

Environment
Effects
Statement

VHM Limited
Goschen Rare Earths and Mineral
Sands Project

Chapter 06 Assessment Framework

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6. Assessment framework

6.1 Introduction

This chapter describes the process used to facilitate a consistent approach across the various specialist studies to assess the potential effects of the Project on the environment (which includes physical, biological, heritage, cultural, social, health, safety and economic aspects) and possible approaches and measures to avoid, mitigate and manage adverse impacts. Integral to this assessment are the evaluation objectives provided in the scoping requirements issued by the Minister for Planning (Scoping Requirements) for the Project EES and the statutory approval requirements, policies and guidelines applicable to the Project. It should be noted that the development of the Project (and the EES) has been informed by specialist studies and consultation with stakeholders and the community, and as new information is gathered, the Project continues to be refined to reduce potential impacts. In the EES, use of the terms ‘effect’ and ‘impact’ are often used interchangeably.

The approach to the environmental assessments also reflects the requirements of the general environmental duty (GED), which is central to the *Environment Protection Act 2017* and which requires first the avoidance, then the minimisation, of the risk of harm to human health and the environment from pollution or waste as far as reasonably practicable. Further discussion on the application of the GED and the *Environment Protection Act 2017* to the impact assessments is provided in EES Chapter 5: Legislation and approvals.

The relationship between the components of the process is shown in Figure 6-1 and described in further detail in this chapter.

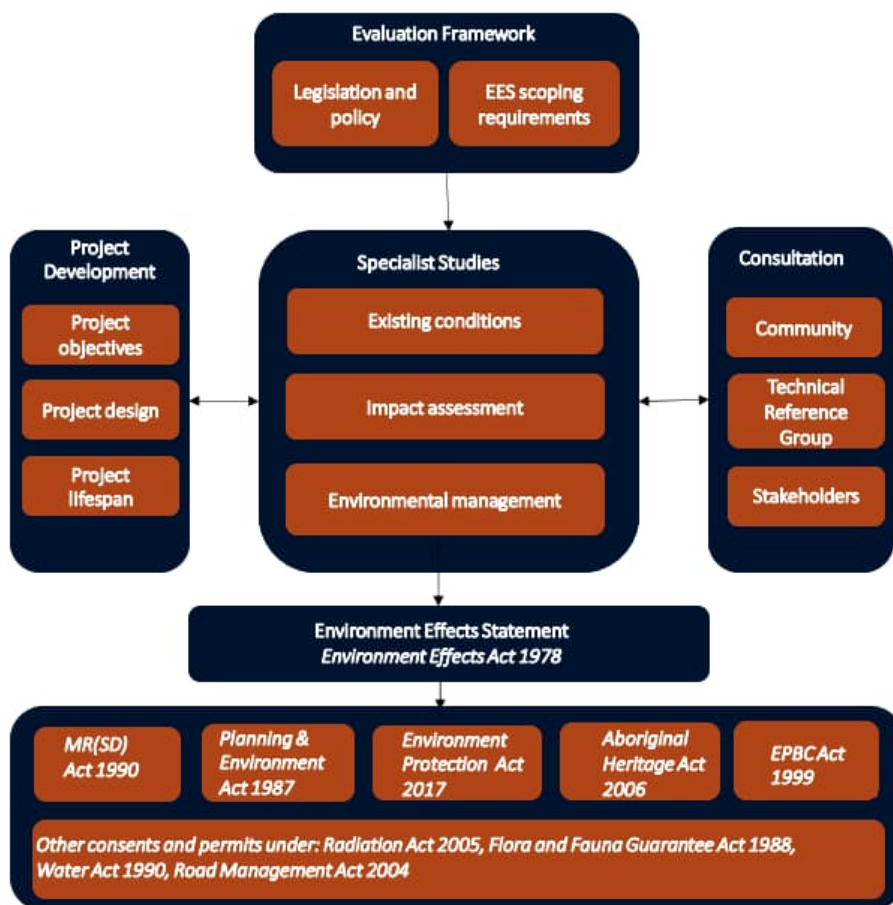


Figure 6-1 Assessment framework

6.2 Evaluation framework

The legislation, policies and guidelines relevant to the EES evaluation objectives established by the Scoping Requirements are outlined in Table 6-1. This is the regulatory framework which determines the assessment presented in the EES. The table indicates where further information can be found within the EES main report, attachments and technical reports.

