not be the only option presented. Alternative water supply options must be fully detailed.
- 9.53 Describe the proposed supply of potable water for the project, including temporary demands during the construction period. Also describe on-site storage and treatment requirements for wastewater from accommodation and/or offices and workshops.

#### *Water-related cultural values*

- 9.54 Discuss traditional owners' cultural values and water-related cultural use as relevant to the project, including information regarding economic development opportunities and methods proposed to protect these values, including but not limited to Aboriginal peoples and Torres Strait Islander peoples distinct cultural rights under the *Human Rights Act 2019*.
- 9.55 Describe the project's potential impacts on water-related cultural values, uses and aspirations of water resources for Aboriginal and Torres Strait Islander peoples.
- 9.56 Describe how water-related cultural values, uses and aspirations of water resources for Aboriginal and Torres Strait Islander peoples will be protected and/or promoted through water allocation and management strategies, relevant to the project.
- 9.57 Where country may be affected by existing or future water infrastructure projects in the area, assess the cumulative impacts of these projects on the water-related cultural values, uses and aspirations linked to water for Aboriginal and Torres Strait Islander peoples.

#### **Flooding**

##### **Environmental objective and outcomes**

The construction and operation of the project aims to ensure that the risk and potential adverse impacts from flooding are avoided, minimised or mitigated to protect people, property and the environment.

- 9.58 Describe the history of flooding onsite and in proximity to the project site. Describe current flood risk for a range of annual exceedance probabilities up to the 0.1% annual exceedance probability (AEP) and probable maximum flood levels for the project site. Use flood modelling to assess how the project may potentially change flooding and run-off characteristics on-site and both upstream and downstream of the site. The assessment must consider all infrastructure associated with the project including levees, roads, and linear infrastructure, and all proposed measures to avoid or minimise impacts.
- 9.59 Evidence must be provided to demonstrate that the securing of storage containers of hazardous contaminants during flood events meets the requirements of schedule 8 of the EP Regulation.
- 9.60 Describe, illustrate and assess where any proposed infrastructure, including tailing storage facilities, dams, voids and waste rock dumps, disturbed and rehabilitated areas, would lie in relation to modelled flood levels, including the 0.1% AEP and probable maximum flood levels. Describe management actions to minimise impacts of flooding to mine infrastructure and manage in mine pit water post-flooding.
- 9.61 Assess the project's vulnerabilities to climate change (e.g. changing patterns of rainfall, hydrology, temperature and extreme weather events). Describe possible adaptation strategies (preferred and alternative) based on climate change projections for the project site.

#### **The Independent Expert Scientific Committee (IESC)**

- 9.62 The EIS must provide the information requirements contained in the IESC's [Information guidelines](#) (IESC 2024) including relevant information guidelines explanatory notes (e.g. uncertainty analysis, assessing groundwater-dependent ecosystems).

## Regulated structures

### Environmental objective and outcomes

The 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 potential consequences of the failure of a regulated structure on human life and the environment require that the highest standards are used for their design, construction, operation, modification and decommissioning. The industry, government and the Australian National Committee on Large Dams Inc. have published several guidelines, which are to be used to further develop objectives and outcomes for individual projects and the regulated structures they involve.

- 9.63 Conduct the impact assessments in accordance with the latest version of the department's guidelines on [Regulated structures—EIS information guideline](#) (ESR/2020/5307) (DESI 2024), [Structures which are dams or levees constructed as part of environmentally relevant activities](#) (ESR/2016/1934) (DESI 2024) and [Manual for assessing hazard consequence categories and hydraulic performance of structures](#) (ESR/2016/1933) (DESI 2024).
- 9.64 Describe the purpose of all dams or levees proposed on the project site. Show their locations on appropriately scaled maps, and provide plans and cross-sections, illustrating embankment lengths, heights and widths, spillways, discharge points, design storage allowances, and maximum volumes.
- 9.65 Describe and illustrate how dams and levees would be:
- (a) sited to avoid or minimise risks from flooding using flood mapping showing the 0.1% AEP and probable maximum flood
  - (b) located, constructed and operated to avoid, minimise and mitigate impacts on environmental values
  - (c) located and designed to maximise progressive rehabilitation and closure.
- 9.66 Undertake a consequence category assessment for each dam or levee, according to the criteria outlined in department's [Manual for assessing hazard consequence categories and hydraulic performance of structures](#) (ESR/2016/1933) (DESI 2024). The assessment must be undertaken for the three different failure event scenarios described in the department's manual, i.e. for seepage, overtopping and dam break. Regulated structures must comply with the [Manual for assessing hazard consequence categories and hydraulic performance of structures](#) (ESR/2016/1933) (DESI 2024) in accordance with schedule 8, division 2 of the EP Regulation.
- 9.67 Following the consequence category assessment, determine the consequence category ('low, significant, or high') according to table 1 of department's [Manual for assessing hazard consequence categories and hydraulic performance of structures](#) (ESR/2016/1933) (DESI 2024) and provide certified copies of the consequence category determination for each of the proposed dams or levees assessed.
- 9.68 Describe how risks associated with dam or levee failure, seepage through the floor, or embankments, and/or with overtopping of the structures will be avoided, minimised or mitigated to protect people, property and the environment.

## Flora and fauna

### Critical

### Environmental objective and outcomes

The activity will be operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.

There will be no potential or actual adverse effect on a wetland as part of carrying out the activity.

The project minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.

The location for the activity on a site protects all environmental values relevant to adjacent sensitive use.

The project manages the impacts on the environment by seeking to achieve ecological sustainability, including protected wildlife and habitat.



### Environmental objective and outcomes

Critical habitat receives special management considerations and protection through a management plan for the project.

The project avoids significant residual impacts to matters of national environmental significance (MNES) and matters of state environmental significance (MSES), mitigates impacts where they cannot be avoided, and offsets any residual impacts.

The project provides for the conservation of the marine environment, particularly the Great Barrier Reef Marine Park. The construction, operation and decommissioning of the project must be consistent with all statutory and regulatory requirements of the federal, state and local government and be consistent with their relevant plans, strategies, policies and guidelines that relate to the terrestrial, aquatic and marine ecological environment.

- 9.69 Conduct the impact assessment in accordance with relevant guidelines, including the latest version of the department's [EIS information guidelines](#) that cover [terrestrial ecology](#) (ESR/2020/5309) (DESI 2024), [aquatic ecology](#) (ESR/2020/5295) (DESI 2024), [coastal](#) (ESR/2020/5299) (DESI 2024), [groundwater dependent ecosystems](#) (ESR/2020/5301) (DESI 2024), [water](#) (ESR/2020/5312) (DESI 2024), [matters of national environmental significance](#) (ESR/2020/5304) (DESI 2024), and [biosecurity](#) (ESR/2020/5297) (DESI 2024).
- 9.70 Demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.

### **Biodiversity**

#### *Existing environment*

- 9.71 Identify, describe and map all terrestrial, and/ or aquatic (including groundwater dependent ecosystems) and/ or marine ecological values present or likely to be present within an area potentially affected either directly or indirectly by the project. Base the description on the desktop assessment, vegetation surveys, plant and animal species surveys, and the assessment of the condition of the vegetation communities and species habitats.
- 9.72 Describe all significant species and ecological communities, prescribed environmental matters listed as MNES and MSES, and all listed flora and fauna species, and regional ecosystems, on the project site and in its vicinity.
- 9.73 Describe the potential for significant species (e.g. listed threatened, near threatened or special least-concern species) to occur, or potentially occur, within the area potentially affected either directly or indirectly by the project. Show the location of significant species found during field surveys on suitable maps and figures and describe their habitat.
- 9.74 Include any other environmental value(s) that the desktop studies identified as occurring or potentially occurring in, and adjacent to, the project area (e.g. wildlife corridors, environmentally sensitive areas) and display them on maps and figures.
- 9.75 Describe the connectivity of habitats and the integrity of ecosystems.
- 9.76 Describe, with photographs and detailed mapping at suitable scales, the current extent of regional ecosystems, species habitat, threatened ecological communities, groundwater dependent ecosystems, wetlands and springs at the project area(s).

#### *Impact assessment*

- 9.77 Assess, describe, quantify and illustrate all potential direct and indirect significant impacts on terrestrial/ aquatic and/ or marine ecological values. Assess the impacts on all potentially affected areas, whether on or off the project site. Include all stages of the project from initial development through to rehabilitation.
- 9.78 Address in the assessment:
- (a) all significant species and ecological communities (MNES, MSES, MLES, listed threatened flora and fauna species and regional ecosystems)
  - (b) the conservation status of each identified ecological value under the *Nature Conservation Act 1992*, *Vegetation Management Act 1999* and the EP Act



- (c) the integrity of ecological processes, including habitats of listed threatened, near threatened or special least-concern species
- (d) interactions between terrestrial and aquatic ecosystems (including groundwater dependent ecosystems and stygofauna)
- (e) connectivity of habitats and ecosystems
- (f) the integrity of landscapes and places, including wilderness and similar natural places
- (g) biological diversity
- (h) chronic, low-level exposure to contaminants or the bio-accumulation of contaminants
- (i) direct and indirect impacts on terrestrial, aquatic or marine species and ecosystems whether acting individually or in combination. Relevant matters include vegetation clearing, hydrological changes, discharges of contaminants to water, air or land, noise, and the influence of climate change
- (j) impacts of waterway barriers on fish passage in all waterways mapped on the Queensland Waterways for Waterway Barrier Works spatial data layer
- (k) propose measures that would avoid the need for waterway barriers or propose measures to mitigate the impacts of their construction and operation

9.79 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*, the *Regional Planning Interests Act 2014*, the *Fisheries Act 1994* and the *Planning Act 2016*. Features to consider include regional ecosystems, environmentally sensitive areas, wetlands, nature refuges, protected areas and strategic environmental areas.

9.80 Specifically address any obligations imposed by State or Commonwealth legislation or policy or international treaty obligations.

9.81 Assess the cumulative impacts on terrestrial ecological values that could potentially occur because of the impacts of the project added to the past, present and reasonably foreseeable impacts of other activities in the region. Assess cumulative impacts at a local, subregional and bioregional scale and over time.

#### *Mitigation measures*

9.82 Propose effective and proven measures to avoid, minimise, mitigate and/or offset direct or indirect impacts on environmental values. In particular, address measures to protect or preserve any listed threatened, near-threatened or special least concern species. Describe the practicality, effectiveness and risks for each avoidance and mitigation measure. Include the timeframes in which the results would be delivered.

9.83 Justify how applying all proposed avoidance and management measures would result in acceptable outcomes for terrestrial, aquatic and/ or marine ecology. Describe how achieving the measures successfully will be monitored, measured and audited. Include provisions to regularly evaluate all the mitigation measures so that improvements may be made as new technologies and best practices evolve.

9.84 Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors. The assessment must consider the role of buffer zones in maintaining and enhancing riparian vegetation and wetlands to enhance water quality, promote habitat connectivity and provide habitat.

#### *Offsets*

9.85 After demonstrating that all reasonable on-site avoidance and mitigation measures are to be applied, identify whether the project will result in a significant residual impact (SRI) on MSES, requiring an offset with reference to the current versions of the [Queensland Environmental Offsets Policy](#) (EPP/2015/1658) (DES 2023) and [Significant Residual Impact Guideline 2014](#) (DEHP 2014) and the Queensland environmental offsets framework.

