Kigali, on.....14 SEP 2025

N° 11.07.023/..1085../25/MD-EDCL-FG/gu/au

ADDENDUM No 1TO THE SPECIFIC PROCUREMENT NOTICE

Title of tender: Consultancy services to support the government of Rwanda for environmental & social impact assessment and technical site studies for geotechnical, hydrology, seismic, topography and biodiversity.

Reference is made to the Specific Procurement Notice published on Newspaper (New times) No:6641, Thursday, August 14, 2025, REG Website and DG Market on tender mentioned above which was initially supposed to be opened on 12/09/2025 at 05:00 Pm Kigali time.

We hereby inform all interested Consultants that due to the Clarifications and review of TOR, the submission deadline of Expression of interest is extended as follows:

Activity	Initial deadline of sub mission (as amended to date)	Time	Updated submission deadline	Time
Submission deadline	12/09/2025	05:00 P.M Kigali Time	06/10/2025	05:00 P.M Kigali Time

Sincerely.

Gentille UMUSHASHI
Head Procurement Management Services

Félix GAKUBA
Managing Director

10th Floor KCT, KN 2 ST, Nyarugenge District, P.O. Box 3855 Kigali, Rwanda
Tel.: + (250) (0) 787172265, email: info@edcl.reg.rw, website: www.reg.rw

TERMS OF REFERENCE

FOR

Consultancy services to support the government of Rwanda for environmental & social impact assessment and technical site studies for geotechnical, hydrology, seismic, topography and biodiversity

Phase1: ENVIRONMENTAL & SOCIAL: AN ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT, ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN, AND A RESSETTLEMENT ACTION PLAN.

Phase2: TECHNICAL SITE STUDIES: GEOTECHNICAL, HYDROLOGY, SEISMIC, TOPOGRAPHY AND BIODIVERSITY.

FOR TWO SOLAR PV PARK.

June 2025

Contents

PROJECT BACKGROUND, OBJECTIVES & RWANDA ENERGY SECTOR OVERVIEW

1. PROJECT BACKGROUND

Rwanda, a landlocked country in East Africa with a population of approximately 14.0 million, has made significant progress over the past decades to expand and improve access to electricity. The country has

made significant strides in electrification, with access to electricity rising from 6% in 2008 to 79% by 2024. Grid access stands at 56%, while off-grid access is at 23%.
The system's total installed capacity has risen from 76 MW in 2010 to approximately 405 MW in 2024. As the system's capacity has expanded, the share of oil-fueled power in the country's generation fleet has declined from about 45% in 2013 to less than 10% in 2024, as additional hydropower, lake methane, solar, and peat-fueled capacity has been installed in the country, together with a rise in interconnectivity with the country.

Power demand in the country is rising rapidly in line with increasing rates of access to electricity. In the financial year ending in June 2024, power generation increased by 14% (167.1 GWh) to 1,366.4 GWh. With losses at 18.0%, the resulting power demand was 1,120.1 GWh. Rwanda's power sector has attracted significant direct investment from IPPs in recent years, with close to 63% of energy being produced by IPPs in the year ending in June 2024. In this context, the Government of Rwanda (GoR) is considering the development of an affordable utility scale solar capacity, under a solar park model, to meet the rising power demand in the country's power system.

The Government of Rwanda (GoR), , has recived financing from the World Bankand Asian Infrastructure Investment Bank (AIIB) for the "Accelerating Sustainable and Clean Energy Access Transformation (ASCENT)" Project and plans to utilise part of the funds towards finacing of consultancy services for environmental and social impact assessment studies and technical site studies as more described in this terms of reference. .
The present technical assistance will be financed under the World Bank ASCENT project and needs to be aligned with the World Bank Environmental and Social Framework (ESF).

2. RWANDA ENERGY GROUP (REG) OVERVIEW

Established in 2014, the Rwanda Energy Group (REG) with its subsidiary companies, Energy Development Corporation Limited (EDCL) and Energy Utility Corporation Limited (EUCL), are responsible for the operation and development of Rwanda's power sector, including key sector responsibilities such as the expansion of electricity access, generation capacity or the improvement of infrastructure. REG and its subsidiaries operate under the Ministry of Infrastructure (MININFRA).