A description of applicable legislation and key approvals required for the Project is set out in EES Chapter 5: Legislative framework.

Table 6-1 EES draft evaluation objectives and corresponding legislation

Evaluation objectives	Key legislation	Relevant EES Chapter , attachment or technical report
<p>Resource development</p> <p><i>To achieve the best use of available mineral sands resources, in an economic and environmentally sustainable way, including while maintaining viability of local industries.</i></p>	<ul style="list-style-type: none"> • <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth).</i> • <i>Environment Effects Act 1978 (Vic).</i> • <i>Planning and Environment Act 1987 (Vic).</i> • <i>Environment Protection Act 2017 (Vic).</i> • <i>Mineral Resources (Sustainable Development) Act 1990 (Vic).</i> 	<p>EES Chapter 02 Project rationale.</p> <p>EES Chapter 03 Project description.</p> <p>EES Chapter 04 Project alternatives.</p> <p>EES Chapter 15 Land use planning.</p>
<p>Biodiversity and habitat</p> <p><i>To avoid or minimise potential adverse effects on biodiversity values within and near the site including native vegetation, listed threatened species and ecological communities, and habitat for these species, as well as address offset requirements for residual environmental effects consistent with state and commonwealth policies.</i></p>	<ul style="list-style-type: none"> • <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth).</i> • <i>Environment Effects Act 1978 (Vic).</i> • <i>Planning and Environment Act 1987 (Vic).</i> • <i>Flora and Fauna Guarantee Act 1988 (Vic).</i> • <i>Wildlife Act 1975 (Vic).</i> • <i>Environment Protection Act 2017 (Vic).</i> • <i>Water Act 1989 (Vic).</i> 	<p>EES Chapter 07 Flora & fauna.</p> <p>EES Chapter 21 Matters of N.E.S.</p>
<p>Water, catchment values and hydrology</p> <p><i>To minimise effects on water resources and on beneficial and licensed uses of surface water, groundwater and related catchment values (including the Kerang Wetlands RAMSAR site) over the short and long-term.</i></p>	<ul style="list-style-type: none"> • <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth).</i> • <i>Environment Effects Act 1978 (Vic).</i> • <i>Planning and Environment Act 1987 (Vic).</i> • <i>Environment Protection Act 2017 (Vic).</i> • <i>Water Act 1989 (Vic).</i> 	<p>EES Chapter 13 Surface water.</p> <p>EES Chapter 14 Groundwater.</p>
<p>Amenity and environmental quality</p> <p><i>To protect the health and wellbeing of residents and local communities, and minimise effects on air quality, noise and the social amenity of the area, having regard to relevant limits, targets or standards.</i></p>	<ul style="list-style-type: none"> • <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth).</i> • <i>Environment Effects Act 1978 (Vic).</i> • <i>Planning and Environment Act 1987 (Vic).</i> • <i>Environment Protection Act 2017 (Vic).</i> 	<p>EES Chapter 10 Traffic & transport.</p> <p>EES Chapter 11 Noise.</p> <p>EES Chapter 12 Air quality.</p> <p>EES Chapter 18 Socio-economics.</p>
<p>Social, land use and infrastructure</p> <p><i>To minimise potential adverse social and land use effects, including on agriculture and transport infrastructure.</i></p>	<ul style="list-style-type: none"> • <i>Environment Protection and Biodiversity Conservation Act 1999 (Cth).</i> • <i>Environment Effects Act 1978 (Vic).</i> • <i>Planning and Environment Act 1987 (Vic).</i> • <i>Environment Protection Act 2017 (Vic).</i> 	<p>EES Chapter 10 Traffic & transport.</p> <p>EES Chapter 11 Noise.</p> <p>EES Chapter 12 Air quality.</p> <p>EES Chapter 15 Land use planning.</p> <p>EES Chapter 16 Agriculture and soils.</p> <p>EES Chapter 18 Socio-economics.</p>
<p>Cultural heritage</p> <p><i>To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values.</i></p>	<ul style="list-style-type: none"> • <i>Aboriginal Heritage Act 2006 (Vic).</i> • <i>Heritage Act 2017 (Vic).</i> • <i>Traditional Owners Settlement Act 2010 (Vic).</i> • <i>Native Title Act 1993 (Cth).</i> 	<p>EES Chapter 08 Cultural heritage.</p>