9.86 Propose offsets consistent with the applicable State and Commonwealth legislation or policies for:

- (a) Where a SRI will occur on a prescribed environmental matter as outlined in the Environmental Offsets Regulation 2014, the offset proposal(s) must demonstrate how any proposed land-based offset sites and their suitability and habitat quality, or alternative offset types, are consistent with the requirements

of Queensland's *Environmental Offsets Act 2014* and the latest version of the [Queensland Environmental Offsets Policy](#) (EPP/2015/1658) (DES 2023).

- (b) Where a Commonwealth offset policy requires an offset for a significant impact on a MNES, the offset proposal(s) must be consistent with the requirements of the EPBC Act environmental offsets policy.

9.87 Provide an offset proposal which outlines the proposed offset delivery approach to address the project's SRI on MSES and MNES. The document should:

- (a) Address both State and Commonwealth offset obligations, and clearly describe and illustrate the extent (such as in a map and table) of any SRI overlap between MNES and MSES jurisdictions.
- (b) For staged offsets, consider the full extent of potential impacts on prescribed environmental matters from the entire proposal as part of the SRI test.
- (c) For land-based offsets, assess the vulnerability and resilience of an offset site under climate change scenarios (e.g. reduced water availability and increased bushfire risk).

## Biosecurity

### Environmental objective and outcomes

The construction, operation and decommissioning of the project must ensure:

- the introduction and spread of weeds, pests (including marine pests) and disease, pathogens and contaminants are avoided or minimised
- existing weeds and pests, including marine pests, are controlled, including biosecurity threats and their management
- the performance outcomes correspond to the relevant policies, legislation and guidelines, and that sufficient evidence is supplied (through studies and proposed management measures) to show these outcomes can be achieved.

9.88 Conduct the impact assessment in accordance with the latest version of the department's [Biosecurity—EIS information guideline](#) (ESR/2020/5297) (DESI 2024).

9.89 Describe the current distribution and abundance of pest animals and weeds on the project site.

9.90 Describe the impact the project's construction and operation will have on the spread of pest animals, weed species and disease.

9.91 Propose detailed measures to remove, control and limit the spread of pests, weeds, diseases, pathogens and contaminants on the project site and any areas under the proponent's control. This includes declared plants and animals and restricted areas under Queensland's *Biosecurity Act 2014*, the Commonwealth *Biosecurity Act 2015* and weeds of national significance and designated pests under the Queensland *Public Health Act 2005*. All proposed measures are to be in accordance with biosecurity surveillance or prevention measures authorised under Queensland's *Biosecurity Act 2014* and aligned with local government pest management priorities.

9.92 Detail a monitoring program that would audit the success of biosecurity measures, identify whether objectives have been met, and describe corrective actions to be used if monitoring indicates objectives are not being met.

## Air

### Environmental objective and outcomes

The activity will be operated in a way that protects the environmental values of air.

9.93 Describe the existing air environment at the project site and the surrounding area and the airshed, including the background/ambient levels of those air contaminants. Include all available data from any site-specific air monitoring, the National Pollutant Inventory (NPI) reporting, and/or ambient air quality monitoring undertaken by the Queensland government.

9.94 Provide an emissions inventory and description of the characteristics of contaminants or materials that would be released from point and diffuse sources and fugitive emissions when carrying out the activity (point

source and fugitive emissions). The description must address the construction, commissioning, operation, upset conditions, and closure of the project.

- 9.95 Demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.
- 9.96 Predict the impacts of the releases from the activity on environmental values of the receiving environment using established and accepted methods and in accordance with the EP Regulation, Environmental Protection (Air) Policy 2019 and the latest version of the department's [Air—EIS information guideline](#) (ESR/2020/5294) (DESI 2024) and [Applications requirements for activities with impacts to air](#) (ESR/2015/1840) (DESI 2024). The impact prediction must:
- (a) Take into consideration the sensitivity and assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts.
  - (b) Address the cumulative impact of any 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 Environmental Protection (Air) Policy 2019 or not.
- 9.97 Describe the proposed mitigation measures to limit impacts from air emissions and how the proposed activity will be consistent with best practice environmental management. Address the compatibility of the project's air emissions with existing or potential land uses in surrounding areas. Potential land uses might be gauged from the zonings of local planning schemes, State Development Areas or other relevant planning frameworks.
- 9.98 Describe how the project's air emission objectives would be achieved, monitored, audited and reported, and how corrective actions would be managed for the life of the project.
- 9.99 Describe flare emissions if gas flaring will be used during the commissioning stages and/or during the emergency under normal operation. If the flare is expected to be used continuously for more than three months to incinerate the waste gases, then conduct the impact assessment from this source for inclusion in the EIS as a separate item of the assessment.

## Noise and vibration

Environmental objective and outcomes
The activity will be operated in a way that protects the environmental values of the acoustic environment.

- 9.100 Describe and illustrate the locations of any sensitive receptors that are listed in Schedule 1 of the Environmental Protection (Noise) Policy 2019. Also describe any other environmental values that could be impacted by emissions from the project.
- 9.101 Describe the sources and characteristics of noise and vibration that would be emitted during the construction, commissioning, operation, upset conditions, and closure of the project.
- 9.102 Conduct a noise and vibration impact assessment in accordance with the latest version of the department's [Noise and vibration—EIS information guideline](#) (ESR/2020/5305) (DESI 2024) and [Applications requirements for activities with noise impacts](#) (ESR/2015/1838) (DESI 2024). The assessment must address low-frequency (<200 Hz) noise emissions and potential cumulative impact of the project with other emissions of noise from any existing developments and known possible future development in the area.
- 9.103 Demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.
- 9.104 Describe how the proposed activity would be managed to be consistent with best practice environmental management, including the control of background creep in noise as outlined in the Environmental Protection (Noise) Policy 2019. The EIS must address the compatibility of the project's noise emissions with existing or potential land uses in surrounding areas. Potential land uses might be gauged from the zonings of local planning schemes, State Development Areas or other relevant planning frameworks.

- 9.105 Describe how the environmental management objectives for noise and vibrations would be achieved, monitored, audited and reported, and how corrective actions would be managed.

## Waste management

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

- 9.106 Conduct the impact assessment in accordance with the latest version of the department's [Waste—EIS information guidelines](#) (ESR/2020/5311) (DESI 2024) and [Application requirements for activities with waste impacts](#) (ESR/2015/1836) (DESI 2024).
- 9.107 Demonstrate that the project can meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.
- 9.108 Describe all the expected waste streams from the project activities during the construction, operational, rehabilitation and decommissioning phases of the project. Waste streams for resource projects would typically include: waste rock, tailings and coarse rejects from mining and mineral processing; and brackish, saline or mine affected water from all types of resource projects. Describe any potential regulated or prescribed waste streams in full detail.
- 9.109 Describe the quantity, and physical, chemical, and toxicological characteristics of each significant waste, any attributes that may affect its dispersal, chemical reactivity and persistence in the environment, and its associated risk of causing environmental harm.
- 9.110 Define and describe objectives and practical measures for protecting or enhancing environmental values from impacts from wastes.
- 9.111 Assess and describe the proposed management measures against the preferred waste management hierarchy, namely: avoid and reduce waste generation; cleaner production; reduce; recycle; reuse; reprocess and reclaim; waste to energy; treatment; disposal. This includes the generation and storage of waste.
- 9.112 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.
- 9.113 Detail waste management planning for the project, in particular how measures have been applied to prevent or minimise environmental impacts due to waste according to best practice criteria at each stage of the project.
- 9.114 Use a material/energy flow analysis to provide details of natural resource use efficiency (such as energy and water), integrated processing design, and any co-generation of power and by-product reuse.
- 9.115 Detail the geochemistry of all waste rock, including spoil, tailings and rejects. Assess the potential risks associated with this waste stream and describe the management of progressive placement and any disposal strategy to minimise any potential impacts on environmental values of the project area. Detail how high risk waste material will be managed in the rehabilitation plan.
- 9.116 Identify the quantity, quality and location of all potential discharges of water and contaminants by the project, including treated wastewater and sewage. Describe whether the discharges would be from point sources (whether uncontrolled and controlled discharges) or diffuse sources (such as irrigation to land of treated wastewater/sewage effluent) and describe the receiving environment (such as land or surface waters). Refer to the Water section of the TOR and [Water—EIS information guideline](#) (ESR/2020/5312) (DESI 2024) [for further guidance](#). For potential discharges to surface waters, provide detail to demonstrate consistency with the assessment approaches outlined in the guideline [Wastewater release to Queensland waters](#) (ESR/2015/1654) (DESI 2024). For potential discharges to groundwaters, provide an assessment using the appropriate approaches and guidelines listed in the [Water—EIS information guideline](#) (ESR/2020/5312) (DESI 2024). Note that the EP Act and EP regulation hold strict provisions in terms of waste discharges to groundwaters or sensitive areas.

- 9.117 Provide a risk assessment of the potential impacts on waters, in the near-field and far-field, resulting from controlled or uncontrolled discharges from the site. Address the following matters with regard to every potential discharge of contaminated water, contaminants or wastes:
- Describe the circumstances in which controlled and uncontrolled discharges might occur
  - Provide stream flow data and information on discharge water quality, including any potential variation in discharge water quality that will be used in combination with proposed discharge rates to estimate in-stream dilution and water quality. Chemical and physical properties of any wastewater, including concentrations of constituents, at the point of entering natural surface waters must be discussed along with toxicity of effluent constituents to human health, flora and fauna.
  - Provide an assessment of the available assimilative capacity of the receiving waters given existing water quality and other potential point source discharges in the catchment. Options for controlled discharge at times of natural stream flow must be investigated to ensure that adequate flushing of wastewater is achieved.
  - Provide water quality limits that are appropriate to maintain background water quality and protect other water uses
  - Describe the necessary streamflow conditions in receiving waters under which controlled discharges will be allowed.
- 9.118 Provide relevant information on existing and proposed sewage infrastructure relevant to ERA 63, by referring to relevant department policies and guidelines, depending on the proposed sewage collection and treatment infrastructure proposed the reuse and/or disposal of treated wastewater and sewage wastes generated.
- 9.119 Identify [end of waste codes](#) (Business Queensland 2024) under the *Waste Reduction and Recycling Act 2011* which may be relevant for the project. This may include minor construction, coal washing and processing, dust suppression, landscaping and revegetation, and sewage plant operations.
- 9.120 Proponents are responsible for determining if they have obligations under the *National Environment Protection (National Pollutant Inventory) Measure 1998 (NPI NEPM)* and ensuring that data provided meets the requirements of this Act and its subordinate legislation. The EIS is to identify the types and amounts of certain substances being emitted to air, land, and water and both on-site or off-site waste transfers that will be reported.

## Hazards and safety

### Environmental objective and outcomes

The construction and operation of the project must 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
- 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
- that any risk associated with explosives use, transportation, storage or manufacture is within an acceptable level, in accordance with the *Explosives Act 1999* and codes and standards including the *Australian Standard AS2187.1 Explosives - Storage, transport and use - storage*
- the project prevents or minimises the production of hazardous contaminants and waste
- if the production of hazardous contaminants and waste is unavoidable, the project treats and/or contains hazardous contaminants until their disposal at an approved facility.

- 9.121 Assess the vulnerability of the area to natural and induced hazards, including floods, bushfires and cyclones. Consider the relative frequency and magnitude of these events together with the risk they pose to the construction, operation and decommissioning of the project, as well as the rehabilitation of the site. Describe measures that would be taken to minimise the risks of these events.



