



Consolidated
Infrastructure
Group Limited

Fatal Flaw Analysis for the 2 x 5 MW Solar PV Plant at Gobabis, Omaheke Region


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Fatal Flaw Analysis for the 2 x 5 MW Solar PV Plant at Gobabis, Omaheke Region

Prepared for:	CIGenCo SA (Pty) Ltd
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Project Reference:	0374208
Prepared By:	Rachel Conti and Brendon Solik
Approved By:	Andrew Bradbury
Position:	Partner
Signed:	

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EXECUTIVE SUMMARY

Environmental Resources Management (ERM) was contracted by CIGenCo SA (Pty) Ltd (CIGenCo) to undertake a red flags gap analysis review of an Environmental Impact Assessment (EIA) undertaken for the 2 x 5 MW solar PV project in Omaheke region, Namibia (Ejuva One and Ejuva Two). The overall objective of the review is to undertake an independent environmental and social red flags review of the EIA against applicable standards and identify any necessary remedial actions.

The Project site is located within Gobabis Town which is situated 220 km from Windhoek and is 113 km from the Buitepos border post with Botswana. The EIA under review was approved Ministry of Environment and Tourism in Botswana an Electricity Generation License has also been granted.

The EIA was prepared by the Centre for Geosciences Research cc. ERM has reviewed this document against the IFC Performance Standards (IFC PS). Several gaps in the EIA have been identified and an action plan has been proposed to cover the gaps in order to satisfy lender requirements.

The proposed action plan covers three key steps:

- Update the environmental and social baseline information to reflect site specific or Gobabis specific information;
- Re-scope the potential impacts based on the update baseline information;
- Produce a comprehensive Environmental and Social Management Plan covering all aspects of the identified impacts including sub plans/procedures.

The proposed plan will need to be discussed with CIGenCo and lenders for the project in order to ensure all parties are satisfied with the approach to manage environmental and social risks.

A group of developers namely CIGenCo, Solar4Africa (Pty) Ltd, Benzel & Partners Investment Holdings (Pty) Limited, OKA Investment (Pty) Limited (referred to as the “developers”) are developing the 2 x 5 MW renewable photovoltaic solar power plant project in Namibia known as Ejuva One Solar Energy and Ejuva Two Solar Energy. CIGenCo as the overall Project Sponsor has appointed Environmental Resources Management (“ERM”) to undertake a red flags gap analysis review of the proposed project. ERM understands that discussions with international finance institutions for project finance are underway. Therefore the purpose of this review is to provide an assessment of the Project components against the IFC Performance Standards (IFC PS) in order to identify potential gaps that can then be incorporated into the planning process prior to finalising the operational programme.

1.1**OBJECTIVES**

The overall objectives of this Review are to:

- Undertake an independent environmental and social red flags review of the Project against the Applicable Standards (as defined further below); and
- Identify any necessary remedial actions with associated timelines and recommendations for follow up work, in order to comply with the Applicable Standards.

1.2**PROJECT OVERVIEW**

The developers are planning to develop a 2 x 5 MW renewable photovoltaic solar power plant in Gobabis, Omaheke Region, Namibia. An Environmental Impact Assessment (EIA) was undertaken by Centre for Geosciences Research cc in November 2014 for the project and an Environmental Clearance Certificate was granted in March 2015 (valid for 3 years). The site is located within Gobabis Town which is situated 220 km from Windhoek and is 113 km from the Buitepos border post with Botswana. The Town serves as link along the Trans-Kalahari Highway through Botswana to South Africa. Electricity generated will be transferred to the national grid and sold to Nampower. The Electricity Control Board has granted the Project a generation license (date not provided on license).

1.3 *APPROACH AND LIMITATIONS*

ERM has undertaken a desktop analysis to identify potential EHS issues that may be material to the project financing and which may impact the developer's ability to perform to the conditions of financing. ERM has reviewed relevant documentation in order to identify the areas that require additional attention and pose a material risk to financing. Note that this review is desk based and so there has not been an opportunity to ground truth the findings of the review.

1.4 *STRUCTURE OF THE REPORT*

The remaining of the Report is structured as follows:

- Section 2: Applicable Standards
- Section 3: Analysis of Key Environmental and social Sensitivities
- Section 4: Proposed Corrective Action Plan
- Section 5: Summary and Conclusion

The developers intend to develop the Project in line with the IFC PS requirements. The applicable environmental and social standards applied for this review are outlined in this section.

2.1 *NATIONAL LEGISLATION*

As the EIA for the Project has been approved already (i.e. compliant with local and national legislation) and has received an Environmental Clearance Certificate, a review of national legislation was not undertaken.

