REPORT

Executive Summary Environmental and Social Impact Assessment for the Proposed Neo I 20 MWac Solar PV Power Plant to Supply the LEC Ramarothole Substation in the Mafeteng District, Lesotho

Client: Neo I Pty Ltd
Reference: MD4071
Status: 0.1/Final
Date: 29 November 2019
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Project name: Mafeteng 20MW PV Plant
Project number: MD4071

Drafted by: Sibongile Gumbi and Kim Moonsamy

Checked by: Malcolm Roods

Date / initials: MR

Approved by: Henk Blok

Date / initials: HB

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BACKGROUND

The Government of Lesotho, under the Ministry of Energy and Meteorology (MEM), has appointed Neo I Consortium to implement the NEO I 20MW Photovoltaic Power (PV) Generation Development Project. The 20MW PV Solar Power Plant is to be located on a site that is approximately 66 hectares in extent and is in close proximity to three villages, namely, Ha Ramarothole, Ha Lempetje and Ha Raliemere under Tšana-Talana Community Council in the Mafeteng District (Figure 1).

Subsequently One Power Consortium appointed Royal HaskoningDHV to conduct the Environmental and Social Impact Assessment (ESIA) for the project, in accordance with International Finance Corporation (IFC) Standards. The Project will entail the construction of a PV Power Generation Plant that will include plant operations and maintenance for up to 25 years, and solar power generated will be sold to Lesotho Electricity Corporation (LEC).

Royal HaskoningDHV has been assigned to support this development by undertaking, amongst others, a Gap Analysis, including a Redress Action Plan, on previous environmental and social work performed in relation to the Project, as well as the Environmental and Social Impact Assessment for the Project, following national legislation and IFC Performance Standards (IFC PS) and African Development Bank Operational Safeguards (AfDB OS).
Figure 1: Location of the Study Area
Purpose of the ESIA Process

The purpose of the ESIA is to identify potential positive and adverse environmental and socio-economic effects that may arise from the Project, identify the measures to be used to manage, mitigate, and monitor the impact of those effects, and to assess the net impact following mitigation. Impacts are to be assessed using the environmental and social baseline conditions as a point of departure.

In addition to identifying and assessing impacts, measures required to avoid, prevent, mitigate or compensate significant adverse impacts and enhance beneficial impacts have also been included as an integral part of the ESIA. Reference is made to plans to monitor, manage and evaluate the implementation of mitigation measures and the Project’s performance in terms of environmental and social baseline conditions.

The ESIA serves the following purposes:
- To allow policy makers to appreciate the extent and significance of any potential impacts associated with the Project, and take these into consideration while planning the execution of the Project;
- To provide basic information to the competent authorities in accordance with legally defined and regulatory procedures; and
- To provide clear instructions to works supervisors and contractors with regards to any measures that need to be implemented to limit any potential negative impacts to acceptable levels.

The Lesotho Ministry of Tourism, Environment and Culture (LMTEC) is the Competent Authority (CA) that needs to provide a decision regarding the Environmental and Social Impact Assessment Report and Environmental and Social Management Plan. The ESIA Report follows the legislative process prescribed in the Lesotho Environment Act (Act No 10 of 2008).

Details of the Project Developer

The Developer is Neo I and the details of the responsible person are listed in Table 1 below.

<table>
<thead>
<tr>
<th>DEVELOPER</th>
<th>NEO I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Persons</td>
<td>Matthew Orosz</td>
</tr>
<tr>
<td>Postal Address</td>
<td>P O Box 36, Maseru 100, Lesotho</td>
</tr>
<tr>
<td>Telephone</td>
<td>+266 57755402/3</td>
</tr>
<tr>
<td>E-Mail</td>
<td><a href="mailto:hso@1pwrafrica.com">hso@1pwrafrica.com</a></td>
</tr>
</tbody>
</table>

Details of the ESIA Team

- Henk Blok: Environmental Expert and Team Leader;
- Malcolm Roods: Project Director, EIA Specialist;
- Ntseketsi Lerotholi: Project Deputy, Stakeholders Engagement;
Specialist Assessment