2.1. CURRENT GENERATION, TRANSMISSION AND DISTRIBUTION CAPACITY

Rwanda's current power generation capacity stands at approximately 466.402MW, consisting of:

No	Name of Power Plant	Capacity
	Existing Hydropower Plants (110 MW)	
1	Nyabarongo I	28 MW
3	Mukungwa I	12 MW
4	Ntaruka	11.25 MW
	Planned Hydropower Plants	
1	Nyabarongo II	43.5MW (by 2027)
2	Rusizi III	68MW (by 2031)
3	Rusizi IV	95.9 MW(TBD)
Existing Peat Power Plant (85 MW)		
1	Hakan Peat Plant	70 MW
2	Gishoma	15 MW
Existing Methane Gas (80 MW)		
1	Kivu-watt Phase I	26 MW
2	SPLK	50 MW

3	KP1	3.6 MW (Currently non-operational)
Planned Expansion Methane Gas		
1	Kivu-watt Phase II	9 MW
2	SPLK Phase II	28 MW
Diesel (29 MW)		
1	Jabana I & II	28.8 MW (for peak & emergencies as diesel is being phased out to cut cost)
Solar (12 MW)		
1	GigaWatt Solar	8.5 MW
2	Nasho Solar	3.3 MW
Imports (106.1 MW)		
1	Mbarara-Shango-Interconnection with Uganda	100 MW
2	Mururu I(4MW), Kabale 2.1MW	6.1MW
Regional shared power plant (39MW)		
	Rusumo (Rwanda share)	26.6MW
	MururuII (Rwanda share)	12MW

The domestic network includes 220kV backbone transmission lines, as well as 110kV, 30kV and 15kV lines, supplying industrial and urban areas. As of June 2024, the system included 1,158 km, 11,389.92km, and 21,084.14km of transmission lines, medium voltage line and low voltage lines respectively. To get more details on the current and evolution of Rwanda's energy system please refer to REG's annual reports and Least Cost Production Development Planning.

2.2. INSTITUTIONAL ARRANGEMENT FOR SOLAR IPP IN RWANDA

The solar project will be financed, built and operated by an Independent Power Producer (IPP) and the tender will be carried out in accordance with the Public-Private Partnership (PPP) law and guidelines of Rwanda.

3. OBJECTIVE OF THE TERMS OF REFERENCE

The GoR plans to conduct an IPP solar park auction. These terms of reference aim at hiring a consultancy firm/consortium (the Consultant) to prepare with support from the Government of Rwanda (the Client) in the preparation of:

(i) An environmental and Social Impact Assessment (ESIA).
(ii) Resettlement Action Plan (RAP)and Environmental and Social Management Plan (ESMP)
(iii) Technical sites studies including topographic survey(Site maps), hydrological study, seismic conditions, biodiversity analysis and geotechnical investigations) for proposed sites to generate 100MWp of Solar PV plant *(sizing of the sites will be finalized with the support of the consultants)* in one/two sites of approximately area in hectares will be determined in this assignment (together the Projects) including the right of way for the grid connection infrastructures.

The objective is to prepare a detailed ESIA, ESMP, a RAP and site studies for the two identified sites including the grid connection infrastructures, in line with the requirements of the Government of Rwanda and the World Bank Environmental and Social Framework (ESF). The ESIA must aim to identify and assess potentially negative and positive environmental and social risks and impacts of the Projects and propose the most technically feasible mitigation measures to manage the identified environmental and social risks and impacts with an ESMP.

In this regard, the consultant shall identify and address potential risks and impacts through an ESI including the ESMP as part of the ESIA and the consultant will prepare himself the C-ESMP to deal with the unforeseen site-specific E&S impacts and RAP too:

- Identify and assess the potential positive and negative environmental and social risks and impacts stemming from the project during preparation, construction, operation and the decommissioning phases (direct, indirect and cumulative impacts).
- Design appropriate mitigation, management, and monitoring measures to implement an environmentally friendly and socially acceptable project, without compromising its technical and economic feasibility and help determine crucial elements that facilitate the decision-making process.

Accordingly, the ESIA/ESMP shall describe the social, physical and ecological baseline status, to assess the risks and potential impacts associated with solar activities and its installation and establish adequate E&S safeguard measures in line with the requirements of National law and international good practice such as those set out in the World Bank ESF.

SCOPE OF WORK ENVIRONMENTAL & SOCIAL

1. PHASE1: KICK-OFF

1.1. KICK-OFF MEETING

The Consultant will attend kick-off meetings with project stakeholders in Kigali, Rwanda.
The objectives of the meetings will include:

a. Ensuring a detailed understanding of the solar IPP initiative
b. Understanding the Rwanda-specific project background and technical context.
c. Establishing communications and working relationships with all relevant stakeholders.
d. Gathering data for subsequent phases.
e. Agree to outline work plan for the engagement.