- 9.122 Describe the potential risks to people and property that may be associated with the project in the form of a risk assessment for all components of the project and in accordance with relevant standards. The assessment must address the following matters:
- (a) The safety of employees during design and planning of the project.
  - (b) Potential hazards (including those associated with petroleum and gas pipelines, abandoned mines, explosive magazines and the storage and use of explosives as part of construction), accidents, spillages, fire and abnormal events that may occur during all stages of the project, including estimated probabilities of occurrence.
  - (c) Hazard analysis and risk assessment in accordance with:
    - i. *AS/NZS ISO 31000:2018 Risk management guidelines* (Standards Australia 2018) and with *HB203:2006 Managing environmental-related risk* (Standards Australia 2012).
    - ii. Consider the suite of risk assessments included in the relevant Local Disaster Management Group Plans and the Queensland State Risk Assessments available at <https://www.disaster.qld.gov.au/qermf/Pages/Assessment-and-plans.aspx> (State heatwave assessment, State Earthquake Risk assessment, Severe Wind Hazard Assessment)
    - iii. consider the Queensland Government [Climate action resources](#) (Queensland Government 2024a) including the [Queensland Future Climate Dashboard](#) (Queensland Government 2024d)
    - iv. the [Queensland Emergency Risk Management Framework](#) (Queensland Government 2024c) as the endorsed approach to disaster and emergency risk management in Queensland.
- 9.123 Consider geophysical risk management such as earthquakes. The State Earthquake Risk Assessment includes probabilities of major seismic events for all local government areas and must be used to inform risk consideration and management.
- 9.124 Address the potential cyclone and severe wind hazard and risk to the project and the heat and heatwave risk management refer to the State Heatwave Risk.
- 9.125 Demonstrate that any major hazard facility involving dangerous and hazardous materials is appropriately located in accordance with [State Development Assessment Provisions](#), Code 21, Hazardous chemical facilities (DSDMIP 2021).
- 9.126 Identify all hazardous substances and any explosives to be used, transported, stored, processed or produced and the rate of usage.
- 9.127 Evaluate the risks associated with the secure storage, use and transportation of explosives to ensure the risks are within an acceptable standard in accordance with *Australian Standard AS2187.1 Explosives - Storage, transport and use – storage* (AS2187.1) (Standards Australia 1998).
- 9.128 Identify the need for appropriate explosive licences and notice of proposed blasting prior to explosives use.
- 9.129 Potential wildlife hazards, including a development of a mosquito management plan in accordance with Queensland Health guidelines, natural events (e.g. cyclone, storm tide inundation, flooding, bushfire) and implications related to climate change and adaptation.
- 9.130 Describe natural hazards that may affect the site with at least a 1% annual exceedance probability or 100 year average reoccurrence interval level, including mapping of the potential hazard areas at the site.
- 9.131 How siting, layout and operation of the development will avoid or mitigate the risks, particularly with regard to the release of hazardous materials during natural hazard events.
- 9.132 How natural processes and the protective function of landforms and vegetation will be maintained in sea erosion and storm tide inundation areas.
- 9.133 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 proposed mitigation measures. Present an assessment of the overall acceptability of the impacts of the project in light of the residual uncertainties and risk profile.
- 9.134 As part of the emergency response plan include:



- (a) a bushfire management plan, certified by a suitably qualified person, in consultation with the Queensland Fire and Emergency Services addressing construction and operations, and including the following information at a minimum:
  - i. a bushfire hazard analysis
  - ii. mitigation strategies to achieve the relevant development outcomes in Part E of the State Planning Policy– Natural Hazards, Risk and Resilience (DSDMIP 2019a).
  - iii. provides details of the proposed ongoing management of fuel loads across the subject site through grazing or mechanical means including the asset protection zone proposed.
- (b) a safety and emergency management plan addressing construction and operations, and including the following information at a minimum:
  - i. evacuation plans for the construction and operation phases of the development
  - ii. safety management plans and emergency response procedures in consultation with the state and regional emergency service providers (including Queensland Fire and Emergency Services) and provide an adequate level of training to staff who will be tasked with emergency management activities.

9.135 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.

9.136 Outline any consultation undertaken with the relevant emergency management authorities, including the local disaster management group.

## Cultural heritage

### Environmental objective and outcomes

The construction and operation of the project must achieve the purposes of the *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003* with respect to the project site and ensure that the nature and scale of the project does not compromise the cultural heritage significance of a heritage place or heritage area.

- 9.137 Conduct the impact assessment in accordance with the latest version of the department's [Aboriginal and Torres Strait Islander cultural heritages—EIS information guideline](#) (ESR/2020/5296) (DESI 2024) and [Non-Indigenous cultural heritage—EIS information guideline](#) (ESR/2020/5302) (DESI 2024).
- 9.138 Unless section 86 of the *Aboriginal Cultural Heritage Act 2003* or *Torres Strait Islander Cultural Heritage Act 2003* applies, the proponent must develop a Cultural Heritage Management Plan in accordance with the requirements of Part 7 of these Acts.
- 9.139 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 must be conducted by an appropriately qualified cultural heritage practitioner. Provide strategies to mitigate and manage any negative impacts of the project on non-Indigenous cultural heritage values and enhance any positive impacts.

## Social

### Environmental objective and outcomes

The construction, operation and closure of the project must ensure that:

- adverse social impacts arising from the project are avoided or mitigated
- benefits for local and regional communities are enhanced.

- 9.140 Prepare a social impact assessment (SIA) for the project that is consistent with the requirements of the *Strong and Sustainable Resource Communities Act 2017* (SSRC Act) and the Coordinator-General's [SIA guideline](#) (DSDI 2023).

- 9.141 Develop the SIA in consultation with the Office of the Coordinator-General, Department of State Development, Infrastructure, Local Government and Planning.
- 9.142 Include in the SIA detailed assessment of the following five key matters in accordance with the [SIA guideline](#) (DSDI 2023):
- (a) community and stakeholder engagement
  - (b) workforce management
  - (c) housing and accommodation
  - (d) local business and industry procurement
  - (e) health and community well-being.

### **Key SIA outcomes**

- 9.143 Describe in the SIA:
- (a) the existing social environment of communities that are potentially impacted by the project
  - (b) the potential social impacts (both positive and negative) of the project, as well as how they will be managed and monitored
  - (c) how the project will contribute to enhancing the sustainability of these communities.

### **Consultation for the SIA**

- 9.144 The SIA is to be informed by an inclusive and collaborative community and stakeholder engagement process, consistent with the SIA guideline. Community and stakeholder engagement is to be iterative throughout preparation of the SIA. Engagement with local government must commence at an early stage.
- 9.145 Demonstrate evidence in the SIA of consultation outcomes from key stakeholder groups (refer to Appendix 1 in the [SIA guideline](#)). The SIA must be informed by the results of community and stakeholder engagement.

### **Workforce arrangements**

- 9.146 Include in the SIA a workforce profile summary for the construction and operational phases of the project, including the estimated proportion of local and fly-in, fly-out workers. This is to be informed by an analysis of the capacity of towns within 125km radius of the project to:
- (a) provide workers for the construction and operational phases of the project, and
  - (b) receive workers and their families who move to the towns
  - (c) address barriers that may impact choice for workers to live local.
- 9.147 The SIA will need to include a target for obtaining a local workforce and set the maximum proportion of FIFO workers for the project. This is to be supported by a rationale to ensure local benefit.
- 9.148 Identify in the SIA measures for prioritising the recruitment of workers from local and regional communities. This includes describing how the recruitment hierarchy for workers in section 9(3A) of the SSRC Act will be implemented.
- 9.149 The SIA is to consider the impact of new technologies on the operation of the project including possible impacts on the proposed workforce composition, potential new labour requirements and opportunities for local training and development (where relevant).
- 9.150 Where a FIFO workforce is proposed, identify measures for managing this workforce in accordance with the [SIA guideline](#) (DSDI 2023), as well as sections 6 and 8 of the SSRC Act and the relevant provisions in the *Anti-Discrimination Act 1991*.
- 9.151 The information provided in the EIS (including the SIA) will inform the Coordinator-General's decision under section 12 of the SSRC Act on whether personnel employed during the construction phase of the project should be protected by the SSRC Act's anti-discrimination and 100 per cent FIFO prohibition provisions.

### ***Social impact management plan***

- 9.152 Include in the SIA a social impact management plan (SIMP) with management measures to mitigate the impacts and enhance the potential benefits identified in the assessment of the five key matters. The SIMP must describe a practical basis for the implementation of management measures.
- 9.153 The SIMP is to include timeframes for implementation of management measures, key performance indicators, roles and responsibilities, stakeholders and potential partnerships. Potential partnerships include opportunities for linkages with other projects planned or operating in the area and possible alignment with existing strategies or proposed new initiatives that would benefit the management of any cumulative social impacts.
- 9.154 The SIMP must include a process of review throughout the project lifecycle to ensure management measures continue to be effective and, where the stated outcomes are not achieved, are amended to appropriately mitigate impacts.

## **Economic**

Environmental objective and outcomes
<p>The construction and operation of the project must ensure that:</p> <ul style="list-style-type: none"><li>• avoid or mitigate adverse economic impacts arising from the project</li><li>• capitalise on opportunities potentially available for capable local industries and communities</li><li>• create a net economic benefit to the region and state.</li></ul>



- 9.155 Identify the potential adverse and beneficial economic impacts of the project on the local and regional area and the State. Estimate the costs and benefits and economic impacts of the proposal using both regional impact analysis and cost–benefit analysis. Undertake the analysis in accordance with the Coordinator-General's [Economic impact assessment guideline](#) (DSDI 2021). Separately address each stage of the project (e.g. construction, operation and decommissioning).
- 9.156 Identify recreational, commercial or indigenous fisheries potentially impacted by the project and undertake consultation with these stakeholders.
- 9.157 Provide an analysis of the economic costs to agricultural activities on land including any impacts to supply chains.
- 9.158 Provide an analysis of the project's contribution to climate change-related economic and financial risks and benefits to Queensland based on best practice assessment frameworks, such as the Task Force on Climate-related Financial Disclosures (TCFD) framework. This analysis must be based on a scenario consistent with achieving the goals of the Paris Agreement (of which Australia is a signatory) to limit global warming to as close to 1.5°C as possible. Additional scenarios can be included for comparison, however, the central assessment should be aligned with 1.5°C.
- 9.159 Consider the 'social cost of carbon' (or other form of carbon cost) in cost benefit analysis for the project. Provide an analysis of the economic costs of developing and implementing GHG measures to meet the Queensland's Government's GHG emission reduction and clean energy targets as legislated in the *Clean Economy Jobs Act 2024* and *Energy (Renewable Transformation and Jobs) Act 2024*.
- 9.160 Discuss and quantify the economic costs of scope 3 GHG emissions.
- 9.161 Discuss potential alternative pricing scenarios for the social cost of carbon for scope 1, 2 and 3 GHG emissions, including scenarios using the current European Union Emission Allowance Units price (or the price at the time of drafting the revised draft EIS) and futures prices by the European Union.
- 9.162 Discuss costs and risks associated with difficulty securing debt finance, insurance or other financial services, as a result of the divestment policies of major financial institutions.

## Transport

### Environmental objective and outcomes

The construction and operation of the project must aim to:

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

- 9.163 The EIS must include a clear summary of the total transport task for the project, including workforce, inputs and outputs, during the construction, operational and decommissioning phases of the project. Proponents must make appropriate choices for modes of transport to ensure efficiency and minimise impacts on the community.
- 9.164 Undertake the impact assessment in accordance with the department's [Transport—EIS information guideline](#) (ESR/2020/5310) (DESI 2024). The methods used must include the following matters:
- (a) for impacts on roads: a traffic impact assessment report in accordance with the [Guide to traffic impact assessment](#) (TMR 2019), with traffic data in Department of Transport and Main Roads-suitable formats.
  - (b) for impacts on rail level crossings: the [Australian Level Crossing Assessment Model](#) (ALCAM 2024).
- 9.165 Present the transport assessment for each project-affected mode (road, rail, air, port 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).
- 9.166 Discuss how identified impacts will be mitigated for each transport mode. Mitigation strategies may include works, contributions or other strategies that can be documented in a road-use management plan. The strategies must be prepared in close consultation with relevant transport authorities, including local government and the Queensland Police Service. They must consider the transport authorities' works programs and forward planning, and be in accordance with the relevant methodologies, guidelines and design manuals.