To ensure the scientific vigour of the ESIA study, as well as a robust assessment of impacts, Royal HaskoningDHV commissioned the following specialist’s studies to comprehensively identify both potentially positive and negative environmental impacts (social and biophysical), associated with the project, and where possible provide mitigation measures to reduce the potentially negative impacts and enhance the positive impacts:

Table 2: Developer Details

<table>
<thead>
<tr>
<th>SUB-CONSULTANT</th>
<th>COMPANY NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garry Patterson</td>
<td>Agricultural Research Council</td>
</tr>
<tr>
<td>Soils and Agriculture</td>
<td></td>
</tr>
<tr>
<td>Stuart Thompson</td>
<td>EBS Advisory</td>
</tr>
<tr>
<td>Air Quality</td>
<td></td>
</tr>
<tr>
<td>Raan Robbeson</td>
<td>Bathusi Environmental Consulting</td>
</tr>
<tr>
<td>Biodiversity</td>
<td></td>
</tr>
<tr>
<td>Gerard van Weele</td>
<td>Royal HaskoningDHV</td>
</tr>
<tr>
<td>Climate Change</td>
<td></td>
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<tr>
<td>Johan van Schalkwy</td>
<td>Independent</td>
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<tr>
<td>Heritage</td>
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</tr>
<tr>
<td>Kobus Troskie</td>
<td>GCS Pty Ltd</td>
</tr>
<tr>
<td>Geotech and Hydrogeology</td>
<td></td>
</tr>
<tr>
<td>Barend van der Merwe</td>
<td>dBAcoustics</td>
</tr>
<tr>
<td>Noise</td>
<td></td>
</tr>
<tr>
<td>Paul da Cruz</td>
<td>Royal HaskoningDHV</td>
</tr>
<tr>
<td>Surface and Wetlands</td>
<td></td>
</tr>
</tbody>
</table>

LEGAL AND ADMINISTRATIVE FRAMEWORK

The development will be undertaken to meet the requirements of the Lesotho approval process and the IFC Performance Standards (PS) and AfdB’s OS. There are two approval routes which the project must follow:

- The Lesotho domestic regulatory route, which must be satisfied for the development to gain the necessary permits to undertake the construction and operational activities.
- The international investment route to secure international finance by following the IFC PS and the World Bank Environmental, Health and Safety (EHS) Guidelines and AfdB OS.

Lesotho Legal and Administrative Framework

- The Environmental Act of 1999;
- Environment Act (Act No. 10 of 2008);
- Environment Act (Act No 10 of 2008) (Noise);
- Environment Act (Act No 10 of 2008) (Air Quality);
Project Related

- Environment Act (Act No 10 of 2008) (Waste);
- Environment Act (Act No 10 of 2008) (Energy);
- Environment Act (Act No 10 of 2008) (Aquatic Resources);
- Water Act (Act No 15 of 2008);
- Land Act (Act No 17 of 1979) (as amended);
- The Land Act (Act No 9 of 2010);
- Environment Act (Act No 10 of 2008);
- Environmental Impact Assessment Guidelines (2009);
- Historical Monuments, Relics, Fauna and Flora Act (Act No 41 of 1967);
- The 2006 National Heritage Bill (2006);
- Roads Act (Act No 24 of 1969);
- Lesotho Electricity Supply Act (1969);
- Electricity Regulations (1970); and

**IFC Performance Standards**

- PS 1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS 2: Labour and Working Conditions;
- PS 3: Resource Efficiency and Pollution Prevention;
- PS 4: Community Health, Safety, and Security;
- PS 5: Land Acquisition and Involuntary Resettlement;
- PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- PS 7: Indigenous Peoples; and
- PS 8: Cultural Heritage.

**AFDB Operational Safeguards**

- OS 1: Environmental and Social Assessment;
- OS 2: Involuntary Resettlement: Land Acquisition, Population Displacement and Compensation;
- OS 3: Biodiversity, Renewable Resources and Ecosystem Services;

**PROJECT DESCRIPTION AND MOTIVATION**

**Project Description**

The Project will entail the construction of a Photovoltaic Power Generation Plant that will include plant operations as well as plant maintenance for up to 25 years. The solar power generated will be sold to the LEC. The project will also include the following infrastructures:

- A power block consisting of approximately 70 000 solar panels;
- Construction of a 33kV Powerline from the PV Plant to the Ramathole substation. The exact voltage and tower positions will be subject to a final design process and agreement with the LEC. The powerline will be approximately 1.1km in length with a servitude corridor of approximately 26m (13m in each side);
Operation and Maintenance Building;
- Construction Laydown areas;
- Inverter Station (internal substation) to increase (“step-up”) the voltage of the electricity for transmission into the grid;
- The main site entrance road is gravel, 10m in length and 6m wide and will be connecting from the existing access road; and
- Total area to be fenced is approximately 66 hectares.

