

A key part of the Scoping phase is a preliminary analysis of the ways in which the project may interact (positively and negatively) with environmental (including physical and biological receptors) and social resources or receptors. The impacts that are identified as potentially significant during the Scoping process provide focus for the studies undertaken during the EIA phase. Each of the potentially significant impacts will be discussed and assessed in more detail in the EIR.

In order to complete the EIA Scoping phase, the EIA team has drawn upon:

- knowledge of sources of potential impacts associated with solar power projects;
- an identification of the main environmental and social resources and receptors from the site visit and review of existing published data sources; and
- the results of the initial Scoping consultation.

This *Chapter* provides a preliminary identification and evaluation of the environmental and social impacts of the project.

7.1 RESOURCES AND RECEPTORS

For this project the following main resources and receptor were determined to be relevant.

- *Physical Environment:* ambient air quality, global climate, noise, vibration, groundwater quality, surface water quality, hydrology, geohydrology, soil, topography, landscape and visual, use of natural resources.
- *Biological Environment:* terrestrial habitats, terrestrial flora, terrestrial fauna, aquatic habitats, aquatic flora and fauna, protected areas.
- *Human Environment:* Impact on livelihood (loss of grazing land), community health, safety and security; local community; road traffic and transportation; cultural heritage; aesthetics; tourism/recreation; employment and income; economy; and public utilities.

7.2 OUTCOME OF THE SCOPING PROCESS AND IMPACT IDENTIFICATION MATRIX

The interactions of project activities with resources and receptors were identified during the Scoping Process.

Activities that will occur in the various development stages (site clearance, construction of project components, operation and decommissioning) were identified (*Table 7.2*).

The evaluation of the significance of an interaction between an activity and an environmental or social resource or/receptor was made and significance was rated according to the following scale:

	No interaction
I	Interaction with the environment or receptor which is <u>not</u> expected to be significant
S	Interaction with the environment or receptor that <u>could</u> be significant
P	Positive interaction

Potentially significant interactions are summarised in *Section 7.3* and *Table 7.2*. The impacts associated with the project will probably be narrower in scope than what is identified in these tables because mitigation measures will be built into the project design. However, the impact identification process is intended to be broad at this stage to consider a wide range of possibilities and inform project mitigation priorities.

7.3 SUMMARY OF POTENTIAL IMPACTS

The follow are the potential impacts determined through the Scoping process. The impacts identified through this process will be assessed in detail in the EIA.

Impacts can be grouped as follows:

- Physical footprint (physical presence of solar PV plant, vegetation clearance for infrastructure and interaction with other users);
- Surface and Groundwater;
- Air emissions (dust during construction);
- Noise (construction);
- Waste and wastewater management;
- Socioeconomic impacts (livelihoods);
- Non-routine discharges (oil spill and chemical spill);
- Cumulative impacts.

No importance should be given to the grouping of issues at this stage.

Table 7.1 *Description of Potential Impacts*

Impact Grouping	Potential Impacts
Physical Presence and Footprint	<ul style="list-style-type: none"> • Site clearance for the construction of the solar PV plant, access roads, and additional infrastructures in green-field areas will result in removal of vegetation and habitat, thus resulting in an impact on terrestrial fauna. • Presence of the solar PV plant, may have an impact on terrestrial flora and fauna, cultural heritage and visual and landscape character.
Air Emissions	<ul style="list-style-type: none"> • Dust from site clearance and construction activities. • Engine emissions from construction decommissioning machinery.
Noise	<ul style="list-style-type: none"> • Noise from construction of the solar PV plant, may have an impact on sensitive receptors. • Noise and vibration from construction traffic along main transport/access routes.
Waste and Wastewater Management	<ul style="list-style-type: none"> • Non-hazardous and hazardous wastes will be generated that will require to be transported and disposed of in a manner protective of the natural and human environment. • Improper storage, handling and transport of solid and liquid wastes at the power plant can lead to loss of containment and spillages which could give rise to soil and ground water contamination.
Visual and Landscape	<ul style="list-style-type: none"> • Excavation and foundation work as well as civil construction at the Project Site could impact on landscape and visual amenity. • Presence of Project at in the area could impact on landscape and visual amenity.
Socioeconomic	<p><i>Livelihoods</i></p> <ul style="list-style-type: none"> • It is understood that currently that the land associated with the preferred alternative is used for grazing by approximately 20 cattle owners. These cattle owners are understood to be employees of the mine and have an agreement in place for the usage of the land. They are represented by a committee of five members. • Should they not have access to this land in the future this may result in a loss of livelihood for the cattle owners. <hr/> <p><i>Community Health Safety and Security</i></p> <ul style="list-style-type: none"> • Equipment and activities will create noise and vibration and changes to air quality during construction, operations and demolition that could impact human health; • Movement of materials and workers during construction, operation and demolition could impact public safety; and • The presence of workers and opportunistic workers in the project area could result in a change in the disease profile of the local population in particular vector borne diseases, communicable diseases and sexually transmitted infections. <hr/> <p><i>Worker Health & Safety</i></p> <ul style="list-style-type: none"> • Hazardous construction operational or decommissioning activities could impact worker health and safety; and • Handling of hazardous materials could impact worker health and safety.