## Matters of National Environmental Significance under the EPBC Act

- 9.167 The EIS must state and address the controlling provisions and describe the particular aspects of the environment leading to the controlled action declaration under the EPBC Act. Enough information about the project and its relevant impacts must be provided to allow the Australian Government's Environment Minister to make an informed decision whether to approve the project under the EPBC Act.
- 9.168 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. This must be consistent with the department's [MNES—EIS information guideline](#) (ESR/2020/5304) (DESI 2024) for additional guidance.
- 9.169 Refer to Appendix 3 for the complete TOR for MNES under the EPBC Act requirements.
- 9.170 When water resources for a CSG development or large coal mine are a controlling provision, the project's EIS is referred to the IESC. The IESC provides scientific advice to decision makers on potential impacts from CSG and large coal mining developments on Australia's water resources. That typically occurs in time for the IESC's views to be considered by the administering authority when deciding the suitability of the project and developing conditions for any approval.

## 10. Commitments

- 10.1 Provide a consolidated description of all the proponent's commitments to implement avoidance, mitigation, management and design measures (including monitoring programs and management plans) that would need to be applied to meet the predicted project outcomes. Should the project proceed, these commitments would

be carried over into conditions as relevant.

## 11. Conditions

- 11.1 Propose conditions that may be placed on the EA and any other required approvals or licenses. For EA conditions refer to the Queensland Government's [Environmental authority conditions](#) website (Business Queensland 2023) and/or propose site-specific conditions relevant to the project.
- 11.2 As part of the PRC plan (refer to Section 9.3) provide a PRCP schedule which sets out the milestones and conditions that relate to the completion of progressive rehabilitation and mine closure. The PRC plan must be consistent with the department's guideline [Progressive rehabilitation and closure plans](#) (ESR/2019/4964) (DES 2023).

## 12. Appendices to the EIS

- 12.1 Appendices to the EIS must include the technical data collected, and evidence used to develop assertions and findings in the main text of the EIS.
- 12.2 No significant issue or matter, including statements of uncertainty associated with assertions and findings, 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 and sub-sections of the EIS where each requirement of the TOR is addressed.

## 13. Spatial and electronic data presentation

- 13.1 Maps included in the EIS must 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 Geocentric Datum of Australia 2020 (GDA2020). In relatively flat locations, contours must be at one metre intervals. Present geographical coordinates as latitude and longitude against the GDA2020.
- 13.2 Provide spatial data presented in the EIS to the department in appropriate electronic form, such as shape files. This includes all water quality, wastewater quality data and geological structures, such as aquifers, faults and economic resources. Refer to the department's guideline [Spatial information submission](#) (ESR/2018/4337) (DESI 2024) for information on the format for spatial information.
- 13.3 For rehabilitation matters, provide spatial information in accordance with the department's guideline [Progressive rehabilitation and closure plans](#) (ESR/2019/4964) (DES 2023) and the department's application form [Submission of a progressive rehabilitation and closure plan](#) (ESR/2019/4957) (DESI 2024).
- 13.4 If the project is an extension or a continuation of an existing site, submit all relevant historical data from the initial project/s. If the existing site is already set up in the department's WaTERS database water tracking and electronic reporting system, submit all historical water monitoring data via [WaTERS](#).



## Appendix 1 Glossary

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

Acronym/abbreviation	Definition
AHD	Australian Height Datum
CDA	Co-disposal area
CHPP	Coal handling and preparation plant
CSG	coal seam gas
CMA	cumulative management area
Department	the Queensland Department of Environment, Science and Innovation
EA	environmental authority
EIS	environmental impact statement
EP Act	<i>Environmental Protection Act 1994</i>
EP Regulation	Environmental Protection Regulation 2019
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ERA	environmentally relevant activity
FIFO	fly-in-fly-out
GDA2020	Geocentric Datum of Australia 2020
GHG	Greenhouse gases including carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ), nitrous oxide (N <sub>2</sub> O), sulphur (or sulfur) hexafluoride (SF <sub>6</sub> ), hydro fluorocarbons (HFCs) and perfluorocarbons (PFCs)
IBP benchmark	International Best Practice (IBP) benchmark emission limits
IESC	Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development
MNES	matters of national environmental significance
Kestrel	Kestrel Coal Resources Pty Ltd
MDL	Mineral development licence
MIA	Mine infrastructure area
MSES	matters of state environmental significance
Mtpa	million tonnes per annum
NGER Act	National Greenhouse Energy Reporting Act 2007
NPI	National Pollutant Inventory
PRC plan	progressive rehabilitation and closure plan
PRCP schedule	progressive rehabilitation and closure plan schedule

Acronym/abbreviation	Definition
ROM	Run of mine
SIA	social impact assessment
SSRC Act	Strong and Sustainable Resource Communities Act 2017
TOR	terms of reference

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## Appendix 2 Policies, guidelines and references

Note: These references were correct at the time of publication. Where more recent versions are available, these must be used. For all Department of Environment, Science and Innovation publications, the latest version of a publication can be found by using the publication number as a search term at the Queensland Government website [www.qld.gov.au](http://www.qld.gov.au).

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## Appendix 3 Terms of reference for matters of national environmental significance (MNES) under the *Environment Protection and Biodiversity Conservation Act 1999* requirements

The proposed project was referred on 23 April 2024 to the Australian Government (EPBC 2024/09792). On 22 May 2024, the Australian Government determined the proposed project to be a controlled action under the Commonwealth EPBC Act.

The controlling provisions are:

- World Heritage properties (sections 12 and 15A)
- National Heritage places (sections 15B and 15C)
- Listed threatened species and communities (sections 18 and 18A)
- Great Barrier Reef Marine Park (sections 24B and 24C)
- A water resource, in relation to unconventional gas development and large coal mining development (sections 24D and 24E)

The proposed project will be assessed as an accredited assessment between the Commonwealth and the State of Queensland (section 87(4) of the EPBC Act) using the EIS prepared under the EP Act. The TOR should be addressed by the proponent in a stand-alone section that primarily focuses on the MNES listed above. This section (henceforth called the 'MNES section') should contain sufficient information to be read alone with reference to technical data or supplementary reports where appropriate. Any detailed technical information to support the text in the MNES section should be included as appendices to the draft EIS.

### 1. General Content

The MNES section must enable interested stakeholders and the Minister to understand the environmental consequences of the proposed development. Information provided in the MNES section should be objective, clear, and succinct and, where appropriate, be supported by maps, plans, diagrams or other descriptive detail. The body of the MNES section is to be written in a clear and concise style that is easily understood by the general reader. Technical jargon should be avoided wherever possible. Cross-referencing should be used to avoid unnecessary duplication of text.

The level of analysis and detail in the MNES section should reflect the level of significance of the expected impacts on the environment. Any and all unknown variables or assumptions made in the assessment must be clearly stated and discussed. The extent to which the limitations, if any, of available information may influence the conclusions of the environmental assessment should be discussed.

The MNES section of the EIS must be a stand-alone chapter or appendix that:

- states and assesses each controlling provision and their potential impacts, including mitigation measures and any offsets for residual significant impacts on each protected matter and controlling provision relevant to the proposed action
- contains sufficient information to be read as a stand-alone document, providing references to further detailed information in appendices to the EIS where needed.

The MNES section must take into consideration the EPBC Act *Matters of National Environmental Significance Significant impact guidelines 1.1* (2013) and the EPBC Act *Significant impact guidelines 1.3: Coal seam gas and large coal mining developments— impacts on water resources* (2022) (<https://www.dcceew.gov.au/environment/epbc/publications>).

The MNES section is to take into consideration relevant conservation advices, recovery plans and threat abatement plans for listed threatened species and ecological communities.

The proponent must ensure that the MNES section assesses compliance of the action with principles of Ecologically Sustainable Development (ESD) and the objects of the EPBC Act. Provide a discussion on how the project will conform to the principles of ESD, as described under Part 1, section 3A of the EPBC Act:

- decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations
- if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation
- the principle of intergenerational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations
- the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making
- improved valuation, pricing and incentive mechanisms should be promoted.

The assessment of the potential impacts on Commonwealth matters must be done to the satisfaction of the Commonwealth Minister for the Environment and Water.

If it is necessary to make use of material that is considered to be of a confidential nature, the proponent must consult with the DCCEEW on the preferred presentation of that material, before submitting it to the Commonwealth Minister of the Environment for publication.

## 2. Format and Style

The MNES section must be written so that any conclusions reached can be independently assessed. To this end, all sources must be appropriately referenced using Harvard standard. The reference list should include the address of any Internet websites that were used as data sources.

Maps, diagrams and other illustrative material should be included in the MNES section. Further information on the presentation of maps and data can be found in the document [Guide to providing maps and boundary data for EPBC Act projects](#) (2021).

The proponent should consider the format and style of the document appropriate for publication on the Internet. The capacity of the website to store data and display the material may have some bearing on how the document is drafted.

The MNES section should include a list of abbreviations, a glossary of terms and appendices containing:

- a copy of these guidelines
- a list of persons and agencies consulted during the EIS
- contact details for the proponent
- the names of the persons involved in preparing the EIS and work done by each of these persons.

The MNES section must include an appendix of occurrence records (both sightings and evidence of presence) for all listed threatened and migratory species identified during field surveys for the proposed action. This data may be used by the department to update the relevant species distribution models that underpin the publicly available Protected Matters Search Tool (PMST).

The species occurrence records must be provided in accordance with the department's [Guidelines for biological survey and mapped data](#) (2018) using the department's [Species observation data template](#). Sensitive ecological data must be identified and treated in accordance with the department's [Sensitive Ecological Data – Access and Management Policy V1.0](#) (2016) or subsequent revision.

## 3. Description of the Action

This section must describe the proposal in sufficient detail to allow an understanding of all components of the proposal, and to determine potential environmental<sup>2</sup> impacts associated with the proposal.

Provide the background and context of the action including:

- the title of the action
- the full name and postal address of the designated proponent
- a clear outline of the objective of the action
- the location of the action
- the background to the development of the action
- 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
- the current status of the action
- the consequences of not proceeding with the action.

Provide the total size (in hectares) of the project site and the total size (in hectares) of the disturbance footprint. If the disturbance footprint is the same as the project site, the MNES section must include a statement to this effect.

All construction, operational and (if relevant) decommissioning components of the action should be described in detail. This should include the precise location (including coordinates) of all works to be undertaken, structures to be built or elements of the action that may have impacts on MNES.

The description of the action must also include details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts. At a minimum, this description is to also include details of:

- all infrastructure proposed to be constructed and construction methods
- ancillary infrastructure proposed to be constructed and any upgrades to existing ancillary infrastructure
- realignment or replacement of services, structures, access etc. required as result of the action
- establishment of new coal resource extraction areas which includes location, size, method of extraction of materials and transport of materials
- treatment of contaminated land, including method of treatment, disposal of waste and contaminated material, standards and minimum thresholds required for removal/disposal
- maximum life of the action, including construction, operation, decommissioning and rehabilitation. Include a mine plan schedule for the pre-construction, construction, operation, rehabilitation and decommissioning of ML 70301, ML 70481, and MDL 182, and for the co-disposal area on ML 1978
- number of jobs for the life of the action, including number of jobs for Indigenous and First Nations peoples
- associated works and supporting infrastructure deemed necessary as part of the action or safety works
- other activities including, but not limited to, material storage, fines and dust control management, weed and pest animal management, and waste management generally and management of spills/contaminants/pollutants (including prevention from entering waterways, groundwater and critical habitat).