1.2. E&S SCREENING

The Consultant will conduct E&S screening of the proposed sites and their right of way in accordance with the guidance provided below. In carrying out the E&S work, the Consultant will:

a. Consider views and concerns of key stakeholders, including relevant authorities, local NGOs, and representatives of affected communities. Before interacting with any stakeholder, the Consultant will coordinate with, and get consent from, the Client especially in relation to what information to disclose.
b. Clearly state all methods, assumptions, and used data sources and present collected data and results of analyses in maps reporting the locations of salient Projects features. Collected data, list of sources and relevant pictures from site visits should be included in the report or its annexes. This should include a list of names, organizational affiliation, contact details and meeting dates for all stakeholders interviewed or consulted.
c. Refer to:
   - Projects' relevant E&S laws, regulations and policies of Rwanda and WB ESF
   - World Bank Group Environmental, Health and Safety General Guidelines ("WBG EHS General Guidelines")
   - WBG EHS Guidelines for Electric Power Transmission and Distribution
   - Relevant international treaties to which the Project country is a signatory
   - Good International Industry Practices
   - Handbook for Preparing a Resettlement Action Plan, if needed
   - Good Practice Handbook on Cumulative Impact Assessment and Management
   - Relevant Project E&S instruments, including the Stakeholder Engagement Plan
   - WB good practice notes on SEA/SH in large infrastructure projects.

To note that, **for biodiversity aspects**, the Consultant is expected to provide a clear analysis, supported by necessary data and maps, on the:

a. current extent of Modified and/or Natural habitat (as per ESS6 of the ESF), especially of the zones within the Projects area that are selected for clearing and development; and
b. presence or absence of biodiversity values, their location, status and condition, and as far as possible, information on areas of habitat, key resources, and critical areas that support the values. This should include occurrence or likely occurrence of Critical Habitat values, if any (as per ESS6).

The Consultant should note that the scope of work of this ToR is essential but non-exhaustive. The advisory process is by nature "open", and the E&S Consultant will proactively identify necessary areas of engagement and respond to reasonable request for complementary analysis.

The screening process will include:

a. **Desktop review**: Review existing literature to familiarize yourself with most prominent E&S issues of the broader area where the sites are located. Where available, literature review will cover (i) existing environmental studies, scientific literature or any other type of pre-existing assessments available for the project area and/or adjacent areas; (ii) national or regional plans (e.g., Strategic Environmental Assessments, development strategies); (iii) existing programs or initiatives in the area and its surroundings relevant to E&S issues (e.g. local NGO projects).
b. **Key informant interviews**: Interview stakeholders with relevant experiences or knowledge of the region biodiversity and social matters to fill gaps/confirm the results of the screening.

Site visit: Conduct a walkover/site reconnaissance (1-2 days) of the site(s) to provide initial confirmation of desktop results and collect additional information, for example through interviews with stakeholders involved in the day-to-day management of the area of interest to collate any historical or currently undocumented information. At least one visit per site will be undertaken, unless the desktop review (validated by knowledge of local experts) already indicates that the site presents a fatal flaw (e.g., the site is confirmed to be in a legally protected /internationally recognized biodiversity area that qualifies as Critical Habitat per ESS6). The screening will cover the sites and the ancillary/associated infrastructures (connection to the grid and road access), will be based on the mitigation hierarchy and will follow the criteria indicated below.

- **Social aspects:**

- Avoidance of physical displacement of formal and informal occupants, including those with recognizable legal rights and/or customary claims to land and those with no legally recognizable legal rights or claims
- Avoidance / minimization of economic displacement of formal and informal users, including those with recognizable legal rights and/or customary claims to land and those with no legally recognizable rights or claims, (e.g., herders, farmers, sharecroppers, nomadic people periodically passing on the land for subsistence and traditional activities, communities accessing resources relevant to their livelihoods)
- Avoidance / minimization of land with claims and grievances related to its previous uses and/or linked to prior government managed resettlement, historical disputes, forced evictions, or located in areas affected by significant land grabbing
- Avoidance / minimization of impacts on cultural heritage
- Avoidance / minimization of risks of the project on vulnerable groups including those recognized as Historically Marginalized People (HPs) with in Rwanda
- Avoidance of impacts on critical cultural heritage as defined in ESS7
- Distance from settlement and potential for visual impacts and/or impairment of community access to neighbors, arable land, forest resources etc.
- Avoidance / minimization of impacts on ecosystem services
- Avoidance / minimization of impacts on community health and safety, including those resulting from labor influx

- Avoidance of SEA/SH related risks, child labor and forced labor.