As a Corporate Social Responsibility (CSR) initiative, the Project will build a standalone solar PV-battery-backup generation (LPG or Diesel) mini grid in the Raliemere community. The CSR initiative will operate as a micro-utility in the village providing modern energy access to 184 Households, 1 School and 4 Small Enterprises. The electricity will be supplied via Pay As You Go (PAYG) prepaid, metered 220VAC electricity through a Lesotho Grid Code compliant distribution network at the uniform retail tariff rate set by the Lesotho Electricity and Water Authority (LEWA). The village has been informed and surveyed through a consultative process. The solar farm will sell electricity to LEC. There are existing access roads leading to the project site from the main road.

Project Technology

The power plant will use crystalline silicon PV technology to convert sunlight into electricity. This project employs tier 1 solar PV panels mounted on single axis east to west trackers. It is anticipated that Direct Current combiners will be utilized to route power to six 4MW Inverter blocks including a step-up transformer for a medium voltage connection to the off-takers electric grid.

Project Construction

It is anticipated that construction will commence in the fourth quarter of 2019 however, this is dependent on the finalization of negotiations with the Government of Lesotho and a Lenders due diligence process. The site would be accessed from an existing, gravel access road. A 10m long and 6m wide, gravel access road would be constructed from the existing access road to the site. The existing access road would need to be graded for a length of approximately 1.3km to ensure an acceptable surface for construction traffic. Temporary access roads will only be constructed, where necessary, and rehabilitated upon completion of construction. Solar panels will be shipped to the nearest port and transported to site via road transport (flatbed trucks) as normal loads.

It is anticipated that construction traffic will consist of seven vehicles per hour, of which four will be heavy duty and three will be motor vehicles. Approximately 250 workers will be employed during the 9 to11-month construction phase and this will consist of unskilled labourers from local communities who will perform general work and imported skilled labourers. Minor levelling of the site may be needed. This would entail some cutting and filling, but most likely more filling is required than cutting. Any additional fill material required will be obtained from commercial sources. Topsoil will be removed from any cut or fill areas and replaced once levelling has taken place. The grass/low vegetation on site will not be scraped clear to keep dust to a minimum. Small shrubs or trees may be removed, if required.
A permanent on-site Operations and Maintenance (O&M) building will be constructed for the operation of the plant and will include rain water harvesting tanks for domestic water usage and will be powered by the plant. All buildings will be single story. Piles will be emplaced in predrilled pilot holes for anchoring the PV array structures to the subsurface, and concrete slabs will be poured for the inverters, step up transformers and switchgear, the power house (offices and control room), the parking lot, the back-up LPG generator and fuel tank and the security guard house.

Crews for the solar field will mount tracking frames onto the concrete poles and completed tracking frames will have PV panels installed with mounting brackets. Wiring between panels and the inverter will be underground. A security gate and associated guardhouse may be placed at the entrance to site. This is aimed at preventing unauthorised vehicular access to site during both construction and operation. The site will be fenced in with chain link fence or similarly visually permeable materials.

If possible, water will be sourced from an onsite borehole and stored on site in JoJo style tanks alternatively water will be trucked in from a municipal source. Approximately 150m3/MW (or 3000 m$^3$ in total) of water is required for construction. General and hazardous construction waste will be disposed of at an appropriate, licensed landfill facility. If there are no licenced facilities in Lesotho, then waste will be disposed of at a licenced facility in South Africa such as in Bloemfontein.

Temporary holding tanks will be utilized during construction to hold wastewater and waste will be disposed of in terms of relevant legislation / regulations.

**Project Operation**

The project will sell power to LEC for a period of 25 years and has the option to extend this period. Activities during operations will be limited to maintenance, occasional visits by LEC, LEWA, government personnel or visitors and minimal delivery of supplies and materials.