The various elements of the project must be described in the text and illustrated with maps, diagrams, plans (at a suitable scale) and other information as required to provide sufficient context and basis for the identification and assessment of impacts. This includes the lot and plan numbers of where the action is located.

This section must include a map (or maps) which clearly identify all components of the action and boundaries of the proposed project's footprint including all infrastructure elements and development necessary for the project site. The information must present all the key aspects including stockpiles, plant location, services infrastructure, bunding of storage facilities, water storages and dam/s, access tracks and off-lease infrastructure components associated with the proposed project. This section must further include discussion of any environmental design features of the key facilities including bunding of storage facilities.

<sup>2</sup>Section 528 of the EPBC Act (1999) defines the 'environment' to include:



- (a) ecosystems and their constituent parts, including people and communities
- (b) natural and physical resources; and
- (c) the qualities and characteristics of locations, places and areas; and
- (d) heritage values of places; and
- (e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).

## 4. Feasible Alternatives

Describe any feasible alternatives to the action to the extent reasonably practicable, including:

- (a) if relevant, the alternative of taking no action
- (b) a comparative description of the impacts of each alternative on the MNES matters protected by controlling provisions of Part 3 of the EPBC Act for the action
- (c) sufficient detail to make clear why any alternative is preferred to another
- (d) short, medium and long-term advantages and disadvantages of the options
- (e) if no alternative, the reason to why this is the case.

## 5. Description of the Environment

Include a description of the environment of the project site and the surrounding areas (including adjacent, upstream and/or downstream) that may be affected by the action. It is recommended that this includes the following information:

- listed threatened species and ecological communities that are likely to be present in the vicinity of the site. Maps are to be provided to show native terrestrial and aquatic flora and fauna species and ecological communities
- vegetation communities within, and adjacent to, the project area including the area (in hectares) they each cover, and the percent (%) cover for each vegetation type
- terrestrial, subterranean and aquatic ecosystems, including key vegetation communities, and relevant watercourses information. Include the distance of the action to the relevant watercourses. Maps are to be provided to show terrestrial and aquatic ecosystems
- topography, geology, soil type and elevation across the project area
- native flora and fauna
- pest species and weed species within the project area and surrounding area
- important habitat areas and recognised populations of listed threatened species and ecological communities
- surface water and groundwater hydrology and quality for all watercourses and aquifers within the project area that are likely to be impacted by the action
- potential groundwater dependent ecosystems, including associated with unnamed watercourses/water features within and surrounding the project area
- cultural heritage values, people and communities, and other relevant social and economic considerations
- historical anthropogenic uses of the project area, intensity and longevity of that use, and existing condition of the overall environment within, adjacent to, downstream and upstream of the project area
- ancillary transport roads and the surrounding areas that may be affected by the action (this may also include areas downstream of the project site).

## 6. Listed Threatened Species and Communities (Section 18 & Section 18A)

It is the proponent's responsibility to be aware of any changes to the distribution of listed threatened species and communities and information available in the Species Profile and Threats (SPRAT) database. The proponent must ensure that a recent Protected Matters Search Tool (PMST) report has been generated and considered before finalising the MNES section. This PMST must be provided as an attachment to the MNES section.

The MNES section must provide information about the habitat for and presence of any listed threatened species and ecological communities identified as potentially being significantly impacted by the proposed action, including, but not limited to:

- Threatened ecological communities:
  - Brigalow (*Acacia harpophylla* dominant and co-dominant) Threatened Ecological Community – Endangered
  - Natural Grasslands of the Queensland Central Highlands and northern Fitzroy Basin Threatened Ecological Community – Endangered
- Threatened plants:
  - Bluegrass (*Dichanthium setosum*) – Vulnerable
  - King Blue-grass (*Dichanthium queenslandicum*) – Endangered
- Threatened mammals:
  - Corben's Long-eared Bat (*Nyctophilus corbeni*) – Vulnerable
  - Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus*) – Endangered
- Threatened birds:
  - Grey Falcon (*Falco hypoleucos*) – Vulnerable
  - Squatter Pigeon (southern) (*Geophaps scripta scripta*) – Vulnerable
- Threatened reptiles:
  - Collared Delma (*Delma torquata*) – Vulnerable
  - Dunmall's Snake (*Furina dunmalli*) – Vulnerable
  - Fitzroy River Turtle (*Rheodytes leukops*) – Vulnerable
  - Grey Snake (*Hemiaspis damelii*) – Endangered
  - Ornamental Snake (*Denisonia maculata*) – Vulnerable
  - Southern Snapping Turtle (*Elseya albagula*) – Critically endangered
  - Yakka Skink (*Egernia rugosa*) – Vulnerable

**Note:** The above list may not be a complete list of listed threatened and migratory species and ecological communities that may or are likely to be impacted by the proposed action. It is the proponent's responsibility to ensure that any listed threatened and migratory species and ecological communities at the time of the controlled action decision, which will or are likely to be impacted by the project, are assessed for the Minister or the delegate's consideration. Any listing events (e.g., the listing or up-listing of a species) that occur after the controlled action decision do not affect the assessment and approval process.

The structure of the assessment of listed threatened species and communities in the MNES section must include the following:

- (a) Description of the listed threatened species and communities

Describe each listed threatened species and ecological community, including EPBC listing status, distribution, habitat, abundance, life history etc. These descriptions are to align with the information in the SPRAT database and relevant DCCEE documents.

(b) Desktop analysis

Describe the desktop assessment methodology used to inform the field surveys within, adjacent to, downstream and upstream of the project area. The MNES section must identify and describe historical records of listed threatened species and ecological communities in the broader region. All known records must be supported by an appropriate source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.) and include the year of the record and a brief description of the habitat in which the record was identified.

(c) Survey effort

Provide details of the scope, methodology, timing and effort of field surveys (which must be undertaken by qualified species experts or ecologists with demonstrated experience in detecting the relevant threatened species or ecological communities) within, adjacent to, downstream and upstream of the project area. Provide details of:

- i. how the surveys were undertaken in accordance with relevant Commonwealth and State guidelines or best practice survey guidelines at the time of the surveys
- ii. if relevant, the justification for divergence from relevant Commonwealth and State guidelines at the time of the surveys
- iii. any limitations associated with the survey which may have impacted on the results, including but not limited to, rain events, resource limitations (time, equipment failure), inadequate sampling and/or effort.

Surveys are to be of a suitable standard, including the scope, timing and spatial and temporal replication, to be able to detect cryptic or difficult to detect terrestrial and aquatic species. Surveys are to also target areas upstream, downstream and adjacent to the project area, particularly for species which regularly disperse through the landscape or aquatic environments (particularly seasonally) and/or have large home ranges.

Attach all relevant ecological surveys referenced in the referral as supporting documents to the MNES section.

(d) Survey outcomes

State the total number of records (individuals or evidence of presence) of listed threatened species and ecological communities within, adjacent to, upstream and downstream of the project area. Where relevant, also identify and describe known and historical records of listed threatened species in the broader region (e.g., highly mobile, transient, or cryptic species). All records are to include the year of the record and a brief description of the habitat in which the record was identified. Include maps that show the extent of listed threatened species or the area of ecological communities, including current and historical records. All known records must be supported by an appropriate source (i.e., Commonwealth and State databases, Queensland Government's WildNet, Atlas of Living Australia, published research, publicly available survey reports, etc.).

(e) Habitat assessment

Provide a robust assessment of the potential habitat available within, adjacent to, upstream and downstream of the project area for listed threatened species and ecological communities. This is to include the assessment of specific habitat requirement/s relevant to each listed threatened species and ecological community (e.g. breeding, foraging, dispersal, known important habitat, suitable habitats, roosting, etc.).

Habitat assessments are to be derived from information obtained from:

- i. field surveys and vegetation assessments
- ii. the SPRAT database
- iii. relevant DCCEE documents (e.g. approved conservation advices, approved recovery plans, listing advices, draft referral guidelines, etc.)

- iv. published research and other relevant sources (where relevant).

Detailed mapping of habitat type/s for relevant listed threatened species and ecological communities that are found to be, or may potentially be, present within, adjacent to, upstream and downstream of the project area is to be included in the MNES section, and must:

- i. be specific to the habitat assessment undertaken for each listed threatened species and ecological community
- ii. include an overlay of the disturbance footprint
- iii. include known records of individuals (or evidence of individuals) derived from desktop analysis and/or field surveys
- iv. consider the regional context and describe the connectivity of habitat in the broader landscape.

The MNES section must not just consider Queensland Regional Ecosystem (RE) descriptions and mapping to determine habitat for listed threatened species; habitat assessments are to consider and align with the information in the SPRAT database and relevant DCCEEW documents. However, some Queensland REs align with the descriptions in the SPRAT database for some ecological communities and therefore the use of Queensland REs is acceptable in these cases. If this is the case, please provide details on what Queensland REs are aligned with the ecological communities.

Provide the total amount of each habitat (in hectares) in the project area for each listed threatened species and ecological community.

Habitat assessments must provide estimates for habitat quality for each protected matter. Habitat quality should be assessed using the same approach/scoring mechanism as is used for any offset site (if relevant). The method applied must be suitable and targeted for each protected matter.

DCCEEW considers it is not unreasonable that a species may use a project area at some point in time if the vegetation and/or habitat feature/s to support its requirements are present. As such, even if a listed threatened species and/or community is not recorded during field surveys, the potential for occurrence of listed threatened species and communities is to also be considered and assessed in the MNES section.

(f) Impact assessment

Describe and assess all relevant short-term and long-term impacts (direct, indirect and offsite impacts (upstream, downstream, facilitated, cumulative)) to listed threatened species and ecological communities and any other listed threatened species and communities that are found to be or may potentially be present in areas that may be impacted by the action.

The impact assessment must include consideration of the requirements in the 'Relevant Impacts' section below.

- i. For threatened ecological communities, the total direct impact (in hectares) to each identified patch within, adjacent and downstream of the project area is to be provided in the MNES section compared to its current extent. Further, the impact assessment for ecological communities is to include a discussion on the post-impact viability of each individual patch within, adjacent to, and downstream of the project area to be directly impacted from fragmentation as a result of vegetation clearance.
- ii. Provide the total amount of each type of habitat (in hectares) in the disturbance footprint for each listed threatened species and ecological community that will be impacted by the project, the quality of the habitat impacted, and quantification of impacted individuals (where relevant).
- iii. Assess the impacts of habitat fragmentation, edge effects and barriers in the project area and surrounding areas, including consideration of species' movement patterns.
- iv. Assess how changes to hydrology associated with the proposed action may impact on listed threatened species and communities, taking into consideration both surface and groundwater dependence.
- v. Assess the likely duration, intensity, frequency, magnitude and geographic extent of impacts to MNES as a result of the proposed action.

- vi. Discuss whether the impacts are likely to be repeated, for example as part of maintenance.
- vii. Assess the impacts of noise, vibration, dust and vehicle strike resulting from the construction and operation of the project to habitat in the project area and surrounding areas.
- viii. Identify which component/s and stage/s of the action and/or consequential actions are of relevance to each listed threatened species and/or ecological community.
- ix. A risk assessment for all identified risks to threatened species and ecological communities should be conducted and documented.

