

5.3 Environmental Impact Assessment

Conduct a detailed Environmental Impact Assessment (EIA) for the selected project configuration, addressing the Project Execution, Operations and Closure phases of the project. This EIA must be finalised and included as part of the completed Feasibility Study.

An environmental impact assessment must:

- be a qualitative Environmental Impact Assessment process
- identify the impacts / issues and hazards and control strategies (existing and planned)
- rank and register the environmental risks
- describe the 'High' and 'Extreme' risks for and an action plan by which such risks are mitigated, or if not so mitigated are recognised
- investigate public environmental concerns and responses.

Comprehensively describe the environmental impact assessment undertaken for the selected project configuration, including:

- learning gained or issues identified in other relevant projects and/or relevant industry experience
- potential aspects of the project to create an unacceptable environmental risk
- nominate preferred risk-based options and fall-back positions
- 'in-principle' solutions to potential problem areas for all options and describe any residual environmental impacts
- potential public and/or regulatory responses to the in-principle solutions or the residual environmental effects.

If the EIA has not been approved, explain the approval process and timeframes.

Refer to Knowledge Portal

5.3.1 Risk Register

Update the environmental risk register with additional risks identified in the Feasibility Study for the selected project configuration.

5.4 Environmental Management Plan

Develop a detailed environmental management plan from the environmental information assessed and recommended project configuration. The plan must highlight specific activities required for the Project Execution, Operations and Closure phases.

The plan must develop mitigation actions required to control high and extreme environmental risks and ensure compliance with corporate and statutory standards.

Refer to Knowledge Portal

5.4.1 Conditions Precedent

Describe the conditions precedent for the environmental management plan being effected such as:

- permits, including bonds, licence fees etc.,
- community engagement
- public reports

5.4.2 Project Execution Phase

Describe in detail the activities for environmental data gathering, permitting, management and monitoring measures to be performed prior to an investment decision and during the Project Execution phase.

- product contaminants
- potential acid formation minerals
- asbestos form minerals.

7.3.2 Geotechnical Considerations

Describe the key geotechnical parameters or assumptions used to evaluate the selected configuration, including:

- geotechnical data by material class or rock type, including where appropriate in-situ stress regimes
- stability (risk) analyses with consideration of seismic and hydrological action and the potential modes of failure
- guidelines related to 'drillability', 'digability', blasting constraints and ongoing geotechnical monitoring
- geotechnical recommendations or assumptions for mine design, incorporating ground support requirements, mining methods and equipment specifications
- geotechnical recommendations or assumptions relating to waste rock disposal.

7.3.3 Hydrological and Hydrogeological Considerations

Describe key hydrological and hydrogeological parameters or assumptions used to evaluate the selected configuration, including:

- surface and groundwater regimes
- analyses of modelled regimes
- historical data such as rainfall, evaporation, flooding events, water analysis, water table level and fluctuation, porosity, permeability, etc.
- past and possible water control practices such as levees, drains, dewatering, grouting, evaporation ponds, etc.

7.3.4 Processing and Marketing Considerations

Describe key processing and marketing constraints used to evaluate the selected configuration, including:

- the impact of potential marketing and process issues, the range of outcomes, and likelihood of such outcomes that may impact on mining operations
- showing that market and process driven constraints or requirements have been challenged and verified for each option
- showing that opportunities to add value have been sufficiently explored
- recovery or yield of the mineral commodity being produced from ore mined and processed
- mineral processing parameters expected to affect mine design and operation.

7.3.5 Mining Considerations

Describe key mining constraints to evaluate the selected configuration, including the:

- mining method applied and mine operating strategy
- historical reconciliation results for similar operations
- means to underground access and ore haulage / hoisting
- blast fragmentation sought
- mine production rate applied and analysis to determine optimal production rate, including discussion of mining equipment selection considerations
- criteria for ore / waste determination applied in planning and design

- potential reagent, power and wear part consumption rates.

For each metallurgical process route, identify the key metallurgical performance (success) factors and economic drivers. Issues that must be considered are:

- range of metallurgically different ore types and grades that make up the ore body, processing and economic significance of each, including potential product qualities
- disposition of each ore type within the ore body, the timing of extraction and the need and ability of the mine plans to blend or stockpile as necessary.

Provide the details relating to the selection of the preferred processing flowsheets and metallurgical operating strategies to be studied in the Feasibility Study, including, as a minimum:

- test work, modelling and other simulation work performed to validate the preferred or any other alternative flowsheets and metallurgical operating strategies
- details of the trade-off studies conducted to select the preferred flowsheet and operating strategy
- options considered and alternatives reviewed, to demonstrate the optimum flowsheet and strategy
- likely or potential bottlenecks and the method of remedy proposed
- how the product specifications are demonstrated from test work results
- scale-up factors required for the commercial plant parameters are to be evaluated and demonstrated to be achievable
- determine the consumption rates of major reagents and consumables for the main ore types
- valid derivation of Process Design Criteria.