Evaluation objectives	Key legislation	Relevant EES Chapter , attachment or technical report
Landscape and Visual <i>To minimise adverse effects on landscape and visual amenity associated with the environs of the Project site.</i>	<ul style="list-style-type: none"> • <i>Planning and Environment Act (Vic) 1987</i> 	EES Chapter 09 Landscape & Visual.

6.3 Integrated assessment

The general objective of the assessment process is to provide for the transparent, integrated and timely assessment of the environmental effects of the project (DSE 2006). This EES provides a clear and integrated analysis of the potential effects of the project, including proposed avoidance, mitigation and management measures, as well as feasible alternatives. The technical reports forming part of the EES indicate, where relevant, linkages to other technical disciplines and any interdependencies relating to the assessment of environmental effects.

Furthermore, the *Ministerial guidelines for assessment of environmental effects* (DSE 2006) require the EES to provide an integrated assessment of the anticipated performance of the Project in terms of the implications of likely impacts and associated risks with respect to:

- Key requirements or objectives under statutory provisions, including policy.
- Best practice techniques and technologies, available within relevant sectors of activity.
- Objectives and principles of ecologically sustainable development and environment protection.

The EES involves the use of a risk-based approach to address particular effects or risks. Mitigation measures were developed and provide a clear framework for management of environmental effects. Such measures might be linked to higher-order objectives for the integrated evaluation of project effects or outcomes.

6.4 Specialist studies, consultation and project development

Environmental impact assessments were undertaken for 17 specialist studies to assess the potential impacts of the Project on the environment, and included the following steps:

- Establishment of the existing or baseline conditions
- Consideration of the Project design, including construction, operation, decommissioning, and rehabilitation and closure activities in the context of existing conditions
- Risk screening to identify key issues for consideration
- Identification of impacts and potential mitigation measures
- Rehabilitation.

Further details on the assessment process for each specialist study process are provided below.