(g) Avoidance, mitigation and management measures

Describe all relevant species-specific measures proposed to avoid, mitigate and manage potential impacts on listed threatened species and ecological communities as required in the 'Avoidance, Mitigation and Management' section below.

(h) Significant impact assessment

After consideration of the proposed avoidance, mitigation and management measures, provide an assessment of the likelihood of residual impacts on relevant listed threatened species and ecological communities. The significant impact assessment is to consider the EPBC Act *Matters of National Environmental Significance Significant impact guidelines 1.1* (2013).

The MNES section must provide a clear and definitive conclusion (i.e. 'likely' or 'unlikely'), including the extent and nature, of residual significant impacts on relevant listed threatened species and ecological communities to align with the EPBC Act *Environmental Offsets Policy* (2012).

(i) Statutory requirements

Where relevant, discuss how the proponent has had regard to relevant approved conservation advice/s. The MNES section must demonstrate, with supporting evidence, that the action will not be inconsistent with 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)
- iv. a recovery plan or threat abatement plan.

**Note:** In deciding whether or not to approve the taking of the action, the Minister must not act inconsistently with a current recovery plan or threat abatement plan (s 139(1) of the EPBC Act). Section 139(2) of the EPBC Act additionally provides that if:

- a) the Minister is considering whether to approve, for the purposes of a subsection of section 18 or section 18A, the taking of an action; and
- b) the action has or will have, or is likely to have, a significant impact on a particular listed threatened species or a particular listed threatened ecological community;

the Minister must, in deciding whether to so approve the taking of the action, have regard to any approved conservation advice for the species or community.

## 7. A Water Resource, in relation to Unconventional Gas Development and Large Coal Mining Development (Section 24D & Section 24E)

The National Partnership Agreement on Coal Seam Gas and Large Coal Mining, 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 Unconventional Gas Development and Large Coal Mining Development (IESC) for advice. The IESC provides scientific advice to



decision makers on potential impacts from unconventional gas and large coal mining developments on Australia's water resources.

The IESC's *Information guidelines for proponents preparing coal seam gas and large coal mining development proposals* (2024) outline the information considered necessary to enable the IESC to provide robust scientific advice to relevant decision-makers on water-related impacts of unconventional gas and large coal mining projects. The proponent should ensure that all the information outlined in the IESC Information Guidelines is provided in the environmental impact statement. Historic and contemporary data should be included.

The EIS must describe and assess the impacts to water resources giving consideration to the EPBC Act *Significant impact guidelines 1.3: Coal seam gas and large coal mining developments— impacts on water resources* (2022).

Provide information on any ground-truthing surveys to confirm the presence of water dependent flora and fauna.

(a) Groundwater

- i. Provide information and data to characterise the current condition of all groundwater systems present at the project area, including but not limited to groundwater levels/potentiometric surface, hydraulic parameters, groundwater flow, inter-aquifer connectivity, groundwater-surface water interactions and groundwater quality.
- ii. Develop robust conceptual and numerical models that provide information on the potential future impacts to all groundwater systems and potential aquitards. Use the modelling and field data to assess the causes, pathways and receptors of potential impacts to groundwater.
- iii. Provide information to identify and assess risks and impacts to all groundwater resources (and dependent flora and fauna) in the project area.

(b) Surface water

- i. Provide information on the current baseline condition and characterisation of surface water hydrology and quality in the project area and surrounding area. Consider the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2018), or updated revisions.
- ii. Provide details of the potential impacts from creek diversions in relation to:
  - surface water baseflows, flow and no-flow duration, seasonality, and other factors that could alter surface water regimes (such as high rainfall events)
  - altered surface water-groundwater interactions
  - potential impacts to terrestrial and aquatic ecology.
- iii. Provide a detailed impact assessment for surface water resources (and dependent flora and fauna) in the project area and downstream of the project area and in the surrounding area.
- iv. Provide information to identify and assess risks to all surface water resources (and dependent flora and fauna) in the project area.

(c) Groundwater dependent ecosystems

- i. Provide information on the groundwater dependent ecosystems and provide details of the groundwater dependency of vegetation in the project area and surrounding area.
- ii. Provide information including using a robust numerical groundwater model to evaluate how changes in groundwater flux may impact on the groundwater dependent ecosystems.
- iii. High-confidence terrestrial groundwater dependent ecosystems have been identified in the project area. Provide ground-truthing survey methodologies for determining the abundance of these communities and assess groundwater dependence. This information should include, but is not limited to:
  - survey timing and whether seasonal changes to groundwater dependency have been sufficiently characterised in the methodology

- a comparison of current ecosystem condition to historical ecosystem condition. This assessment should assess the impact of the action and aid in development of monitoring programs
  - groundwater dependency should be assessed using techniques such as leaf water potential and isotope studies.
- iv. Provide information of ecological communities that are dependent on groundwater, including any wetlands in the project area in relation to the:
- presence and abundance of ecological communities (flora and fauna) relying on groundwater in the project area – using the surveying techniques outlined in the *Information Guidelines Explanatory Note: Assessing groundwater-dependent ecosystems* (Doody et al. 2019) and relevant state guidelines
  - studies of baseline water quality on wetlands in the project area
  - likely nature and extent of impacts in the project area, as a result of the project (e.g. loss of ecological communities and habitat, degradation of water quality, reduced water availability).
- v. Provide information on stygofauna, including sampling methodology and analyses, following the guidelines in Department of Science, Information Technology and Innovation *Guideline for the Environmental Assessment of Subterranean Aquatic Fauna – Sampling methods and survey considerations* (2015), including, but not limited to:
- survey timing (i.e. over how many years the pilot survey was completed, and if seasonal changes were adequately accounted for)
  - survey methods and techniques for sampling stygofauna
  - bore mapping (i.e. which bores were sampled for stygofauna in the project area, and how many bores were sampled).
- vi. Sample bores in relevant aquifers to confirm the presence of stygofauna and to confirm their dependency on groundwater in the project area.
- vii. Provide an evidence-based assessment that the potential impacts (due to dewatering and groundwater quality degradation) and expected depletion of aquifers will not affect other water users, aquifers, and associated environmental values.

Independent Expert Scientific Committee on Unconventional Gas Development and Large Coal Mining Development (IESC) Explanatory notes

Consider and apply the guidance in the IESC Explanatory notes where applicable:

- (a) *Uncertainty analysis for groundwater modelling* (Middlemis and Peeters, 2023)
- (b) *Assessing groundwater-dependent ecosystems* (Doody et al., 2019)
- (c) *Deriving site-specific guideline values for physico-chemical parameters and toxicants* (Huynh and Hobbs, 2019)
- (d) *Characterisation and modelling of geological fault zones* (Murray and Power, 2021)
- (e) *Subsidence associated with underground coal mining* (Commonwealth of Australia, 2023).

## 8. The Great Barrier Reef

This section is to address the following controlling provisions:

- The world heritage values of a declared World Heritage property (sections 12 & 15A)
- The national heritage values of a National Heritage place (sections 15B & 15C)
- The environment in the Great Barrier Reef Marine Park (sections 24B & 24C).

There is no need to duplicate information relevant to the values of the Great Barrier Reef World Heritage Area and

## Great Barrier Reef National Heritage Place.

### Description

- (a) Provide a description of the environment of the Great Barrier Reef Marine Park that occurs downstream of the project area, and which may be impacted by the proposed action, including information about the location, physical features, condition, historical context, and current uses.
- (b) Provide reference to the Outstanding Universal Values of the Great Barrier Reef World Heritage Area. These can be accessed here: <https://www.dcceew.gov.au/parks-heritage/heritage/places/world/gbr>.
- (c) Provide reference to the National Heritage values of the Great Barrier Reef National Heritage Place. These values are available at: <https://www.environment.gov.au/cgi-bin/ahdb/search.pl>. Describe any significant cultural values relevant to the area which may be impacted.

### Impact assessment

- (a) Assess the potential impacts of the proposed action on the water quality, habitat quality, and ecosystem health of watercourses within and downstream of the project area, including the Fitzroy River and ultimately the Great Barrier Reef. Consideration of the site hydrology and topography, including during the construction, operation, rehabilitation and decommissioning phases of the proposed action, is required. The MNES section must, at a minimum, assess the following potential impacts to the Great Barrier Reef from the proposed action:
  - i. increased sediment and erosion run-off associated with vegetation clearing, earthworks, altered surface runoff, steep terrain, and relatively high flow velocities
  - ii. changes in the hydrology of stream beds and banks and changes to hydrological regimes within and downstream of the project area
  - iii. changes to water quality in the watercourses within and downstream of the project area
  - iv. increased rates of nutrient enrichment and eutrophication
  - v. effect of increased fine sediment loads on benthic communities
  - vi. degradation of seagrass communities due to sedimentation and subsequent impacts to protected marine fauna
  - vii. concrete and chemical pollution into water bodies
  - viii. changes in pH due to construction or other activities
  - ix. effect of the proposed action on underground water systems and natural seepage in the area during the wet season
  - x. The MNES section should include flood modelling for the relevant catchments, with information on the hydrology of the project area, the intensity and quantum of water over single flood events, and the intensity of slope angles detailed.
- (b) The Fitzroy River flows into the Great Barrier Reef and in accordance with the *Reef 2050 Water Quality Improvement Plan 2017-2022* (2018) (WQIP) is currently listed under high management priority for fine sediment loads in Table 2 of the WQIP. Describe how the proposed action will meet the requirements of the *Reef 2050 Water Quality Improvement Plan*, the [Reef 2050 Long-Term Sustainability Plan 2021-25](#) and the *Water Plan (Fitzroy Basin) 2011*, with reference to project construction, soils, hydrology, and hydrological modelling, including risks posed by extreme weather events. Potential impacts to water quality, erosion and sedimentation controls, the amount or types of sediment that will be removed, and the quantities that will potentially be released into the marine environment should be discussed, along with their direct and indirect impacts on MNES.
- (c) Assess and describe all direct, indirect, facilitated, and cumulative impacts to the environment of the Great Barrier Reef Marine Park, the Outstanding Universal Values of the Great Barrier Reef World Heritage Area, and the National Heritage values of the Great Barrier Reef National Heritage Place. **Impacts must be assessed in accordance with the *Significant impact guidelines 1.1* and the *EPBC Act referral guidelines for the Outstanding Universal Value of the Great Barrier Reef World Heritage Area*.** There

is no need to duplicate information relevant to the values of the Great Barrier Reef World Heritage Area and National Heritage Place. The MNES section must also address whether the proposed action will result in any impacts on the cultural heritage values of the Great Barrier Reef National Heritage Place, with reference to the *Aboriginal and Torres Strait Islander Heritage Strategy for the Great Barrier Reef Marine Park* (2019), available at: [https://elibrary.gbrmpa.gov.au/jspui/retrieve/9bbc9177-e617-4019-b003-1d70a1758167/GBRMPA\\_ATSI\\_HeritageStrategy.pdf](https://elibrary.gbrmpa.gov.au/jspui/retrieve/9bbc9177-e617-4019-b003-1d70a1758167/GBRMPA_ATSI_HeritageStrategy.pdf).

## 9. Relevant Impacts

All relevant impacts (direct, indirect and offsite impacts (upstream, downstream, facilitated, cumulative)) are to be assessed with reference to relevant DCCEEW policies and guidelines, and information provided in the SPRAT database. Relevant impacts to be assessed include, but are not limited to – habitat clearance, fragmentation and degradation, and edge effects; introduction and increase in weed species; changes to hydrological regimes (surface and groundwater); impacts to water quality and impacts of waste and chemical pollution.