1.3. BIODIVERSITY

- Avoidance of overlap or impacts to legally protected areas and internationally recognized sites
- Avoidance of overlap or impacts to areas meeting criteria for Critical Habitats (i.e., habitats of significant importance to highly threatened species, endemic/restricted range species, globally significant concentrations of migratory/congregators species, highly threatened/unique ecosystems, key evolutionary processes).
- Avoidance /minimization of overlap or impacts to areas considered Natural Habitat and encourage overlap or impacts to areas considered Modified Habitats (Note: some Modified Habitats may also contain important biodiversity values).
- The screening should report distance from legally protected areas, internationally recognized sites, and areas meeting criteria for Critical Habitat
- Other environmental aspects to consider: (i) Distance from groundwater (wells) recharge areas and surface water bodies; and (ii) Identification of high risks linked to water supply and/or water stressed areas.
- **Endangered & Protected Species:** Identify species classified as endangered, vulnerable, or protected under national and international laws (e.g., IUCN Red List, CITES).
- **Migratory Routes & Corridors:** Assess the presence of migratory species and wildlife corridors.
- **Displacement of Wildlife:** Identify potential disturbances to residents and migratory species.
- **Impact on Soil and Vegetation:** Assess changes in soil quality and vegetation cover due to land preparation.
- **Water Resource Impact:** Analyze potential changes in water availability and quality (e.g., groundwater depletion, runoff).
- **Heat Island Effect:** Examine potential impacts of heat generated by solar panels on local microclimates and species.
- **Long-term Ecological Changes:** Predict long-term biodiversity shifts due to land use change. Assess the presence and proximity of surface water bodies, wetlands, or groundwater recharge zones in and around the project area.
- Evaluate the anticipated use and discharge of water associated with the project, particularly during panel cleaning or other operational processes.
- Analyze the project site's susceptibility to natural hazards such as flooding, landslides, or seismic activity, and assess potential risks.
- Determine the potential for noise and dust generation during construction activities and evaluate their possible impacts on surrounding environments and communities.
- Identify and assess the types and quantities of hazardous materials that may be involved in the project, including photovoltaic (PV) panel waste, battery storage systems, and related substances.
- Evaluate the potential impacts of glare, noise, and dust on nearby communities during all phases of the project.
- Describe the plans for worker accommodations, including location, capacity, and associated services, and assess potential environmental and social impacts.

The Consultant will present its conclusions, data sources (including the list of key informants interviewed) and key aspects for E&S of each site in a screening report.

- **Initial site visits**

The Consultant will visit the sites with representatives from the Client. The Consultant should ensure that the staff visiting the sites have suitable expertise (e.g. ground conditions, E&S) to identify any

evident fatal flaws which may prevent the development of solar projects on these sites and make an initial assessment of all relevant aspects of the sites including the right of way.

2. PHASE2: ENVIRONMENTAL & SOCIAL SCOPING

2.1. TASK FOR ENVIRONMENTAL & SOCIAL SCOPING

Task (a): Building upon the desktop review conducted at the screening stage, compile and review available, up to date information relevant for the assignment[1]. This should include assessing the quality and representativeness of environmental and socio-economic secondary data and should cover all E&S aspects addressed in the ESF. Subject to this review and the results of the screening, collection of primary data may be needed through subsequent walkover/site reconnaissance by subject matter experts (social/biodiversity) to fill information gaps. Primary data collection will be based on field observations and key informant interviews.

Task (b): Identify and preliminarily assess and define the magnitude of key E&S risks and impacts associated with the Projects, including ancillary and associated facilities, that the Client and bidders need to know (e.g., because to be addressed in parallel to tendering, or because of significant resources required address them). The Consultant will assess the key risks to a level sufficient for bidders to understand these risks and to approximately price mitigation measures. Under this task, the Consultant will:

- Preliminarily estimate the Project area of influence and define the E&S scoping study area accordingly.
- Identify sensitive receptors (e.g. communities, natural features, biodiversity values) within the area of influence.

Social scoping

- Confirm applicability of ESS5 and further elaborate on the land issues considered at screening stage. In particular: (i) confirm the ownership status of the land necessary for the Projects; (ii) confirm the current formal and informal use of the land (e.g., use for natural resources, agriculture, grazing, ecosystem services etc.), including use by those with formal legal rights or customary claims to land and those with no legally recognized claims. This includes any nomadic or pastoral groups who may not live in the vicinity of the site but may use the area periodically or on a temporal basis; (iii) estimate the magnitude of physical / economic displacement - this should be based on number of affected households (approximate), an indication of their vulnerability level (e.g., above/below poverty line, likelihood of having alternative means of livelihood, belonging to minority groups or more vulnerable groups in the Project context etc.), and number (approximate) of affected residential / commercials structures and agricultural land parcels grouped in few, relevant categories; (iv) summarize information on existing claims and grievances related to previous land uses / historical disputes / forced evictions / widespread land grabbing in the broader area etc., and indicate how these may affect the Project. For land recently acquired in anticipation of
- the Project or other developments, review the land acquisition process, clarify whether completed or ongoing, and highlight any outstanding issue and possible corrective actions to close gaps with the ESF.
- Assess the risks of the project on vulnerable groups including those recognized as Historically Marginalized People (HMPs) within Rwanda.
- Undertake a preliminary assessment of other key social risks such as potential for significant impacts during construction (e.g., construction traffic through narrow

[1] This relates to information covering the broader project area. Information could be extracted from national census, sector surveys, national or international databases, national indexes, research reports, academic articles, studies from experts from government organizations/industry/academia, aerial photos and satellite imagery etc.