Project traffic during operations will consist of an average of six vehicles per day of which one will be a heavy duty and five will be motor vehicles. It is anticipated that approximately 11 people will be employed for the operational phase of the project and will maintain the facilities mechanical and electrical systems and conduct routine maintenance and repairs (technical oversight, safety compliance, maintenance, reporting, site work, cleaning and security). Periodically, as indicated by visual inspection and metered output, the solar field will be cleaned with water.

Approximately 20m$^3$/year of water is required during operations. Water will be sourced from an onsite borehole (if possible) or trucked in from a municipal source and stored on site in JoJo style tanks.

It is proposed to build septic tanks on site for wastewater and designs will comply with relevant legislation and regulations. General and hazardous waste will be disposed of at an appropriate, licensed landfill facility. Electricity during operations would be obtained from the site or from a back-up generator.

**Project Decommissioning**

Should operations not be extended past the initial 25 years, then full decommissioning will occur and the land will be returned as close as reasonably possible to its original state or better. Concrete foundations,
should they be required for the panels, may be removed in totality or will be broken down such that they can be covered with topsoil and revegetated. Decommissioning is likely to be of similar duration to construction, namely 9-11 months.

**Project Motivation**

The Project will contribute to a strategic phase-out of costly power imports from Mozambique, and to reducing Lesotho's reliance on imported coal-generated power from South Africa, thereby promoting power supply independence, achieving substantial savings in the national budget and abating regional carbon dioxide emissions. It is also hoped that the solar power project in the Mafeteng Province of Lesotho will contribute approximately 13% to Lesotho's maximum system demand of around 150 MW. By substituting 20 MW of costly imported power from Mozambique, it will decrease power retail prices in Lesotho. Furthermore, it will entail greenhouse gas emission substitution effects as a result of reducing imports of thermally generated power from neighbouring state, South Africa. Furthermore, the project will support rural development by stabilizing the grid in Mafeteng Province.

**Project Alternatives**

A key component in the ESIA process is the identification and consideration of feasible and reasonable alternatives. The identified feasible alternatives should be evaluated in terms of social, biophysical, economic and technical aspects. Alternatives in relation to the proposed activity or development can be defined as different means of meeting the general purpose and requirements of the activity. These alternatives can include the following:

- The property on which or location where it is proposed to undertake the activity;
- The type of activity to be undertaken;
- The design or layout of the activity;
- The technology to be used in the activity;
- The operational aspects of the activity; and
- The option of not implementing the activity.

Site and location, layout as well as the no-go option alternatives have been identified and considered for the proposed project and these are described below. It is not possible to consider alternative types of activity (solar power) and technology (photovoltaic) as the project was a tender specified by government. Therefore, other alternatives listed above were not considered.

- **Site Alternative**

  Due to the mountainous terrain of Lesotho and the prevalence of high irradiance in the western lowlands, this area was considered for site identification for the proposed project. Furthermore, site selection focused on areas adjacent to the existing LEC 132kV line and substation in the Mafeteng district. Four sites near the existing LEC 132kV line and substation were initially identified in this area for the project namely sites 1, 2, 3 and 4. A selection screening study was undertaken for the project through the review of satellite imagery; series of site visits to meet with the local chief as well as environmental assessment. Alternative Site 1 was therefore preferred from a receiving environment point of view and technical perspective.
DESCRIPTION OF THE ENVIRONMENTAL AND SOCIAL PARAMETERS

This section provides information on the environmental and social parameters and sensitive receptors that are at risk or being impacted upon by the construction and/or operational activities of the proposed Project, as identified based on literature review, field reconnaissance trips and the experience of our experts on similar projects. All environmental parameters within this ESIA report adheres to international standards and practices. Furthermore, the potential cumulative effects of the proposed Project with other proposed and consented projects in the area are also considered in this section. As far as possible, the data and reports were collected during the ESIA phase from data holders, such as previous ESIA studies, Lesotho Authorities' reports, Non-Governmental Organisations' (NGOs) studies and reports, and local University resources. In addition to the reports referred to, team members also conducted a site visit to understand the baseline environment. It must be noted that where Lesotho information was not available, South African data was used due to the proximity of these countries.

Physical Environment

Below is a summary of physical environmental impacts identified.