- (a) The MNES section is to provide a detailed assessment of any likely impact that the action may have (at the local, regional, state, national and international scale) on MNES:
  - i. listed threatened species and communities (sections 18 and 18A)
  - ii. a water resource, in relation to unconventional gas development and large coal mining development (sections 24D and 24E)
  - iii. The world heritage values of a declared World Heritage property (sections 12 & 15A)
  - iv. The national heritage values of a National Heritage place (sections 15B & 15C)
  - v. The environment in the Great Barrier Reef Marine Park (sections 24B & 24C).
- (b) Impacts to all stages and components of the action must be addressed, and the following information provided:
  - i. a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts
  - ii. a statement, with supporting evidence, whether the relevant impacts are likely to be unknown, unpredictable or irreversible
  - iii. analysis of the significance of the relevant impacts
  - iv. any technical data and other information used or needed to make a detailed assessment of the relevant impacts.
- (c) The MNES section must identify and assess the cumulative impacts on MNES (terrestrial and aquatic) created by the project and the activities of other existing and proposed adjacent, upstream and downstream relevant developments, water users and land users.
- (d) The MNES section must establish and describe clear spatial and temporal boundaries for the assessment of cumulative impacts.
- (e) The MNES section is to address the potential cumulative impact of the action on ecosystem resilience. The cumulative effects of climate change impacts on the environment must also be considered in the assessment of ecosystem resilience. Where relevant to the potential impact, a risk assessment is to be conducted and documented.
- (f) The MNES section must identify and address cumulative impacts, where potential impacts of the action are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other proponents in the region and vicinity).

Where relevant, the EIS should consider the anticipated/predicted future climatic conditions at the site in the assessment of impacts on MNES, and how changes in climate and the frequency and severity of weather events may interact with, exacerbate or reduce the impacts of the proposed action on MNES over time. This should include, but not be limited to the:

- (a) loss, fragmentation, and/or drying of potential climate refugia and/or refuges for threatened species or

communities as a result of the proposed action – consider the potential impacts of removing or otherwise impacting these habitats

- (b) increased risk of fire as a result of mining operations under drier conditions and periods of extreme heat
- (c) overtopping of the sediment basin dam during extreme rain events and the downstream impacts on MNES
- (d) inclusion of different climate scenarios in water modelling.

## 10. Avoidance, Mitigation and Management

Avoidance, mitigation, and management measures are the primary methods of eliminating and reducing significant impacts on MNES. Where possible and practicable, it is best to avoid impacts. If impacts cannot be avoided, then they should be minimised or mitigated as much as possible. Residual impacts should then be managed.

Avoidance, minimisation and mitigation measures must be investigated thoroughly as a part of the assessment and be supported by evidence to demonstrate likely success.

The MNES section must not just state proposed management plans and/or broad objectives to describe avoidance, mitigation and management measures. The MNES section must include a description of detailed measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of all stages of the action on MNES. Committal language (i.e. 'will') rather than non-committal language (i.e. 'may', 'where possible', 'if required', etc) must be used and any commitments by the person proposing to take the action must be clearly distinguished from recommendations or statements of best practice made by the document author or other technical expert. Avoidance, mitigation and management measures must be clearly demonstrated. The proposed measures must be based on best available practices, appropriate standards and supported by scientific evidence (e.g. outcomes of successful field trials, research papers, other projects, etc). The MNES section is to include:

- (a) details of the proposed measures to be undertaken to avoid, mitigate and manage the relevant impacts of the action on MNES, including those required by other Commonwealth, State and local government approvals
- (b) an assessment of the expected or predicted effectiveness of the proposed avoidance, mitigation and management measures for each MNES, including the scale and intensity of impacts of the proposed action and the on-ground benefits gained through each measure. Where an impact on a MNES is avoided, this should be stated. Consider climate change predictions where relevant
- (c) any statutory or policy basis for the proposed avoidance and mitigation measures, including reference to the SPRAT database and relevant conservation advices, recovery plans or threat abatement plans. A discussion on whether the proposed avoidance, mitigation and management measures are not inconsistent with relevant conservation advices, recovery plans and threat abatement plans
- (d) details on ongoing management measures, including scientifically robust monitoring programs to support an adaptive management approach and determine the effectiveness of the proposed measures or assess against proposed outcomes
- (e) details on measures, if any, proposed to be undertaken by State and local governments, including the agency responsible for approving each measure
- (f) information on the timing, frequency and duration of the measures to be implemented
- (g) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program
- (h) the environmental outcomes to be achieved by the proposed measures including details of any baseline data or proposed monitoring to demonstrate progress towards achieving these outcomes
- (i) the cost of the mitigation measures.

Discuss how impacts on areas and/or objects of Indigenous cultural significance (tangible and intangible) as a result of the project will be avoided, minimised and/or mitigated.

For groundwater and surface water resources, include a trigger action response plan (TARP) with appropriate triggers based on the monitoring program and timely actions to prevent or limit potential impacts. Include

avoidance, mitigation and management measures regarding other groundwater users and potential cumulative impacts of groundwater drawdown to these users as a result of the action.

The SPRAT database and associated documents may provide some relevant mitigation measures for MNES. All proposed measures for MNES are to consider the 'S.M.A.R.T.' principle:

- S – Specific (what and how)
- M – Measurable (baseline information, number/value, auditable)
- A – Achievable (timeframe, money, personnel)
- R – Relevant (current conservation advices, recovery plans, threat abatement plans)
- T – Time-bound (specific timeframe to complete)

The department encourages the proponent to establish, test, and monitor novel methods for avoiding, minimising and mitigating impacts of the proposed project on MNES. The department also encourages the development of scientifically rigorous monitoring programs to measure impacts and assess the effectiveness of mitigation.

Any management plans required for the mitigation and management of impacts on MNES should be provided either as separate documents attached to the EIS or provided as subsections in the EIS. The department is likely to recommend to the Minister (or delegate) that any conditions of approval require that final versions of any relevant plans be approved and in place prior to the commencement of the proposed action.

An outline of an Environmental Management Plan (EMP) that sets out the framework for mitigation, management and monitoring of relevant impacts of the proposed action, including any provisions for independent environmental auditing, may be included as an appendix to the EIS. The EMP must not just state proposed management plans and/or broad objectives to describe avoidance, mitigation and management measures. Rather, the EMP must include detailed measures that will be implemented to avoid, mitigate and manage impacts on MNES. Committal language (i.e., 'will') rather than non-committal language (i.e., 'may', 'where possible', 'if required', etc.) must be used. The [Environmental Management Plan Guidelines](#) (2014) provides general guidance to stakeholders preparing environmental management plans for environmental impact assessments and approvals under Chapter 4 of the EPBC Act. The EMP must also include:

- a) contingencies for events such as extreme weather events, heavy or prolonged rainfall, flooding events and effects to groundwater
- b) measures for the handling, disposal and storage of pollutants, chemicals and toxic substances used during all stages of the proposed action
- c) discussion on risk management and mechanisms for monitoring potential leakages to surface water and groundwater.

## 11. Rehabilitation Requirements

Where rehabilitation is proposed and relevant to MNES, the following information must be included in a rehabilitation management plan or a subsection of the EIS:

- (a) Best practice rehabilitation acceptance criteria, including for the restoration of habitat for relevant listed threatened species and communities.
- (b) A summary of the vegetation community that is being rehabilitated and the dominant species that will be including in the rehabilitation site.
- (c) The details of any rehabilitation activities proposed to be undertaken as required by Commonwealth, State or Territory, and local government legislation. Attach relevant Commonwealth, State or Territory, and local government approvals and permits as supporting documents to the EIS. This must include a draft mine Progressive Rehabilitation and Closure Plan (PRC Plan).
- (d) Detail completion criteria and the methodology, including contingency measures, that will be undertaken to achieve the rehabilitation acceptance criteria for rehabilitated MNES.



- (e) Maps showing the areas that will be progressively rehabilitated within the project area and the size in hectares of these areas. This should also include the final, post-mining landform heights and contours.
- (f) A description of the vegetation chosen for rehabilitation that is appropriate for the natural succession trajectory of vegetation communities.
- (g) Information on management of the rehabilitation sites including, but not limited to, weed and pest management.
- (h) The procedures, including contingency measures, that will be undertaken to achieve the rehabilitation acceptance criteria.
- (i) Details of a monitoring program to monitor and assess the success of rehabilitation activities implemented by the proponent and a framework for adaptive management and review of the monitoring program if acceptance criteria is not met within a specified, acceptable time frame.

## 12. Offsets

According to the EPBC Act *Environmental Offsets Policy* (2012), environmental offsets are measures that compensate for the residual adverse impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after avoidance and mitigation measures. It is important to consider environmental offsets early in the assessment process and correspondence with the department regarding offsets is highly encouraged.

The MNES section must include an assessment of the likelihood of residual significant impacts occurring on relevant MNES after avoidance, mitigation and management measures relating to the proposed action have been applied. If it is considered that residual significant impacts are likely, then environmental offsets are required to be provided, and the EIS must include a draft Offset Management Plan (OMP) or a draft Offset Strategy (OS) consistent with the department's EPBC Act *Environmental Offsets Policy* (2012). If an offset area has been nominated, provide an OMP. If no offset area has been identified, provide an OS. Note that if there is a residual significant impact, the department will recommend to the Minister (or delegate) that any conditions of approval require the environmental offset and associated OMP be approved and implemented prior to the commencement of the proposed action.

General offset information required	
12.1	An assessment of the likelihood of residual significant impacts occurring on relevant MNES, after avoidance, mitigation and management measures have been applied.
12.2	<p>A summary of the proposed environmental offset and key commitments to achieve a conservation gain for each protected matter.</p> <p><b>Note:</b> Where the proposed offset area/s supports an environmental offset for multiple MNES, proposed management action/s for one protected matter must not be detrimental (i.e., have an impact) to other protected matters.</p>
12.3	If an offset area has not been nominated, include a draft OS as an appendix to the EIS. The draft OS must meet the information requirements set out in section 12.5.
12.4	<p>Where offset area/s have been nominated, include a draft OMP as an appendix to the EIS. The draft OMP must meet the information requirements set out in section 12.6, and must be prepared by a suitably qualified ecologist and in accordance with the department's <a href="#">Environmental Management Plan Guidelines</a> (2024).</p> <p>The draft OMP is to provide evidence, derived from field validation surveys and vegetation assessments, to demonstrate that an EPBC Act protected matter (e.g. listed threatened species or ecological community) is or can be present in the proposed environmental offset/s.</p> <p>Field validation surveys are to be undertaken in accordance with Commonwealth guidelines, state</p>

	<p>guidelines, and/or best practice survey methodologies.</p> <p>Supporting evidence must be included in the draft OMP to justify how proposed management action/s are additional to the existing requirements of the landholder in managing their land (e.g., weed and pest management requirements under the <i>Queensland Biosecurity Act 1994</i>, existing grazing regimes, etc.) as required by the EPBC Act <i>Environmental Offsets Policy</i>.</p> <p>The draft OMP must include robust scientific evidence (e.g., published research, pilot studies, previously successful projects/programs, etc.) to demonstrate the success of proposed measures to create, revegetate, regenerate and/or improve habitat (e.g., tree planting, nest boxes, artificial hollows, etc.) in the proposed offset area/s for a listed threatened species or ecological community, or a listed migratory species.</p>
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**Note:** The department expects that an EPBC Act protected matter is present in the proposed offset site/s if it is present in the project site to align with the EPBC Act *Environmental Offsets Policy*.