- village roads, influx of workers and impact on social infrastructure, whether there will be the need of worker camps and land is available nearby), risks linked to potential use of armed security / interaction with state security forces, risks of affecting cultural heritage and its use and importance for the community (and applicability of ESS8), risks to priority ecosystem services, SEA/SH related risks, child labor and forced labor etc.

Environmental scoping

- Confirm the results of the screening in relation to biodiversity aspects and map all major habitat types using existing vegetation maps, land use maps, satellite imagery, aerial photography and other supporting information. The Consultant will also provide rationale for categorization of habitat types as Natural or Modified in the form of a table showing: (i) Description and extent of habitat types or land classification around influence; (ii) Rational for classification as Natural or Modified habitat; (iii) Any supporting evidence such as representative photos etc. The consultant will also undertake a preliminary assessment of the risk of collision posed by any new transmission lines to sensitive bird species (e.g., large-bodied, migratory, threatened, restricted range/endemic species).
- In collaboration with the technical assessment, undertake a water use analysis to: (i) describe the climatic conditions, (ii) present feasible cleaning mechanisms and estimate water needs for each Project phase, (iii) assess availability and sustainability for the lifetime of the Project, including how exploitation may adversely affect current water users.
- Consider the environmental, health and safety risks and impacts associated with drainage and flooding (based on a hydrological study to be completed by the technical consultant) and other natural hazards.
- Preliminary assesses the potential for cumulative impacts.
- Investigate current waste management/disposal practices in the country and identify ways to overcome the lack of proper disposal sites, as relevant.
- Provide an understanding of how the Project success and its ability to meet the ESF could be affected by the contextual risks, such as vulnerability to drought, historical extensive land take and land related conflicts, and instability/security risks.
- Water Use and Discharge: Assess the anticipated water requirements during construction and operation, including panel cleaning, and evaluate potential sources, sustainability, and impacts of water abstraction and discharge on local water bodies or users.
- Glare, Dust, and Noise: Identify and evaluate the potential for glare from solar panels, dust generation from construction activities, and noise emissions during all project phases, and assess their potential effects on nearby communities, sensitive receptors, and ecosystems.
- Waste and Hazardous Materials: Determine the types and quantities of waste and hazardous materials that may be generated during construction, operation, and decommissioning: including PV panel waste, chemicals, or batteries, and evaluate risks and proposed management measures.
- Occupational Health and Safety: Assess potential risks to worker health and safety throughout the project lifecycle, including hazards related to electrical systems, working at heights, and exposure to hazardous materials, and identify appropriate risk mitigation measures in line with national laws and international standards.
- Community health and safety: Analyze the potential impacts on community health and safety, including risks related to traffic, exposure to hazardous materials, and proximity to project infrastructure, and recommend appropriate mitigation strategies.

Task (c): Preliminary map key stakeholder groups and analyze their views, with a focus on Affected Communities. The Consultant will provide a list of key groups of stakeholders, their interests and concerns, and how they should be involved at the different stages of the process and by different parties.

Where the Client has already started consultation activities, review the process (including presence and effectiveness of any grievance mechanism) and suggest corrective actions as needed.

Task (d): For identified key risks and impacts preliminary identify possible mitigation measures, including monitoring activities, and propose an E&S risk allocation (e.g., the Client, the concessionaire, other government agencies) together with a timeline for implementation (e.g., prior or after the tendering). The suggested measures should be based on the mitigation hierarchy and aim at achieving compliance with the WB ESF and IFC PS. The E&S Consultant will also provide preliminary estimates of costs associated with the proposed E&S mitigations. A tabular format is recommended for presenting risk allocation and cost estimates (e.g. key risk/impact; mitigation to comply with WB ESF and IFC PS; responsible party; timeline for implementation; estimated cost). While proposed mitigation measures and monitoring activities will be described within the body of the scoping report, the table will be included as a separate annex to the scoping report.

Task (e): Map out roles and responsibilities within the public party for E&S matters pertaining to the Project to identify bottlenecks and areas that would benefit from improvement (e.g., institutional arrangements and/or capacity building programs). This task will be included as a separate annex to the scoping report and should include community benefit for power generation and the electrification of impacted communities.

2.2. PHASE 3: ESIA REPORT

Using the results of the E&S Scoping Report, the Consultant will prepare the ESIA document, consistent with the WBG and Government of Rwanda requirements and acquire all missing data for evaluating the project impacts to develop the corresponding documents.

The following aspects should be covered by the ESIA at a minimum:

a. **Description of the Project and its associated facilities** (if any). The Consultant shall produce a concise and comprehensive project description supported by maps, plans, graphs and charts to provide an easy and structured overview. The description shall be based on information on existing project reports and documents (e.g. this may be an extract from pre-feasibility study or other design documents) and illustrate the geographic layout of all key components. The level of detail of the project description shall be commensurate with potential project effects on the receiving environment. This may include –depending on the project – energy demand and consumption, nature and quantity of the materials and natural resources (including water) used, number of workforces that will be involve at the peak of the project etc.