2.2 *LENDER STANDARDS*

2.2.1 *Equator Principles*

The Equator Principles (EPs) are a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects and are primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making. Equator Principle Financial Institutions (EPFIs) commit to implementing the EPs in their internal environmental and social policies, procedures and standards for financing projects and will not provide Project Finance or Project-Related Corporate Loans to projects where the client will not, or is unable to, comply with the EPs.

In order to facilitate potential access to funding for project development potential borrowing organisations need to consider the EPs and environmental and social risk management as part of the ESIA process.

These EPs, shown in *Figure 2.1* require that Projects conduct an ESIA process in compliance with the IFC Performance Standards on Environmental and Social Sustainability (IFC PSs). To date the EPs are adopted by approximately 82 financial institutions in 36 countries and were updated to version three in 2013.

Figure 2.1 *The Equator Principles*

1. Review and categorisation
2. Social and environmental assessment
3. Applicable environmental and social standards
4. Environmental and Social Management System and Equator Principles Action Plan
5. Stakeholder Engagement
6. Grievance mechanism
7. Independent review
8. Covenants
9. Independent monitoring and reporting
10. Reporting and Transparency

2.2.2 *IFC Social and Environmental Safeguards*

IFC Performance Standards on Social and Environmental Sustainability, 2012

The PSs define clients' roles and responsibilities for managing their projects and the requirements for receiving and retaining the IFC support. The IFC applies the PSs to manage social and environmental risks and impacts and to enhance development opportunities in its private sector financing of projects in the member countries eligible for financing. Based on a review of the Project, the following IFC PS were determined to be applicable:

- PS1: Assessment and Management of Environmental and Social Risks and Impacts;
- PS2: Labour and Working Conditions;
- PS 3: Resource Efficiency and Pollution Preventions;
- PS 4: Community, Health, Safety and Security;
- PS5: Land Acquisition and Involuntary Resettlement;
- PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources; and
- PS8: Cultural Heritage.

PS 7: Indigenous Peoples was considered in this review but was determined to not apply. There are no indigenous people (as defined by the IFC Performance Standards) in the area of influence of the Project site, as determined through desk-top based research and knowledge of the area.

Together, the PSs establish standards that the client is expected to meet throughout the life of an investment. In addition to meeting the requirements under the PSs, clients must comply with applicable national laws, including those laws implementing host country obligations under international law. Guidance Notes, corresponding to each PS, offer helpful guidance on the requirements contained in the PSs, including reference materials, and on good sustainability practices to help clients improve project performance.

The IFC Performance Standards and each of their applicability to the proposed Project are outlined in *Table 2.1*.

Table 2.1 IFC Performance Standards

Performance Standards	Applicability to Project
<p>Assessment and Management of Environmental and Social Risks and Impacts Performance Standard 1 underscores the importance of managing environmental and social performance throughout the life of a project (any business activity that is subject to assessment and management).</p>	<ul style="list-style-type: none"> • To identify and assess environmental and social risks and impacts of the Project. • To adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimise, and where residual impacts remain, compensate/offset for risks and impacts to workers, Affected Communities, and the environment. • To promote improved environmental and social performance of clients through the effective use of management systems. • To ensure that grievances from Affected Communities (both directly and indirectly affected) and external communications from other stakeholders are responded to and managed appropriately. • To promote and provide means for adequate engagement with Affected Communities throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.
<p>Labour and Working Conditions Performance Standard 2 recognises that the pursuit of economic growth through employment creation and income generation should be accompanied by the protection of the fundamental rights of workers.</p>	<ul style="list-style-type: none"> • To promote the fair treatment, non-discrimination and equal opportunity of workers. • To establish, maintain and improve the worker management relationship. • To promote compliance with national labor and employment laws. • To protect workers, including vulnerable categories of workers such as children, migrant workers, workers engaged by third parties, and workers in the clients supply chain. • To promote safe and healthy working conditions, and health of workers. • To avoid the use of forced labour.
<p>Resource Efficiency and Pollution Prevention Performance Standard 3 recognises that increased economic activity and urbanisation often generate increased levels of pollution to air, water, and land and consume finite resources in a manner that may threaten people and the environment at the local, regional, and global levels.</p>	<ul style="list-style-type: none"> • To avoid or minimise adverse impacts on human health and the environment by avoiding or minimizing pollution from Project activities. • To promote more sustainable use of resources, including energy and water. • To reduce project-related greenhouse gas emissions.
<p>Community Health, Safety and Security Performance Standard 4 recognises that project activities, equipment, and infrastructure can increase community exposure to risks and impacts.</p>	<ul style="list-style-type: none"> • To anticipate and avoid adverse impacts on health and safety of the Affected Community during the Project life from both routine and non-routine circumstances • To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimises risks to the Affected Communities.