Impact Grouping	Potential Impacts
	<ul style="list-style-type: none"> • <i>Pressure on Social Infrastructure and Services</i> The potential influx of jobseekers from outside the project area could result in increased pressure on social infrastructure and services. <hr/> <p><i>Local and Macro Economy</i></p> <ul style="list-style-type: none"> • Procurement of goods and services required by the Project during construction, operation and decommissioning of the Project may enhance the local economy both directly and indirectly; and • The presence of construction, operation and decommissioning workers in the Project area may enhance the local economy through their purchase of local goods and services. <hr/> <p><i>Traffic</i></p> <ul style="list-style-type: none"> • Transport of equipment, machinery and labour during the construction phase may impact on local traffic patterns; • Transportation of waste from the site and materials and equipment to the site during operation may impact on local traffic patterns; and • Decommissioning activities could also impact local traffic conditions.
Cultural Heritage Resources	<ul style="list-style-type: none"> • Construction activities could have an impact on local cultural heritage sites, including graves and the built environment; and • Construction activities could have an impact on buried cultural heritage resources.
Non-Routine Discharges (accidental and emergency events)	<p>The key impacts identified include the following:</p> <ul style="list-style-type: none"> • Leaks or accidental releases of diesel or chemicals during construction and operation activities could impact on soil and groundwater.
Cumulative Impacts	<p>A cumulative impact is defined as an impact that results from incremental changes caused by other past, present or reasonably foreseeable actions together with the Project. The cumulative impact assessment will consider the impact of the Project along with the impacts of other industrial developments in the area that may also impact on the same receptors and resources.</p> <p>The following categories of cumulative impacts will be addressed in the EIR:</p> <ul style="list-style-type: none"> • Biodiversity; and • Socio-economic effects.

Table 7.2 Scoping Matrix

Project Activity		Ambient Air Quality	Global Climate	Noise	Vibration	Groundwater Quality	Surface Water Quality	Hydrology	Geohydrology	Soil	Topography	Landscape & Visual Character	Use of Natural Resources	Terrestrial Habitats	Terrestrial Flora	Terrestrial Fauna	Aquatic Habitats (Freshwater)	Aquatic Flora & Fauna (Freshwater)	Protected Areas	Livelihoods	Community Health, Safety & Security	Worker Health and Safety	Road Traffic & Transportation	Cultural Heritage	Aesthetics (Visual)	Tourism/ Recreation	Employment & Income	Economy	Social Infrastructure and Services		
		A Construction Phase																													
1	Employment of labour																				S							P	P		
2	Procurement of materials, equipment and services																												P	P	
3	Transportation of manpower, equipment and materials to/ from the site	I	I	I										I	I						I		S								
4	Presence of work force																				S								P		
5	Site clearance, excavation and installation of solar PV structures	S		S				I		S		I		S	S	S				S					I	I					
6	Material storage, handling and use on-site	I																			I	I									
7	Temporary power generation (mobile generators)	I	I	I																											
8	Hazardous and non-hazardous waste disposal					I	I														S	S								S	
9	Wastewater generation and discharges																													S	
10	Water supply							I																						S	
B Operational Phase																															
1	Solar PV Plant																				I									P	
2	Water supply								I																					S	
3	Procurement of materials and services																												P	P	
4	Employment of labour																					I							P	P	
5	Transportation of materials, products, labour and waste for maintenance																						I								
6	Wastewater generation and disposal																													I	
7	Hazardous and non-hazardous waste disposal																													I	
8	Physical presence of structures and facilities									S		S			S	S										S					
C Decommissioning Phase																															
1	Vehicular movements and traffic	I	I	I									I								I		I								
2	Demolition of buildings and removal of infrastructure	I	I	I						I		I		I	I	I					I	I							P		
3	Waste generation and disposal																						I							S	
4	Wastewater generation and disposal																													S	
	No interaction																														
I	An interaction with the environment or receptor which is not expected to be significant																														
S	An interaction with the environment or receptor that could be significant (Also identifies data gaps)																														
P	Denotes a positive interaction																														