   The ESIA report shall include maps at appropriate scales to illustrate the general setting of project-related development sites and associated facilities, as well as surrounding areas likely to be impacted. These maps should include:
   - Topographic contours, as available,
   - Locations of major surface waters, roads, railways, town centres, political boundaries, parks and reserves, and ecologically sensitive areas.
   - (As available), maps to illustrate existing land use, including agricultural, industrial, residential, commercial and institutional development, forests, grazing areas etc.

b. **Assessment of Alternatives.** A systematic identification and consideration of feasible alternatives to the Project in terms of location, technology, design and scale in terms of potential environmental and social impact shall be compiled. Specifically, the alternative analysis should provide an overview of the main reasons and rationale for selecting the chosen option, including a comparison of the environmental and social effects. The analysis should include the 'business

as usual' option. Mitigation and compensation measures should be considered when assessing alternatives, both with a view to strengthening the feasibility of the Projects, and to improving the Project's design. The Alternative Assessment chapter shall contain a description of the reasonable alternatives that were assessed and an indication of the main reasons for selecting the chosen option regarding their environmental and social impacts and risks.

c. **Data collection and description of the baseline environment.** Based on the scoping results the Consultant shall collect, collect, collect, collate and present baseline information on the natural (biological and physical) and human environments (social, cultural and economic) of the study area by qualified experts. This baseline description shall be derived from both secondary sources and fieldwork to collect primary data where required and should be inclusive of, but not be limited to:
   - Physical environment (geology, ground topography, climate, air quality etc.).
   - Biological environment (i.e., flora and fauna types and diversity, endangered species, sensitive habitats, ecosystems and their services etc.).
   - Social and cultural environment, including present and projected (i.e., demography, population, land use, planned development activities, infrastructure facilities/community social structures, employment and labor market, sources and distribution of income, cultural/religious sites and properties, vulnerable groups and indigenous populations etc., infrastructure and basic social services.).
   - Economic activities (agriculture, livestock, industries, tourism etc.).

   Data gaps or uncertainties inherent in the baseline description shall be stated and explained. Data presented within the baseline description should be sufficient to describe the key aspects of the Area of Influence (AoI) of each environmental and social component and be focused on identified determinants such as project location, design or operational controls. Baseline description shall also indicate the accuracy, reliability and sources of the data presented. Based on the Consultants' professional experience and judgement, required studies or surveys to be performed for baseline data gathering shall be presented in the document, such as:

- Biodiversity Assessment including critical habitat assessment
- Cultural Heritage Assessment
- Cumulative Impact Assessment
- Socio-economic survey
- Visual Impact Assessment
- Climate Change Study

The Consultant shall keep into consideration population seasonality when planning to undertake the studies to ensure both dry and wet seasonal data is represented as reasonable as possible.

d. **Description of the legislative and regulatory framework and requirements, including a gap analysis with international standards.** The Consultant shall provide a comprehensive and appropriately detailed description of the Rwandan legislative requirements and framework relevant to the Project (i.e. describing the key laws, regulations or ordinances etc. in the area of environment, social aspects, labor conditions and occupational health and safety).This description should include the context of national/regional/local environmental and social programs, as well as regional development or sector development frameworks in place. The legislative framework should identify relevant environmental and socio-economic legal requirements (laws) applicable to the assessment and to be adhered to within project implementation (e.g. related to air emissions, wastewater discharge, noise, etc.). Additionally, the Consultant shall describe the relevant international environmental and social obligations of the country (conventions etc.). The Consultant shall further highlight any permitting and licensing requirements which the project will need to obtain.

e. **Assessment of environmental and social impacts and risks of project facilities and activities.** The Consultant will identify the positive and negative environmental and social impacts (direct, indirect and cumulative, regional, local, reversible, temporary and permanent) potentially stemming from the Project. This should include impacts in terms of magnitude, significance, reversibility/potential for mitigation, extent, duration (major, moderate, minor and negligible impacts) during the pre-construction, construction and operation/ maintenance phases as well as for decommissioning or closure and reinstatement. To do so, the Consultant will make use of a robust and consistent qualitative or semi-qualitative methodology. Quantitative data should be employed to the extent possible. The assessment will also compare the identified impacts with the "without project"-scenario impacts. The chapter should also identify opportunities for environmental enhancement and identify key uncertainties and data gaps. Impact Assessment will also cover cumulative impacts, climate change impacts (and to the extent appropriate) a health and safety risk assessment and community health and safety risks.