- Water availability;
- Loss of agricultural land;
- GHG emissions;
- Dust emissions;
- Increase of noise levels;
- Increased sedimentation due to footprint clearance and vegetation removal;
- Increased risk of flooding;
- Water pollution from vehicles spillages and machinery;
- Direct transformative impact on wetlands related to bulk earthworks (potential terracing of the site) and other clearing activities, as well as other construction-related activities including uncontrolled movement of vehicles and other construction machinery in wetlands;
- Direct transformative / degradative impact on wetlands related to terracing of site, development of roads or placing of panels on the natural slope, along with roads and buried services;
- Potential pollution of wetlands in the event of spillage of hazardous materials;
- Potential stormwater-related impact (sediment and pollutant inputs to wetlands);
- Clearing activities on parts of the site, in addition to the movement of heavy machinery could be conducive to the creation of dust clouds that could be visible from a wide area in the visual envelope of the construction site;
- Heavy vehicles traveling to the site along the unsurfaced roads will create dust clouds that will be able to be viewed from a relatively great distance;
- The solar panel arrays would alter the landscape context as viewed from the parts of the landscape (esp. visual receptor locations) within the viewshed of the proposed development due to the change from grassland / old fields to dense rows of PV arrays.;
- The supporting structures of the PV arrays could cause glint and glare if these are metallic and reflective;
- Night lighting at the plant could introduce new sources of lighting into an otherwise poorly lit night-time context;
Any physical infrastructure not removed could constitute a visual impact if it became derelict and decrepit, especially on the scale of the entire plant.

**Biological Environment**

- Loss of plant taxa of conservation importance;
- Loss of habitat associated with plant taxa of conservation importance;
- Local depletion of plant taxa and reduction of phytodiversity;
- Loss of a typical, sensitive, conservation important habitat or ecosystems of restricted abundance;
- Loss and alteration of ecological processes and ecosystem services within the proposed site;
- Exacerbated encroachment of invasive, exotic and encroacher plant species;
- Altered quality and ecological functionality (including fire, erosion) of surrounding areas and natural habitat;
- Loss of conservation important species and – habitat;
- Loss of natural habitat, including essential habitat refugia;
- Local depletion of faunal diversity resulting from human/animal conflict;
- Degradation of untransformed habitat in surrounding areas;
- Loss of movement corridors and migration patterns & introduction of alien/invasive species;
- Increase in edge effects in the ecological region of the study area;
- Depletion, losses and degradation of faunal habitat;
- Depletion of animal species and communities on a regional scale;
- Loss of habitat and displacement of birds;
- Loss and displacement of threatened and near threatened bird species;
- Creation of "new" avian habitat and bird pollution;
- Collision trauma caused by photovoltaic panels (the "lake-effect"); and
- Power line interaction: Collision with powerlines.

**Human Environment**

- Potential loss of cultivated areas on proposed development site;
- Potential loss of land due to the transmission line;
- Tenure arrangement for the proposed development site;
- Restricted access to people over the development site;
- Cultural heritage finds in the development area;
- No access to cattle shepherding and natural resources through the site;
- Sourcing of equipment and machinery locally (in Lesotho);
- Inconvenience and danger to proximate residents through increased road traffic, dust and noise;
- Local job creation opportunities;
- Perceived preferential access to a finite number of jobs;
- Increased social ills in villages in close proximity;
- Potential increase in criminal activity in nearby communities;
- Additional pressure on basic services provision (education, housing and healthcare); and
- Increase in HIV/AIDS cases and associated vulnerabilities.
A summary of the impact ratings for physical, biological and human environments are provided in the below Tables.