Performance Standards	Applicability to Project
<p>Land Acquisition and Involuntary Resettlement Performance Standard 5 recognises that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons that use this land.</p>	<ul style="list-style-type: none"> • To avoid, and when avoidance is not possible, minimise displacement by exploring alternative Project designs. • To avoid forced eviction. • To anticipate and avoid, or where avoidance is not possible, minimise adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected. • To improve, or restore, the livelihoods and standards of living of displaced persons. • To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites.
<p>Biodiversity Conservation and Sustainable Management of Living Natural Resources Performance Standard 6 recognises that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living and natural resources are fundamental to sustainable development</p>	<ul style="list-style-type: none"> • To protect and conserve biodiversity. • To maintain the benefits from ecosystem services. • To promote the sustainable management of living natural resources through the adoption of practices that integrates conservation needs and development priorities.
<p>Cultural Heritage Performance Standard 8 recognises the importance of cultural heritage for current and future generations</p>	<ul style="list-style-type: none"> • Protect cultural heritage by ensuring that internationally recognised practices for the protection, field-based study, and documentation of cultural heritage are implemented. Where relevant this includes the retention of a competent professional to assist in the identification and protection of cultural heritage. • Develop provisions for managing chance finds, requiring any chance find to be undisturbed until an assessment by competent professional is complete and management actions are identified. • Consult with affected communities to identify cultural heritage of importance and to incorporate their views into the decision making process. This should involve national and local regulatory agencies. • Allow continued access to cultural heritage sites for communities that have used the sites within living memory for long-standing cultural purposes. • Avoid or minimize impacts to, or restore <i>in situ</i>, the functionality of replicable cultural heritage. • Not remove any non-replicable cultural heritage unless the following criteria are met: there are no technically or financially feasible alternatives, the overall benefit of the Project outweigh the anticipated cultural heritage loss from removal and the removal of cultural heritage is conducted using the best available techniques. • Should not remove, significantly alter, or damage critical cultural heritage. In exceptional circumstances where impacts are unavoidable, the Project will use a process of Informed Consultation and Participation (ICP).

The *IFC General EHS Guidelines* are technical reference documents designed to assist a wide range of users, including project developers, financiers, facility managers, and other decision makers, by providing relevant industry background and technical information. This information supports actions aimed at avoiding, minimising, and controlling environmental, health, and safety impacts during the construction, operation, and decommissioning stage of a project or facility.

These guidelines provide the user with guidance on common EHS issues potentially applicable to all industry sectors. The *IFC General EHS Guidelines* contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology, at reasonable costs.

IFC EHS Guidelines for Electric Power Transmission and Distribution, 2007

In the current EIA there is no information about potential transmission lines or references to tie in to substation or how the PV plant will be connected to the national grid. Therefore, conservatively, the IFC EHS Guidelines for Electric Power Transmission and Distribution have been included in this review.

The IFC Guidelines are applicable to power transmission between a generation facility and substations located within an electric grid as well as power distribution from a substation to consumers. Industry specific impacts and management measures are included within the Guidelines, including information on:

- Terrestrial habit alteration;
- Aquatic habitat alteration;
- Electric and magnetic fields; and
- Hazardous materials.

Information is also provided on Occupational Health and Safety hazards associated with live power lines, working at height, electric and magnetic fields and exposure to chemicals.

2.3

APPLICABILITY OF THE STANDARDS

In general, where different standards are prescribed by the different agencies, the most stringent of the national and international standards will apply to the Project:

“When host country regulations differ from the levels and measures presented in the EHS Guidelines, projects are expected to achieve whichever is more stringent. If less stringent levels or measures than those provided in these EHS Guidelines are appropriate, in view of specific project circumstances, a full and detailed justification for any proposed alternatives is needed as part of the site-specific environmental assessment. This justification should demonstrate that the choice for any

alternate performance levels is protective of human health and the environment". (IFC General EHS Guidelines, page 1)."

In some cases, such as for ambient air quality, the IFC EHS Guidelines state that their standards only apply 'in the absence' of equivalent national standards. In other cases, the IFC explicitly states that the stricter of the IFC or national standards must be applied ⁽¹⁾.

In general, the IFC PSs and EHS Guidelines are the most recently updated and the most specific and comprehensive. In general, they are also more stringent. Compliance with national standards is always required. When both national and international (IFC) standards apply to a certain environmental aspect, ERM discusses compliance with both, but identifies which is more stringent. When only either national or international standards apply, ERM identifies this case.