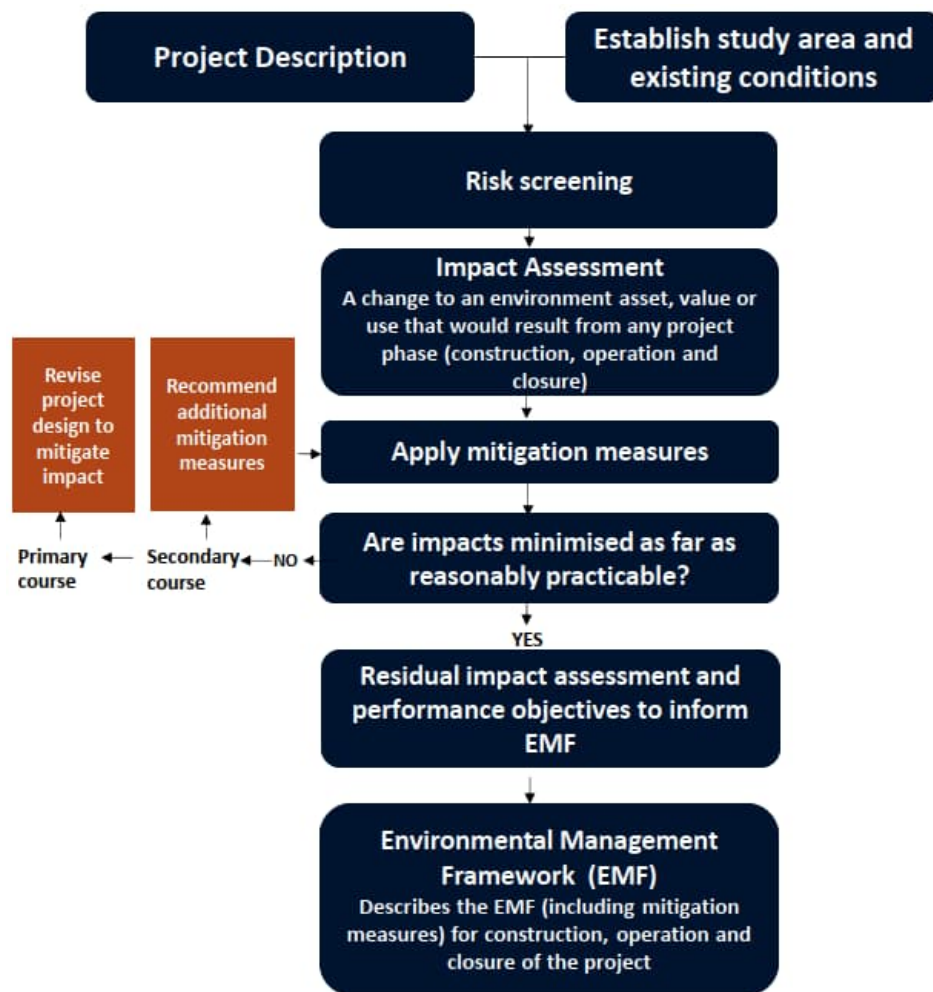


Figure 6-2 Impact assessment process

Where possible, changes to the Project design or construction approach were made to avoid potential impacts, see Figure 6-3. Ongoing refinement of the Project has been a key feature of the Project as new information becomes available through consultation and as modifications to the design are found to assist in the mitigation of environmental impacts. Project refinement encompasses activities such as consideration of Project alternatives, development of the Project design and the construction method. These activities would continue to occur in parallel with the EES assessment process. **EES Chapter 4 Project Alternatives** details the alternatives and refinements associated with the Project.

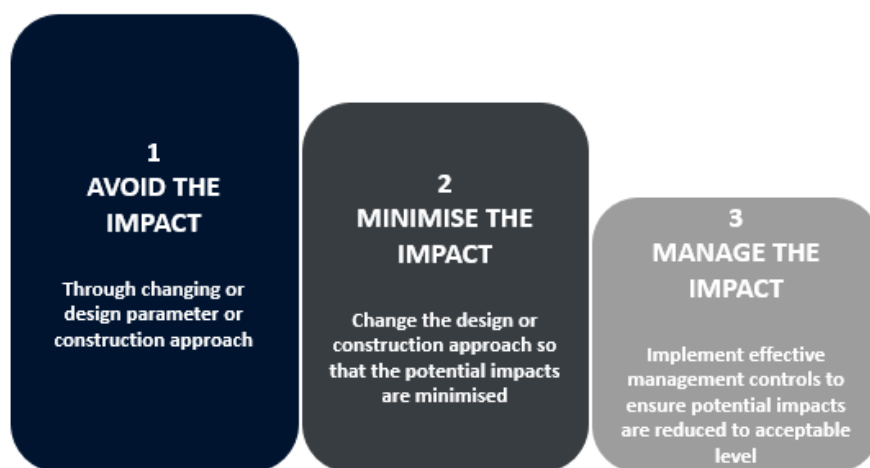


Figure 6-3 Avoid or minimise and manage hierarchy

6.4.1 Existing conditions

The assessment of the current condition of the environment is called the existing conditions assessment. The existing conditions assessment identified the environmental context for the Project and provided the baseline conditions for the impact assessment. It included identifying and characterising the significance of existing assets, values and uses that could be affected by the Project. Each of the specialist studies undertook an existing conditions assessment, which collectively provided the environmental context for the Project.