**Table 3: Summary of Physical Environment Impacts**

<table>
<thead>
<tr>
<th>PHYSICAL ENVIRONMENT</th>
<th>CONSTRUCTION</th>
<th>OPERATION</th>
<th>DECOMMISSIONING</th>
<th>TOTAL AVERAGE</th>
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<tr>
<td>CLIMATE CHANGE</td>
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<tr>
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<td>-4.3 (Negative Low)</td>
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<td>-4 (Negative Low)</td>
<td>-4 (Negative Low)</td>
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<tr>
<td>Average scoring with mitigation</td>
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<td>-4 (Negative Low)</td>
<td>-4 (Negative Low)</td>
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<tr>
<td>SURFACE HYDROLOGY, GROUNDWATER AND WATER QUALITY</td>
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<tr>
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<td>WETLANDS</td>
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<tr>
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<td>-7 (Negative Moderate)</td>
<td>-6 (Negative Low)</td>
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<td>HERITAGE</td>
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**Table 4: Summary of Biological Environment Impacts**

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<tr>
<th>BIOLOGICAL ENVIRONMENT</th>
<th>CONSTRUCTION</th>
<th>OPERATION</th>
<th>DECOMMISSIONING</th>
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<tr>
<td>FLORA</td>
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<td>Average scoring without mitigation</td>
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<tr>
<td>Average scoring with mitigation</td>
<td>-5.2 (Negative Low)</td>
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### Table 5: Summary of Human Environment Impacts

<table>
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<th>HUMAN ENVIRONMENT</th>
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<th>OPERATION</th>
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<tbody>
<tr>
<td>SOCIAL AND SOCIO-ECONOMIC</td>
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<td>-0.8 (Negative Low)</td>
<td>-9.5 (Negative Moderate)</td>
<td>-5.9</td>
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</table>

- Average scoring without mitigation: -7.4 (Negative Moderate)  
  Average scoring with mitigation: -3.4 (Negative Low)
ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

To achieve appropriate environmental management standards and to ensure that the findings of the environmental studies are implemented through practical measures, the recommendations contained within various specialists’ sections of the ESIA report are also included within the Environmental and Social Management Plan (ESMP). The ESMP has been compiled to provide recommendations and guidelines for environmental mitigation measures and monitoring throughout the design, construction and operational phase of the proposed project. This is done to ensure that all relevant factors are considered, and to ensure for environmentally sustainable/ responsible development. This ESMP informs all relevant parties Neo I, Contractor, the Environmental Control Officer (ECO) and all other staff employed for the project as to their duties in the fulfilment of the legal requirements for the construction, operation and decommissioning phases of the project with particular reference to the prevention and mitigation of anticipated potential environmental impacts.

CONSULTATION AND PUBLIC ENGAGEMENT

A Stakeholder Engagement Plan (SEP) is prepared in accordance with IFC requirements to allow for a two-way consultation process. The SEP ensured that consultation with stakeholders and the public is proactive, as opposed to reactive, and will be implemented through the course of the project (i.e. design, construction, operation and decommissioning). Community engagement is an important part of project development and should be an on-going process involving the disclosure of information to project-affected communities. The purpose of community engagement is to build and maintain over time a constructive relationship with communities located in close proximity to the project and to identify and mitigate the key impacts on project-affected communities. The nature and frequency of community engagement should reflect the project’s risks to, and adverse impacts on, the affected communities.

For the consultation and disclosure process associated with the Neo PV Solar Power Plant, the team followed the requirements stated in the national legislation and further improved engagement expectations with the inclusion of the IFC’s stakeholder engagement requirements.

Consultation Prior to the ESIA Process

There have been several meetings held within the 2017-2018 period in the affected villages. The villages of Ha Ramarothole, Ha Lempetje and Ha Raliemere have been engaged in meetings when the Project was in its pre-feasibility stage. Further to this, Neo I had continued to engage with PAPs, even after RHDHV was appointed, as the tenure arrangement and compensation process required finalisation.

Consultation During Scoping

The first stage of formal communication with the public was during the Scoping stage of the ESIA and was largely conducted by the social expert from Puisano Mme Mamello and our social experts Mme Ntseketsi Lerotholi and Mme Kim Moonsamy (from Royal HaskoningDHV). The consultation meeting, held on the 29th of August, produced a wide range of information from the Local Chiefs (from the local affected villages of Ha Ramarothole, Ha Lempetje and Ha Raliemere), and the Compensation committee (which was set up in 2017) as Neo I had at the time commissioned a census of the affected individual plots.
**Grievance Redress Mechanism**

During the ESIA it was imperative to implement and maintain a procedure for external communications, as well as to establish a grievance mechanism for Affected Communities, which is planned for in the SEP. The public concerned were given sufficient time to prepare and participate effectively in the process in accordance with IFC PS 1.