2.4 ***IFC UTILITY-SCALE SOLAR PHOTOVOLTAIC POWER PLANTS - DEVELOPER'S GUIDE***

The guide does not give specific standards that projects need to adhere to but rather offers a guide on the necessary steps that need to be undertaken in order to develop a solar project with international financing, and has been included here for information purposes. More specifically, the guide is aimed at enhancing the developers understanding of how to successfully develop, finance, construct, and operate utility-scale solar PV power plants (usually a minimum of 5MW).

The guidebook focuses on aspects of project development that are specific to solar. From this perspective it covers all aspects of the overall project development process including site identification, plant design, energy yield, permits/licenses, contractual arrangements, and financing.

The guide covers three key aspects:

- Optimum power plant design; optimally balanced in terms of cost and performance for the site
- Project implementation; key aspects of project implementation include: permits and licensing, selection and contracting of the Engineering, Procurement and Construction (EPC) company, power plant construction, and operations and maintenance (O&M).
- Commercial and financing aspects: understanding PV regulatory frameworks and specific types of incentives/support mechanisms, and tariffs impact the financial viability of a project. In addition, Power Purchase Agreements (PPAs) specify the terms under which the off-taker purchases the power produced by the PV plant; this is the most important document to obtain financing.

(1) For an example, see IFC General EHS Guidelines, page 4.

3 ANALYSIS OF KEY ENVIRONMENTAL AND SOCIAL SENSITIVITIES

Table 3.1 illustrates the review of the EIA against the IFC PS as well as suggested remedial actions that need to take place to achieve compliance.

Table 3.1 ESIA Review against IFC Performance Standards

IFC Guideline	Finding	Action
PS1: Assessment and Management of Environmental and Social Risks and Impacts	<p>Performance Standard 1 recognises the need to identify and assess environmental and social risks and impacts of a Project. The existing EIA is unable to comprehensively undertake this process primarily due to the incomplete Project Description and the lack of site specific detail with regards to the Project Site.</p> <p>A full Project Description and detailed baseline allows the EIA to fully assess the interactions between the project and the surrounding environment and can accurately assess the impact significance of each interaction. Once potential impacts have been correctly identified mitigation measures can be put place to reduce the impact significance to acceptable levels (if required).</p> <p>In the EIA the Project Description does not include information on the following:</p> <ul style="list-style-type: none"> • The amount of solar PV panels; • The layout and configuration of the panels; • The amount of land will be cleared (not just the size of the Project Site); • Site camps; • Labour and where it will be drawn from; • Project timelines; • Potential alternatives; • Resource use (water); • PV Cleaning Process; • Waste management protocols (including hazardous waste (broken panels) and any potential wastewater (from cleaning panels)); • Secondary facilities (other buildings, workshops); • Connection to the national grid and information on any potential transmission lines • Historical land use; and • The land acquisition process. <p>In the EIA the description of the Socioeconomic environment is limited and only includes information on the following:</p> <ul style="list-style-type: none"> • National level population statistics (size and density). There is no description or comparison to the town of Gobabis or the Omaheke Region • National level statistics on household electricity. Again no description of the town of Gobabis • Regional level information on sources of income. But no mentions of what type of livelihoods are dominant in the Town and its surrounds. • Generally, there is no mention of the governance, type of livelihoods in Gobabis, status of social infrastructure, or if there are any particular vulnerable groups. 	<p>Update the Project description to reflect the full list of project components and resource use based on information which CIGenCo will provide</p> <p>Update the socioeconomic baseline to reflect information for Gobabis Town as well as gaps in the baseline in order to properly inform the scoping of impacts based on publicly available information and site based data.</p>