Each study considered the area within which potential effects could occur, the zone of influence, or 'Study Area'. For some specialist studies, the 'Study Area' was larger than the Project Area presented in Chapter 1: Introduction. For example, consideration of the potential impacts of the Project on the land use encompassed a study area wider than the Project Area to consider potential neighbouring and adjacent impacts.

The existing conditions for each of the specialist studies are summarised in EES Chapters 8 to 19 and detailed in Technical Reports A to P.

6.4.2 Project development risk-based approach

A qualitative approach for risk screening was undertaken to inform the development and review of the EES Study Plan stage and determine the types and extent of investigations or studies proposed. This risk-based approach is consistent with the *Ministerial guidelines for assessment of environmental effects* (DSE 2006). The Ministerial guidelines state "A risk-based approach should be adopted in the assessment of environmental effects so that suitable, intensive, best practice methods can be applied to accurately assess those matters that involve relatively high levels of risk of significant adverse effects and to guide the design of strategies to manage these risks."

The risk-based approach is also consistent with the *DELWP Impact Assessment Guidance – Use of impact assessment and risk assessment in environment effects statements* (DELWP, 2021).

This process assisted with:

- Identifying key Project risks requiring detailed investigation.
- Facilitating a consistent approach to the assessment across the various technical specialists.
- Ensuring that the level of investigation was proportionate to the relative environmental risk.

The risk screening was adopted as an initial approach to inform the impact assessments.

6.4.3 Risk assessments for mining projects

The *DELWP Impact Assessment Guidance – Use of impact assessment and risk assessment in environment effects statements* (DELWP, 2021) states that while an environmental risk assessment or risk register can be included with an EES, it is not required. Notwithstanding, risk assessment (and risk management) is required for all mining projects regulated by Earth Resources Regulation under the MRSD Act.

One of the key objectives of the *MRSD Act 1990* is to establish a legal framework to ensure that risks posed to the environment, to members of the public, or to land, property or infrastructure by work being done under a licence are identified and are eliminated or minimised as far as reasonably practicable. To meet this objective, the MRSD Act 1990 requires a work plan to be lodged which includes risk identification and management, with guidance provided by 'The Preparation of Work Plans and Work Plan Variations – Guideline for Mining Projects, December 2020, Version 1.3' (ERR Guidelines). The MRSD Act 1990 is supported by the *Mineral Resources (Mineral Industries) Regulations 2019* which requires:

- In accordance with regulation 44:
 - identification of mining hazards arising from construction, operation and rehabilitation.
 - an assessment of how hazards may harm or damage sensitive receptors.
 - an assessment of the risks (nature of the hazard, likelihood and consequence of harm).
- In accordance with regulation 45:
 - Risk management plan which includes measures to eliminate or minimise the risks as far as reasonable practicable.
 - Performance standards to be achieved.
 - Management systems applied to monitor and manage risks.
 - Roles and responsibilities for the Risk Management Plan.

Where environmental risk assessments are included in an EES, both the risk and impact assessment frameworks should therefore be established in the early stages of the EES process, so that these can be applied consistently in all studies and the EES main report.

The environmental management measures proposed in the EES by various specialist studies, adopting the risk assessment process under the ERR Guidelines to address specific issues, are embedded within the Environmental Management Framework (EMF).

This interaction with regulatory obligations embedded within the EES process is covered in Section 3.8 of the Scoping Requirements which recommends that a register of environmental risks associated with the Project is embedded within the work plan. For the Project, the risk register is presented in Attachment I: Draft Work Plan and is required to be maintained and implemented for the duration of the Project.

6.5 Impact assessment

The nature and extent of any potential effects on the environment are measured against the existing conditions assessment. After defining the study area for each specialist study, an environmental impact assessment was conducted. This assessment involved identifying the nature and extent of any effects, positive or negative, that the Project may have on the existing environment.

The following factors were considered when determining the significance of potential environmental impacts of the Project:

- Magnitude, extent and duration of the impacts on the environment
- The relationship between different impacts on the environment and potential cumulative impacts
- The likely effectiveness of measures to avoid, minimise and manage environmental impact
- The likelihood that any given environmental impact would occur
- Benchmarks and standards set by statutory requirements and environmental approvals
- The policies and guidelines that apply to the proposed project
- Community expectations
- The principles of ecologically sustainable development as defined in the *Ministerial guidelines for assessment of environmental effects* (DSE 2006).