The ESIA should take into consideration the assessment of the environmental and social risks and impacts related to the following World Bank Environmental and Social Standards namely, ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS7, ESS8 and ESS10), identification of vulnerable groups, including IP/SSAHUTLC and assessment and management of environmental, health and safety and social risks and impacts related to contractors.

- *ESS2: Labor and Working Conditions.* The ESIA will assess labor risks and working conditions. The assessment will include risk from project activities and key labor risks such as hazardous work, child labor and forced labor, migrant or seasonal workers, discrimination against women, vulnerable groups, etc., labor influx, occupational health and safety, possible accidents and emergencies, among others. The ESIA will identify project workers (direct workers, contracted workers, primary supply workers, and community workers) and will develop Terms of Reference for the preparation of Labor Management Procedures which will set out the way in which project workers will be managed, in accordance with the requirements of national law and labor requirements under ESS2.
- *ESS3: Resource Efficiency and Pollution Prevention*. The ESIA will determine the source, type, and risks associated with the likely impacts from the solar and on natural resources and environmental pollution, and where it cannot be avoided, the ESIA will propose appropriate measures to minimize, reduce and, where not possible, mitigate, the risks associated with the identified impacts consistent with the requirements under national laws and good international practices such as those set out in ESS 3. Mitigation measures will be included in the environmental and social management plans that will be prepared as part of the ESIA studies for the solar park. The ESIA study should further consider aspects such as climate change and how the project contributes to Greenhouse Gas Reduction, water needs and waste likely to be generated during the life cycle of the Project.
- *ESS4: Community Health and Safety*. The ESIA should assess the risks and impacts of the project on health and safety of the communities that are exposed to the project activities both in the AOI but also in ancillary facilities such as borrow pits, quarry sites, spoils disposal areas, workers' camps, hauling routes, etc. It should assess impacts of labour influx on the communities' health and safety as well as traffic safety, SEA/SH risk to communities and commuters during construction.

f. **Mitigation and Management of Impacts and Risks.** Working in collaboration with the Client, other responsible institutions, agencies, organisations and representatives of affected groups, the Consultant will identify and develop realistic and cost-effective mitigation measures for significant negative impacts predicted to occur as a result of the different project phases (Pre-construction phase, Construction, Operation and maintenance, Decommissioning or closure and reinstatement) - whether direct, indirect or cumulative, temporary or permanent. These

measures will avoid, minimize and/or compensate or offset such impacts, in that order of priority to be aligned with the mitigation hierarchy. Any residual negative effects after mitigation measures will be described. These measures will cover all aspects and phases of the project and may include, but are not limited to, changes in the project's footprint, design details and operating procedures, land management, social support, institutional development and capacity building for both government and civil society organisations. The measures will pay particular attention to the principles of sustainability, including equitable social development with minimal impacts on biodiversity and ecosystem services. To ensure that the biodiversity is well analysed and protected the consultant will develop mitigation measures tackling the following: (i) Avoidance Strategies: Identify sensitive biodiversity zones to avoid or minimize ecological impact. (ii) Habitat Restoration & Compensation: Plan reforestation, afforestation, or biodiversity offsets. (iii) Wildlife Corridors & Buffer Zones: Establish buffer zones and wildlife passages to reduce habitat fragmentation and (iv) Sustainable Land Management Practices: Implement erosion control, native vegetation retention, and sustainable water use. Regarding social issues, mitigation measures should be developed in line with policy frameworks of the host counties that may exist on various governmental levels and, if applicable, any international policies. (e.g., poverty reduction strategy, policies on infrastructure development, etc.).

g. **Residual Impacts and Risks.** The Consultant will describe key residual impacts and their significance. Environmental and social risks such as the potential for accidents and incidents should also be considered. The Consultant shall also describe proposed contingency planning and measures and evaluate their adequacy. Social risks are context-specific and could include factors such as:
   - Economic changes, e.g. inflationary trends.
   - Political changes that could make it difficult to implement mitigation measures.
   - Unforeseen events, e.g. natural disasters.
   - Lack of people with the necessary skills to implement mitigation measures.

h. **Compiling relevant ESIA Annexes.** The Annex shall be used to present supporting information to the ESIA to allow for the main text to remain relevant. The Annex shall include:
- The names of the people responsible for preparing the ESIA
- The Terms of Reference of the consultancy conducting the ESIA
- References and sources of information
- Stakeholder Engagement Plan and Records of public meetings and consultations held
- The Scoping Report
- Supporting technical data / Supporting special studies including Biodiversity Management Plan
- Terms of References for the additional management plans and procedures stipulated in this ToR and as may be identified as relevant by the Consultant
- A photo log

i. **Preparation for a Non-Technical Summary (NTS).** The Consultant shall compile and include an easy-to-understand NTS of the ESIA and stakeholder engagement. The NTS will serve to inform the public and other interested parties of project activities. The NTS shall be in the form of a concise, standalone document and should include:
   - A concise summary description of the proposed project.
   - The rationale for the proposed project.
   - The geographical area that the project will influence (AoI).
   - A short description of the baseline in the AoI;
   - Any significant environmental and social impacts.
   - Any significant issues or opportunities.