IFC Guideline	Finding	Action
	<p>In the EIA the description of the biophysical environment is limited and only includes information on the following:</p> <ul style="list-style-type: none"> • Desktop analysis of the fauna and flora at a regional level. There is no site specific information about the vegetation or habitats on site. • No information on wind direction and velocity and air quality in relation to dust • Limited site specific information on geohydrology and water supply • Limited information on geology and no information on soils or topography <p>The identification of impacts and the methodology used is not consistent throughout the document. However, the EIA does identify a series of impacts for the construction and operational phases.</p> <p>In general, the rationale for each of the impacts is not clearly defined and does not always include impacts associated with solar PV plants. More specifically:</p> <ul style="list-style-type: none"> • Waste during the construction phase does not include potential hazardous waste from broken panels and how this will be dealt with. • Impacts on surrounding water users (ie how the potential water use at the site could affect surrounding water users) • There is no baseline information related to status social infrastructure, HIV AIDS, and heritage therefore the assessment of impacts related to these are baseless. • In terms of operations Ecological and heritage impacts would be covered in the construction section are unlikely to be an issue during operations. <p>PS 1 also promotes improved environmental and social performance of clients through the effective use of management systems. The purpose of an ESMS is to provide the Project with the structure to implement environmental and social requirements identified in the EIA in order to achieve compliance with the applicable legislation and standards identified in the EIA for the different phases of the Project.</p> <p>According to the IFC an ESMS should incorporate the following elements:</p> <ul style="list-style-type: none"> • Policy; • Identification of risks and impacts; • Management programs; • Organizational capacity and competency; • Emergency preparedness and response; • Stakeholder engagement; and • Monitoring and review. <p>There is no management and monitoring section in the EIA itself but there is separate EMP that has been produced. The EMP does not cover all of the aspects as specified by the IFC, more specifically:</p> <p>Policy:</p> <ul style="list-style-type: none"> • The EMP covers relevant national legislation in the EMP but does not include any relevant international standards <p>Identification of risks and impacts:</p> <ul style="list-style-type: none"> • The management of identified impacts is not consistent a split between two sections in the EMP. Furthermore, the all 	<p>Undertake a site visit walk over of the Project Area of Influence to update the biophysical baseline to include site specific information (where possible) and close gaps identified to properly inform the scoping of impacts.</p> <p>Use consistent methodology to identify potential impacts.</p> <p>Use the updated baseline to formally scope important impacts that need to be managed.</p> <p>Update the ESMP to reflect all impacts that could present a risk to the project, designate responsibilities clearly, and align the ESMP with the IFC PS structure.</p>

IFC Guideline	Finding	Action
	<p>impacts identified in the EIA are not consistently carried through in the EMP. For example the EMP only includes mitigation measures during the construction phase for the following impacts dust, noise, safety and security, nuisance pollution (not in the EIA), groundwater contamination, waste, and economic.</p> <ul style="list-style-type: none"> • And does not include mitigation on health and safety (worker health and safety during construction), increased informal settlement and associated problems, increased spread of HIV/Aids, increased influx into Gobabis, and heritage impacts. <p>Management programs:</p> <ul style="list-style-type: none"> • During operations all impacts identified in the EIA are covered in the EMP except for heritage impacts. <p>Organizational capacity and competency:</p> <ul style="list-style-type: none"> • The EMP identifies role and responsibilities for the implementation of the EMP; however it does not allocate the proposed mitigation measures across the designated responsible persons identified in the EMP. In addition, there is limited detail on how any potential training that may need to be undertaken in order to build competency. <p>Emergency preparedness and response</p> <ul style="list-style-type: none"> • There is no section on the emergency preparedness and response or stakeholder engagement. <p>Stakeholder engagement:</p> <ul style="list-style-type: none"> • In terms of stakeholder engagement there is no mention of how potential grievances related to the project will be managed or how stakeholder in general will be undertaken through the different project phases. <p>Monitoring and review</p> <ul style="list-style-type: none"> • For certain mitigation measures there is a corresponding monitoring action, however, the monitoring actions are vague and not time specific. In addition, there is no information about how the monitoring process may be translated into any form of environmental and social reporting for the project. Finally, there is limited information and no detailed specification on how the EMP will be reviewed and updated. 	

IFC Guideline	Finding	Action
	<p>PS 1 ensures that grievances from Affected Communities (both directly and indirectly affected) and external communications from other stakeholders are responded to and managed appropriately. And there are adequate mechanisms for affected communities to relay their grievances.</p> <p>The public participation was undertaken according to Namibia legislation and after several notifications included, a public meeting, and distribution of a BID. There is no information about how the EIA itself was distributed to stakeholders or information on the EIA approval process.</p> <p>The EIA indicate that there were three key issues identified through the public participation process:</p> <ul style="list-style-type: none"> • Employment opportunities at the plant; • The duration of the EIA process; and • Operation of the PV solar power plant. <p>There is no specific information in the EIA about how these issues have been addressed by the project proponent. In addition, as mentioned above there is no information about how stakeholder engagement will be managed as the project moves forward or a dedicated grievance mechanism.</p>	<p>Include proposed stakeholder engagement in the ESMP.</p>
<p>PS2: Labour and Working Conditions</p>	<p>PS 2 (amongst other elements) aims to promote safe and healthy working conditions, and health of workers and the fair treatment of workers in accordance of national legislation.</p> <p>Potential impacts on worker health and safety are covered in the EIA and the EMP (although under a different heading). However there is no information about the where the majority of labour will be drawn from for the project and how many workers are expected during the construction and operation phases (only an estimated number of 20-30 for the operations phase).</p>	<p>Prior to construction, a construction management plan including occupational health and safety plans and procedures will need to be developed. These should be based on CIGenCo's existing H&S documentation and adapted specific to the Project.</p>
<p>PS 3: Resource Efficiency and Pollution Prevention</p>	<p>PS 3 aims to avoid or minimise adverse impacts on human health and the environment by avoiding or minimizing pollution from Project activities and promotes the sustainable use of resources.</p> <p>Waste impacts are covered in the EIA and include waste in the form of human waste, litter, and building rubble. However, although it is mentioned in the Project Disruption that solar PV can contain toxic materials, the potential hazardous waste that could result from broken panels is not addressed in the waste impacts section.</p> <p>In addition, due to the arid nature of the project site the panels may need to be regularly cleaned due to the settled of dust. There is no information on whether water will be used to clean the panels, how much may be required, or where it will be sourced. It is important to understand whether water use for the project may affect other users. Furthermore, if there is any chemical use in the cleaning process as well this may impact wastewater discharged from the site.</p>	<p>Update impact assessment based on technical project description information provided by CIGenCo. Prepare mitigation measures and Waste Management Plan as part of ESMP.</p>