The impact assessment was an iterative process. In the first instance and where possible, the Project description was amended so that impacts could be avoided. If impacts were unavoidable, mitigation measures were identified that could reduce the potential impacts. This process continued until the impacts were reduced to as low as reasonably practicable. Following this, the residual impact of the Project was assessed, taking into account the mitigation measures proposed.

Consultation between the technical specialists ensured that relationships between the different studies were identified and the outcomes integrated. This included the use of data collected by another discipline, or the reliance on the results of one study to inform the assessment in another study. Additionally, mitigation measures for individual specialist studies did not operate in isolation. The impact assessment studies cross-reference mitigation measures from other technical areas as relevant.

The impact assessments for each of the specialist studies are summarised in EES Chapters 7 to 19 and detailed in Technical Reports A to P.

6.6 Mitigation measures

Following the impact assessment, mitigation measures were proposed to protect identified values and minimise the severity of the identified impacts. Technical assessments have identified measures to minimise the duration, intensity and extent of impacts. In some cases, where impacts cannot be avoided or minimised, rehabilitation/restoration and offsetting measures have also been considered, which present measures to improve degraded or removed ecosystems or compensate for residual impacts. Measures can be implemented through project design, construction methods and/or operating procedures.

Generally, where mitigation measures were not sufficient to meet benchmarks or criteria, additional mitigation measures have been proposed to lower the risk and likelihood of the impact occurring to as low as reasonably practicable.

6.7 Assessment of Matters of National Environmental Significance

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) ensures that nationally significant animals, plants, habitats and places are identified, and any potential negative impacts on them are carefully considered before changes in land use or new developments are approved. Under the EPBC Act, the Commonwealth Minister for the Environment decided that the Project could potentially have a significant impact on Matters of National Environmental Significance (MNES), requiring an assessment and approval by the Minister before it can proceed. The matters which the Project may have a significant impact on are known under the EPBC Act as the 'controlling provisions'.

Impacts on MNES have been assessed against the significant impact criteria defined in the *Matters of National Environmental Significance: Significant impact guidelines 1.1* (Australian Government, 2013). Whether or not an action is likely to have a significant impact depends upon the sensitivity, value and quality of the environment, which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts. If environmental impacts resulting from an action are unavoidable, proposed mitigation and offset strategies are required to reduce these impacts as far as reasonably practicable.

This assessment is presented in Chapter 20: Matters of National Environmental Significance.

6.8 Environmental management

The EMF contains the environmental management measures proposed in the EES to address specific issues, including commitments to mitigate adverse impacts and enhance environmental outcomes, see Chapter 21: Environmental Management Framework.

The EMF provides a framework to address how environmental effects and risks associated with the Project would be managed; including responsibilities for environmental management; explanation of how the Project would integrate with existing management plans and systems; and monitoring, response and reporting requirements for environmental incidents.

The Project will be delivered within the context of the EMF, in accordance with the obligations and requirements of the statutory approvals and consents required for the Project. A range of approvals and consents are required for the Project, including:

- The mining licence and work plan (and associated management plans), which will regulate mining activities on land subject to the mining licence; and
- The Incorporated Document (and the various plans required under it), which will regulate the use and development of land outside the mining licence that is required for supporting infrastructure, including the water pipeline and road upgrade works.

Before the commencement of each Project phase (construction, operation, rehabilitation and closure), it will be the responsibility of VHM Limited (VHM) to obtain the required statutory approvals and consents, together with any secondary consents required under them (i.e. approval of management plans that are required by conditions of the mining licence or Incorporated Document). VHM will prepare, implement and maintain environment plans and EMPs for each relevant phase of the Project to meet the requirements of the statutory approvals and consents.

VHM has made various commitments in the EMF regarding the measures it will take to avoid, manage and monitor the potential environmental impacts of the Project.