Describe process flowsheets including as a minimum:

- all potential flowsheets considered
- the most likely flowsheet to be adopted (with reasons)
- any alternative processing options to be considered in the future
- estimated product specifications indicated by the test work results
- estimated reagent, power and wear part consumption rates based on test work and experience.

Describe any key and novel technologies used in the flowsheets, including:

- source, costs and terms for technology needed to be acquired
- whether the technology has been used before, where used and the success or otherwise of its use
- whether patented or proprietary
- describing the extent of further test work required to validate the use of new technology on this project.

Refer to Knowledge Portal

8.5 Facility Description

The Study must provide a full description of the facilities to be provided for the project.

8.5.1 Design Criteria

The process plant design criteria must be described, including as a minimum:

- metal recoveries including mass recovery and product grades as determined by the test work
- product quality specifications by product and forecast period
- annual ore and product capabilities
- major mass flow / capacity with variability estimates

- historical studies, past practices and known constraints
- issues that present a risk to the progress of the project
- identification of logistics system that is likely to yield high value for the project, at an acceptable level of risk.

Describe the extent of further investigations required to validate the preferred logistics configuration.

11.3 Logistics Plan

Describe the logistics system for the Project Execution and Operations phases to support the selected project configuration.

Develop a logistics plan sufficiently detailed so as to identify the resources and timing required, and to support the accuracy of capital and operating cost estimates derived to conduct the selected logistics system.

11.3.1 Transportation

Comprehensively describe the transportation systems required to facilitate the movement:

- of personnel to and from the project site
- of mineral products from the site
- and transport goods to the site.

Describe in detail the transportation systems design criteria by which project infrastructure will be established and contracted services engaged. The design criteria must focus on:

- type of transportation (land, sea, pipeline, air etc.)
- capacity of facilities
- required personnel and management
- frequency of service
- quality of service or facilities.

11.3.2 Consolidation, Warehousing and Distribution

Describe the proposed offsite consolidation and onsite warehousing, and distribution of goods.

Describe the design criteria for the consolidation, warehousing and distribution of goods by which the project infrastructure will be established and contracted services engaged. The design must focus on the following:

- type of facilities
- capacity of facilities
- required personnel and management.

12. HUMAN RESOURCES - PROJECT AND OPERATIONS

Provide a summary that includes commentary on topics related to the project and operations phases, as set out in the following subsections.

Refer to Knowledge Portal

12.1 Policy and Statutory Obligations

Describe the corporate policies and procedures relating to the management of human resources necessary to support the project and operations phases.

Identify the statutory requirements and commitments for the management of human resources. Provide mitigation measures for any corporate or statutory requirements that may present a risk to the progress of the project through the Project Execution, Commissioning, Operations and Closure phases.

Refer to Knowledge Portal

higher, and their intra-operations and inter-company relationships.

15.2 Workforce

Schedule each position of the operating workforce and include availability requirements. Incorporate adequate provisions from survey data for leave, non-wage on costs, lost time due to industrial relations, training replacement, and re-training.

15.2.1 Workforce Profile

Comprehensively describe for the life of the operations:

- workforce composition and numbers
- extent of engaging local persons and/or indigenous persons
- skills required and potential availability of skilled persons, including a statement on expected personnel types and numbers of persons.

Prepare a detailed operations manning schedule with time periods and generated personnel numbers.

Refer to Knowledge Portal

15.2.2 Sourcing and Recruitment

Describe the sources of personnel planned to be recruited for the life of the operations, as well as the periods of recruitment, induction and training to become proficient at their designated roles.

15.2.3 Training and Development

Comprehensively describe the training and development of recruited persons for the operations, sufficient to allow costing of the time and resources necessary.

15.2.4 Employment Conditions

Explain the employment conditions for each employment classification, and summarise the nominated conditions of employment for each classification.

Refer to Knowledge Portal

15.2.5 Accommodation and Messing

Describe the accommodation and messing needs of the operations workforce and the means by which the recommended accommodation and messing practice were derived.

Refer to Knowledge Portal

15.3 Contracted Services

Describe the specific services to support Operations provided by external service providers on a contract basis.

15.4 Production

Describe the management approach, support and services required for production.

15.5 Maintenance and Engineering

Explain the maintenance and engineering management approach across the operations, including provisions for specialised maintenance and other external providers. The maintenance management system must include:

- a development plan, strategy, detailed budget and schedule
- requirements for standardisation of plant, equipment, components and parts specified
- information on plant, equipment and facilities
- outsourcing to a defined level