<p><b>12.5 Minimum Requirements for a draft Offset Strategy:</b></p> <p>An OS is like a proof-of-concept for an offset proposal. It demonstrates suitability and feasibility and commits to a timeframe. When impacts and offsets are well understood and suitability of the proposed offset is high, an OS may not be required and an OMP can be prepared.</p>	
12.5.1	<p>Details of the residual impacts to protected matters as a result of the proposed action. This must include the methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to the impact site for each relevant protected matter, including:</p> <ul style="list-style-type: none"> <li>• total area of habitat (in hectares)</li> <li>• habitat quality (see section 12.5.2 below).</li> </ul>
12.5.2	<p>A methodology that is suitable for each protected matter must be used to assess habitat quality (i.e., endorsed by the department or supported by literature), noting the same scoring mechanism must be used at both impact and offset sites.</p> <p>The department encourages proponents to consult and seek endorsement from the department on a proposed method prior to undertaking any habitat quality assessment at both impact and offset site(s).</p> <p>The department currently prefers the use of the Modified Habitat Quality Assessment (MHQA) method, an adaptation of the <a href="#">Queensland Guide to determining terrestrial habitat quality v1.2</a> (2017). MHQA was developed to better reflect the requirements of the EPBC Act <i>Environmental Offsets Policy</i> for determining habitat quality.</p> <p>To support the habitat quality assessment, a copy of the MHQA scoring spreadsheet template and guidance material is attached.</p> <p><u>Please note</u>, the 'absence of threats' component of the score must only contain indicators that reflect the current habitat quality of the site (e.g. presence of pest species). Indicators that instead relate to a site's potential future condition must be excluded (e.g. risk of clearing or development). These threats are appropriately dealt with in consideration of future risk of loss in the Offsets Assessment Guide and so should not be included in the score for current habitat condition.</p>
12.5.3	<p>Details of the potential offset area/s (including a map) to compensate for the residual impacts of the proposed action on relevant protected matters.</p>
12.5.4	<p>Specific details of the nature of the conservation gain to be achieved for relevant protected matters, including the creation, restoration, and revegetation of habitat in the proposed offset area/s.</p>
12.5.5	<p>Details, with supporting evidence, of how the environmental offset/s meets the requirements of the EPBC Act <i>Environmental Offsets Policy</i> (2012), available at: <a href="http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy">www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy</a>.</p>

12.5.6	<p>The methodology, with justification and supporting evidence, used to inform the inputs of the Offsets Assessment Guide in relation to each potential offset area/s for each relevant protected matter, including:</p> <ul style="list-style-type: none"> <li>• total area of habitat (in hectares)</li> <li>• habitat quality (see section 12.5.1 above)</li> <li>• time over which loss is averted (max. 20 years)</li> <li>• time until ecological benefit</li> <li>• risk of loss (%) without offset</li> <li>• risk of loss (%) with offset</li> <li>• confidence in result (%).</li> </ul> <p>Please note, risk of loss should not include consideration of stochastic events (e.g. bushfires), activities that contribute to changes in habitat quality scores, or impacts that would otherwise require an offset under any relevant legislation.</p>
12.5.7	Evidence that the relevant protected matter, and/or their habitat, can be present in the potential offset area/s.
12.5.8	Information about how the potential offset area/s provides connectivity with other relevant habitats and biodiversity corridors.
12.5.9	Details and execution timing of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the potential offset area/s against development incompatible with conservation.
<b>12.6 Minimum Requirements for a draft Offset Management Plan:</b> <p>The OMP outlines what needs to be done to manage an offset site once it is in place, such as setting milestones, monitoring, and reporting. It should also include a risk assessment and identify triggers for adaptive management. All direct offsets require an OMP.</p>	
12.6.1	Details of the residual impacts to protected matters as a result of the proposed action. This must include the area/s of habitat (in hectares) and its quality (see section 12.5.2 above) within the impact site for which the offset/s is to compensate (i.e. the quantum of impact).
12.6.2	A description of the offset area/s, including location, size, condition, environmental values present, and surrounding land uses.
12.6.3	Maps and shapefiles to clearly define the location and boundaries of the offset area/s, accompanied by the offset attributes (e.g. physical address of the offset area/s, coordinates of the boundary points in decimal degrees, the relevant protected matter that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares).
12.6.4	Baseline data and other supporting evidence that documents the presence of the relevant protected matter/s within the offset area/s.
12.6.5	<p>Details, with supporting evidence, to demonstrate how the environmental offset/s compensate for residual significant impacts of the proposed action on relevant protected matters, and/or their habitat, in accordance with the principles of the EPBC Act <i>Environmental Offsets Policy</i> and all requirements of the Offsets Assessment Guide, including:</p> <ul style="list-style-type: none"> <li>• total area of habitat (in hectares)</li> <li>• habitat quality (see section 12.5.1 above)</li> <li>• time over which loss is averted (max. 20 years)</li> </ul>

	<ul style="list-style-type: none"> <li>time until ecological benefit</li> <li>risk of loss (%) without offset</li> <li>risk of loss (%) with offset</li> <li>confidence in result (%).</li> </ul> <p><u>Please note</u>, risk of loss should not include consideration of stochastic events (e.g. bushfires), activities that contribute to changes in habitat quality scores, or impacts that would otherwise require an offset under any relevant legislation.</p>
12.6.6	Details of how the offset area/s will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the relevant protected matter.
12.6.7	Specific, committal, and measurable environmental outcomes that detail the nature of the conservation gain to be achieved for each protected matter, including the creation, restoration, and revegetation of habitat in the proposed offset area/s.
12.6.8	Specific offset completion criteria derived from the offset area habitat quality to demonstrate the improvement in the quality of habitat in the offset area/s over a 20-year period.
12.6.9	Details of the management measures, and timeframes for implementation, to be carried out to meet the offset completion criteria. All proposed management measures must be written using committal language (e.g. 'will' and 'must').
12.6.10	<p>Details of the management measures, and timeframes for implementation, to be carried out to meet the offset completion criteria. Management measures must:</p> <ul style="list-style-type: none"> <li>be targeted towards the needs of the protected matter that is offset and must align with the recovery objectives for the species as identified in relevant national recovery plans or conservation advices</li> <li>take into account relevant threat abatement plans</li> <li>be site-specific (e.g. informed by surveys at the offset site)</li> <li>have timeframes for implementation</li> <li>be written using committal language (e.g. 'will' and 'must')</li> <li>be specifically linked to the attribute of the protected matter for which the management measure applies</li> <li>be derived from recognised principles, practice, or guidelines, and is justified – technically, scientifically and legally (e.g., by recommendation in a national recovery plan) – as an effective and appropriate measure to attain and/or maintain the plan's completion criteria and/or performance targets.</li> </ul>
12.6.11	<p>All management measures be drafted to meet the 'S.M.A.R.T' principle:</p> <ul style="list-style-type: none"> <li>S – Specific (what and how)</li> <li>M – Measurable (baseline information, number/value, auditable)</li> <li>A – Achievable (timeframe, money, personnel)</li> <li>R – Relevant (conservation advices, recovery plans, threat abatement plans)</li> <li>T – Time-bound (specific timeframe to complete).</li> </ul>
12.6.12	Interim milestones that set targets at 5-yearly intervals for progress towards achieving the offset completion criteria.
12.6.13	Details of the nature, timing, and frequency of monitoring to inform progress against achieving the 5-yearly interim milestones (the frequency of monitoring must be sufficient to track progress towards

	each set of milestones, and sufficient to determine whether the offset area/s are likely to achieve those milestones in adequate time to implement all necessary corrective actions).
12.6.14	Proposed timing for the submission of monitoring reports which provide evidence demonstrating whether the interim milestones have been achieved.
12.6.15	<p>Details of the tangible, on-ground corrective actions, and timeframes for implementation, if monitoring activities indicate an interim milestone has not been achieved, including an approach to monitoring the effectiveness of the corrective actions.</p> <p>All proposed corrective actions must be written in accordance with the department's requirements for management measures (see sections 12.6.10 and 12.6.11).</p>
12.6.16	Risk analysis and a risk management and mitigation strategy for all risks to the successful implementation of the OMP and timely achievement, and continued maintenance, of the offset completion criteria, including a rating of all initial and post-mitigation residual risks in accordance with a risk assessment matrix. Where relevant, address the risk of any management measures resulting in a perverse outcome (e.g. control of feral predators results in an increase in feral herbivores).
12.6.17	Details and execution timing of the mechanism to legally secure the proposed offset area/s, such that legal security remains in force over the offset area/s for at least 20 years to provide enduring protection for the offset area/s against development incompatible with conservation.

## 13. Other Approvals and Conditions

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

- details of any local or state government planning scheme, or plan or policy under any local or state government planning system that deals with the proposed action, including:
  - what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy
  - how the scheme provides for the prevention, minimisation and management of any relevant impacts
- a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action
- a statement identifying any additional approval that is required
- a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

## 14. Consultation

Any consultation about the action, including:

- any consultation that has already taken place, their outcomes and details of management measures to address community concerns
- proposed future consultation (including plans for future engagement) throughout the life of the proposed action
- if there has been consultation about the proposed action, any documented response to, or result of, the consultation
- identification of affected parties, including a statement mentioning any communities that may be affected and describing their views
- signed documents or statements of consent from land holders, managers, Department of Defence and registered Native Title body corporates.

Describe how consultation and engagement with First Nations Peoples was in accordance with the [Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999 \(2023\)](#).

## 15. Environmental Record of Person(s) Proposing to Take the Action

The information provided 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:

- the person proposing to take the action
- for an action for which a person has applied for a permit, the person making the application.

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.

## 16. Economic and Social Matters

The economic and social impacts of the action, both positive and negative at the local, regional and national levels, must be analysed. Matters of Commonwealth interest include but are not limited to those in the below table.

Information required	
16.1	Projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies.
16.2	Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.
16.3	Provide proof of draft or finalised agreements with relevant land holders, including the Department of Defence and Registered Native Title bodies. This may include finalised Aboriginal Cultural Heritage Agreements (ACHAs) that: <ul style="list-style-type: none"> <li>a) protect tangible and intangible cultural heritage values</li> <li>b) address concerns that might include environmental impacts, noise and vibration, visual impacts of mining and infrastructure, water quality, social impacts (such as the impacts of the mining workforce) and economic opportunities</li> <li>c) implements protocols for the identification, protection and management of any cultural heritage values or artefacts discovered in the course of project construction and operations</li> <li>d) includes details of targeted cultural heritage pre-clearance surveys prior to site clearance and construction.</li> </ul>
16.4	Describe the proponent's commitments and other matters and formalise such agreements in the construction of Indigenous Land Use Agreements (ILUAs) that: <ul style="list-style-type: none"> <li>a) address any Native Title matter as agreed to by the parties</li> <li>b) may include arrangements for consultation, access, dispute management, environmental and cultural heritage management, and economic opportunities.</li> </ul>
16.5	Describe employment opportunities (including Indigenous employment targets) expected to be generated by the project (including construction, operational and decommissioning phases).
16.6	Details of the relevant costs and benefits of alternative options to the proposed action should also be included with reference to impacts on and benefits to Indigenous peoples and communities and other social and economic considerations.
16.7	Describe the benefits of the proposed action in this area to the local and state economy including



## 17. Information Sources Provided in the EIS

For information given in a draft Environmental Impact Statement, the draft must state:

- the source of the information
- how recent the information is
- how the reliability of the information was tested
- what uncertainties (if any) are in the information.

## 18. Conclusion

An overall conclusion as to the environmental acceptability of the proposal should be provided, including discussion on compliance with principles of ESD and the objects and requirements of the EPBC Act. Reasons justifying undertaking the proposal in the manner proposed should also be outlined.

Key mitigation measures proposed or required by way of offset for any unavoidable impacts on MNES, and the relative degree of compensation, should be summarised here.