IFC Guideline	Finding	Action
PS4: Community Health, Safety and Security	<p>PS 4 aims to anticipate and avoid adverse impacts on health and safety of the Affected Community during the Project life from both routine and non-routine circumstances.</p> <p>Community health and safety is not dealt with directly in the EIA, but rather through a series of other impacts including increased informal settlement and associated problems, increased spread of HIV/AIDS and increased Influx into Gobabis. As mentioned above there is no sufficient baseline information to adequately inform the assessment that has been undertaken.</p>	Update baseline with the relevant information in order to scope the potential impact clearly.
PS 5: Land Acquisition and Involuntary Resettlement	<p>PS 5 recognises that project-related land acquisition and restrictions on land use can have adverse impacts on communities and persons that use this land.</p> <p>There are no settlements on the project site (as assessed from Google Earth) and therefore there will be no physical displacement for the project. However, the EIA does not include information about who currently owns the project site, how it was acquired, and what is the current or historical use.</p>	Verify land acquisition process and summarise findings in the ESMP.
PS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	<p>PS 6 recognises that protecting and conserving biodiversity, maintaining ecosystems services, and sustainably managing living and natural resources are fundamental to sustainable development.</p> <p>The EIA does not give site level information in terms of fauna, flora, and habitat sensitivity. However, the site (from Google Earth) appears to be disturbed and may not hold any species of the conversational significance. This assumption will need to be ground truthed and impacts to biodiversity will be managed according to any identified sensitivities.</p>	Undertake site walk over to provide site specific information which can be used to cope the potential impact clearly.
PS 8: Cultural Heritage	<p>PS 8 recognises the importance of cultural heritage for current and future generations.</p> <p>The EIA assesses the impact on heritage and states that there are no known heritage areas that could be impacted by the project</p>	Update baseline with the relevant information in order to scope the potential impact clearly.
IFC EHS Guidelines for Electric Power Transmission and Distribution, 2007	<p>The guidelines are applicable to transmission lines between substations and generating facilities. Industry specific impacts and management measures are included within the Guidelines, including information on: terrestrial habit alteration, electric and magnetic fields, and hazardous materials.</p> <p>The EIA does not include information on how the PV plant will be connected to the national grid. The guidelines will become relevant depending on the outcome of the proposed connection to the grid. Furthermore, the impact of any transmission line will need to be assessed and mitigated.</p>	Update Project description with the relevant information based on technical information provided by CIGenCo

As the EIA has already been approved and an Environmental Clearance Certificate granted, it is not recommended that the EIA is revised. Rather ERM suggests a three step process to overcome the gaps identified and align the project with the IFC Performance Standards. After receiving the updated project description from CIGenCo, the three steps are as follows:

- Update the environmental and social baseline information to reflect site specific or Gobabis specific information;
- Re-scope the potential impacts based on the update baseline information;
- Produce a comprehensive Environmental and Social Management Plan covering all aspects of the identified impacts including sub plans/procedures.

These three steps will be consolidated into an overall ESMP document. However, it is recommended that before this work commences, CIGenCo and ERM discuss this approach with the lenders to confirm this is acceptable.

The terms of reference for this process are listed below.

4.1 TERMS OF REFERENCE FOR CORRECTIVE ACTIONS

4.1.1 Task 1: Project and Baseline Definition

This task comprises two primary steps:

- Collection of relevant Project (and Project alternative) information; and
- Defining the biophysical and socioeconomic baseline conditions of the project Area of Influence (AoI).

Project Description

The intent of this aspect of the ESMP is to develop a description of the solar PV plant in order to adequately assessment potential impacts. Information for this section of the report will be derived from the client and their engineering teams.