**Consultation During ESIA**

Consultation during the ESIA continued from previous phases (project, scoping and grievance mechanism). The process followed for the ESIA phase included the following actions in June-September 2019:

- Identification of stakeholders (government, non-governmental organisations etc.);
- Advertising the ESIA process in three local newspapers as per the Lesotho EIA Guidelines;
- Placing the draft ESIA report in local venues for public review;
- Distribution of background information document;
- Conducting public meetings; and
- Compilation of comments and response report.

**CONCLUSION AND RECOMMENDATIONS**

The ESIA process for the proposed project has been undertaken in accordance with the IFC standards, AfDB OS and Lesotho Regulatory Requirements. The essence of the ESIA process is aimed at ensuring informed decision making and environmental and social accountability as well as to assist in achieving environmental and social sustainable development.

The conclusion made in this ESIA is supported by the undertaking of comprehensive studies and specialists’ assessments. These studies were based on issues identified throughout the ESIA and the parallel process of stakeholder engagement. The stakeholder engagement process has been rigorous and extensive and every effort has been made to include representatives of all stakeholders affected by the Project.

**Physical Environment**

- **Air Quality**: Based on the predicted model results and from the general condition of the area, it is recommended that mitigation measures be put in place to manage the dust emissions expected on site. With the management measures traditionally used in the construction industry, all emissions will fall well below the ambient standards that have been used, it is expected that the site will then adequately comply with environmental legislation.

- **Climate Change**: The project’s contribution to the national GHG emissions mitigation will be significant i.e. reduce national emissions and will compensate for the small amount of emissions associated with the construction phase. Impacts will be low should the recommended mitigation measures be implemented accordingly. The climatic trends and projections indicate that water availability and temperature stress are likely to affect the region in future, and these effects must be taken into account in the social impact assessment.
Noise: The noise impact will be below 2.5dBa which is very low and therefore classified as insignificant which will not interfere with the acoustic signals for essential functions. The recommended noise mitigatory measures will ensure that the proposed PV Plant will be environmentally sustainable.

Surface Hydrology; Groundwater and Water Quality: All the recommended identified mitigation measures must be adhered to ensure that the resultant identified potential impacts on the environment is negative low.

Wetland: It is recommended that wetlands and an associated 30m buffer zone be retained as non-development parts of the site to protect these features, in this instance, indirect impacts mainly related to stormwater could still occur, however these are able to be adequately mitigated. It is recommended that the proposed development proceed as planned, provided the recommended mitigation measures are implemented.

Visual: The degree of likely visual impact created by the proposed development is directly dependent on the perceptions of the inhabitants of the local area, however the relative portion of the landscape occupied by the proposed development and the degree of overall landscape change created by the proposed development is likely to reduce the degree of potential visual impact as the development would only occupy a portion of the landscape as viewed from the closest receptor locations.

Biological Environment

Flora: The project is not expected to result in significant or severe impacts on the floristic environment on a local or regional scale; with the understanding that a complete and comprehensive mitigation approach is followed for the duration of the project, i.e. through completion of the decommissioning phase and restoration of all development areas.

Fauna: No red data listed animals or any other animals of conservation concern were encountered during the field investigation; none are known to occur in the Q-grid 2927CD in which the study area is found. The animals found to inhabit the study area and immediate surrounds are common and widespread species and not currently considered to be of any direct (species level) conservation importance. All of the impacts anticipated can be effectively mitigated, reducing those with moderate, moderate-high and high significances to impacts with low significances.

Avifauna: The proposed development and operation of the NEO 1 PV Project is not expected to result in any highly significant or severe impacts at a local scale; with the understanding that a complete and comprehensive mitigation approach is followed along with pre- and post-construction monitoring.

Human Environment

While many negative impacts can be mitigated, it will require commitment from the Project Proponent and Site Management to properly and consistently meet with the Social Management Plan (SMP) compliance requirements. Much of the mitigation found within the ESIA report will be amalgamated within the ESMP for implementation during the Project's existence. The SIA undertaken recommends necessary mitigation and monitoring measures for this Project and these need to be adhered to as it will be monitored by the Lenders party.

No fatal flaws were identified for the proposed project. The identified significant impacts can be mitigated by the developer through the implementation of the mitigation measures provided in the ESIA report and ESMP.