ERM will require a comprehensive description of the project components to be able to proceed with the impact identification, management planning and the reporting. ERM will provide an information request list for CIGenCo.

ERM and the CIGenCo will agree on a design freeze date by which there is agreement on the project definition to use for the ESMP. This is important to ensure that ERM are able to proceed with the completion of the ESMP report and avoid iterative inclusions which can cause delays in finalisation.

This task will include a consideration of alternative inbuilt controls and will provide an explanation of the Project alternatives that have been considered and the reasons for selection of the Project configuration, taking into account environmental and social factors. ERM will base this on the information that is provided by the client.

Baseline Definition

The project team will prepare a description of the baseline for the assessment from available secondary data as well as additional primary data collection to be confirmed with a site visit. This will form key chapters within the ESMP report and will start with a brief overview of the role of the baseline in the overall impact assessment, will detail data collection methodologies and also highlight any limitations, along with any uncertainty that this may introduce.

The baseline section will provide a description of the environmental and social conditions that will prevail in the absence of the project. It will be concise providing sufficient information to:

- Identify the key environmental and socioeconomic conditions in areas potentially affected by the project and highlight those that may be vulnerable to aspects of the project;
- Describe, and where necessary and possible quantify, their characteristics (nature, condition, quality, extent, etc) now and in the future in the absence of the project;
- Provide data to allow the prediction and evaluation of possible impacts; and
- Inform judgments about the importance, value and sensitivity/ vulnerability or resources and receptors.

Baseline data where applicable will be presented using GIS tools and includes a visit to the site by ERM subject matter experts.

4.1.2

Task 2: Impact Identification and ESMP Reporting

In this task ERM will identify the Project impacts to allow for the development of focussed ESMP containing measures to avoid or reduce effects these Project activities. The main objectives of the task to:

- Identify and quantify in details of the environmental and social potential effects that Project is likely to generate, both positive and negative; and
- Recommend reasonable management and monitoring measures, as appropriate, to mitigate or eliminate the potential negative effects and enhance positive effects.

Mitigation and Environmental and Social Management Planning

Where potentially significant impacts are identified by the initial assessment, ERM will investigate options for mitigation to avoid, reduce, remedy or compensate for adverse effects. ERM will also consider whether there are measures that can be taken to deliver or enhance positive effects (benefits) from the project. Specific input from technical experts and socioeconomic experts will be used in identifying appropriate mitigation and monitoring measures. The output of this step is to identify the environmental and social management measures that will be put in place to manage the potential impacts identified. It is noted that CIGenCo is ISO14001 compliant and therefore has developed its own health and safety documentation as well as management plans. The ESMP output will be prepared to align with CIGenCo's documentation.

The overall process for developing the ESMP is as follows:

- All mitigation measures (and management and control measures) – essentially all the commitments by or on behalf of the client will be summarised in the form of a tabulated register.
- The register will be organised according to project activity and will include columns for the potential impact, mitigation measure, any monitoring requirement, timing, and responsibility (the client, contractors, other).
- The roles of the client and contractor with regards to Environmental and Social management will be set out.
- Context will be provided with Namibian legislation and the client's SHEQ policies, as appropriate.

ESMP Reporting

ERM will prepare an ESMP report for CIGenCo implementation that can be used during construction and operation including sub plans.

A Draft ESMP will be submitted to the client for review (submitted electronically). Upon incorporation of one set of comments, ERM will resubmit to the client as final.

4.2 DELIVERABLES AND TIMELINES

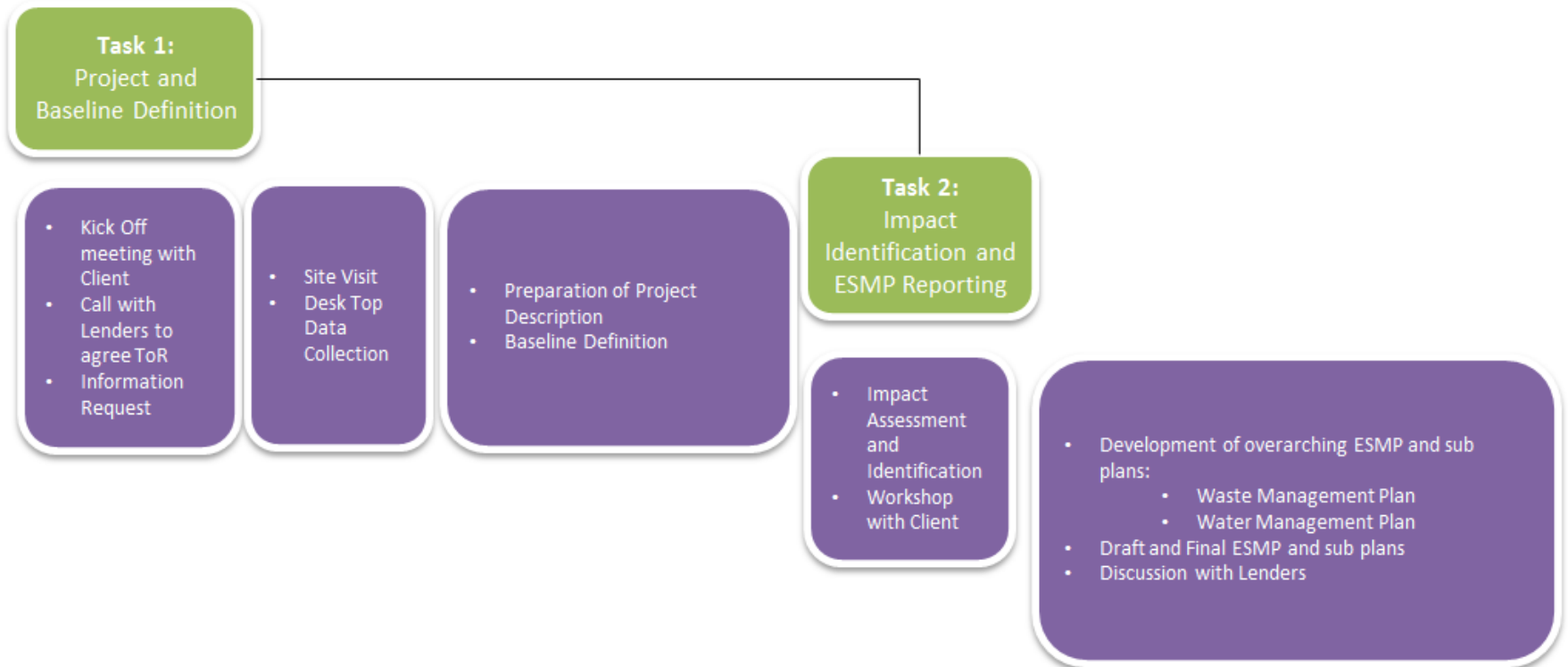
Figure 4.1 and Table 4.1 below illustrate the proposed project plan and deliverables. The list includes potential sub plans that may be needed to manage potential impacts. Additional sub plans may need to be added or others removed depending on the outcome of the impact identification process.

Table 4.1 Proposed Project Deliverables

Output for Month 1	Output for Month 2
Develop project description	Updated Impact Assessment
Baseline Definition	ESMP Plan with accompanying sub plans

Figure 4.1 Proposed Project Plan

Project Stage and Outcome	Month 1				Month 2			
Weeks	1	2	3	4	5	6	7	8



A review of the EIA undertaken by the Centre for Geosciences Research cc against the IFC Performance Standards was undertaken by ERM. Several gaps in the EIA have been identified and an action plan has been proposed to cover the gaps in order to satisfy lender requirements.

The proposed action plan covers three key steps:

- Update the environmental and social baseline information to reflect site specific or Gobabis specific information;
- Re-scope the potential impacts based on the update baseline information;
- Produce a comprehensive Environmental and Social Management Plan covering all aspects of the identified impacts including sub plans/procedures.

The proposed plan will need to be discussed with CIGenCo and lenders for the project in order to ensure all parties are satisfied with the approach to manage environmental and social risks.

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Myanmar	Vietnam
New Zealand	



ERM Cape Town Office

2nd Floor, Great Westerford
240 Main Road, Rondebosch
7700, Cape Town, South Africa
T: +27 21 681 5400
F: +27 21 686 0736
E: marinda.vandermerwe@erm.com

ERM Durban Office

Suite S005, 17 The Boulevard
Westway Office Park, Westville
3635, Durban, South Africa
T: +27 31 265 0033
F: +27 31 265 0150

ERM Johannesburg Office

Building 32, The Woodlands Office Park,
Woodlands Drive, Woodmead, 2148
Johannesburg, South Africa
T: +27 11 798 4300
F: +27 11 804 2289

ERM Maputo Office

6th Floor, No. 141, Building
Torres Rani, Av. da Marginal
Maputo, Mozambique
T: +258 84 093 9502
T: +258 84 311 9516 (Direct)
M +258 84 490 5586
M +258 82 293 5229
E: paula.gonzalez@erm.com

ERM Nairobi Office

4th Floor, Landmark Office Suites
Laiboni Centre, Lenana Road,
Kilimani, Nairobi, Kenya
T: +254 20 493 8113/4
M: +254 71 265 0516 (KE)
M: +27 72 610 6281 (SA)
E: mike.everett@erm.com

www.erm.com