- A summary of key aspects of the ESMP.
- Residual risks/issues and material information gaps or the need for further studies should be highlighted.
- The nature of the developer's/project's systematic approach to managing the environmental and social aspects of the project including monitoring activities; and
- A summary of stakeholder consultation being held and further activities, information about availability of grievance mechanism and contact details for further information.

The ESIA report shall be presented in a logical and clear format and include an assessment of the impacts prior to and following the implementation of mitigation measures. It should identify constraints associated with the mitigation methods recommended and allow provision for modification.

2.3. ESMP REPORT.

Using the ESIA report, the Consultant shall prepare a ESMP, consistent with the requirements and format as should be specified in the ESIA in accordance with the Government of Rwanda regulation and ESF, that compiles the impacts and required mitigation measures as identified in the ESIA, as well as the monitoring requirements to ensure that the identified measures are implemented and any unforeseen impact is identified and handled aligned with the ESMP. The ESMP shall include:

- details on specific management plans that will be required
- A table of the commitments based on the mitigation measures identified, which should include details on:
  - the anticipated objectives or target of each measure,
  - related milestones and time frames and
  - reporting requirements as well as
  - required resources (competencies, human resources, required equipment, materials and budgets required for the implementation of this commitment).
- Details on appropriate monitoring activities to ensure that (a) mitigation measures are effective, (b) unforeseen negative impacts or trends are detected and addressed, and (c) expected project benefits or opportunities are achieved. Indicators should be aligned to elements of the existing pre-project baseline and be (a) Specific, (b) Measurable, (c) Achievable; (d) Relevant and (e) Time-bound.

Note: The Content of ESMP will be specified in ESIA by the consultant in the consultation with the Client E&S team, Relevant National laws and WB ESF.

Also, the consultant should include a precise and specific action plan, detailing required training (technical assistance, equipment and supplies, organizational changes) for the management and monitoring of environmental and social impacts as well as corresponding costs. Where significant residual impacts remain after application of mitigation measures, the Consultant shall propose measures to compensate/offset the identified impacts. The ESMP should be clearly structured and should cover all Project phases.

2.4. PHASE 4: RAP

The assignment will involve the following tasks:

a. **Carry out socioeconomic surveys and studies**. The socioeconomic studies must start with the census of people impact and an inventory of loss. The studies will gather data on livelihoods and income to establish a baseline for developing measures of rehabilitating the livelihood and income pre-land acquisition. The studies will be carried out in a gender sensitive approach and should also pay special attention to vulnerable households to be affected. The RAP should include the results of a Census Survey on all individuals, households, infrastructure, businesses (large or small, licensed or non-licensed), farms and agricultural concerns, herding pastures, The RAP should also contain photographs and GIS coordinate information on each of the

potentially adversely affected entities or PAPs, together the with names of individuals and/or household heads, owners of each entity, names of regular employees, descriptions of the size and composition of all structures; a description of the function of the structure/entity (e.g., gas station, restaurant, market, dwelling, etc.); and information on the value of the structure and average monthly income from the concerns;

b. **Carry out socioeconomic studies in a gender sensitive approach**. Socioeconomic studies and consultations should be carried out in a gender sensitive manner. The different needs and demands of men and women will need to be considered in the survey, studies, consultations and designed mitigation measures. To extent possible, disaggregated data would be collected. If needed, consultation with women should be organized separately.
c. **Pay special attention to vulnerable groups.** The studies should help identify and gather information on vulnerable households and households who will be severely impacted, to be able to design specific assistance measures for these groups.
d. **Develop the methods for valuing the affected assets**. The consultant shall develop and describe in detail the methods used in valuing those assets that will be eligible for compensation in line with the national Expropriation law and ESS5 of the WB ESF. This method shall be consistent with both national policy requirements and regulations and ESS5. This process should capture the methodology for taking of inventory of assets, values assigned, and agreement reached with each identified PAP and consider inflationary realities in the final determination of values. Compensation should reflect the full replacement cost of the acquired assets and should be based on the current market price.
e. **Carry out consultations with various project stakeholders**, including project affected people, on resettlement options, compensation standards, livelihood and income restoration measures, institutional arrangements, and grievance redress mechanisms. It needs to summarize the outcomes from public consultations held with communities and PAPs along the road and include in an Annex summary the minute of each consultation meeting, signed lists of attendance, photographs of the consultations, and the agenda for the meeting. The Consultants should note that following the preparation of the Draft RAP, further Public Consultations should be held with the PAPs to inform them of the findings and conclusions and confirm there is general acceptance by the PAPs of the proposed mitigation measures. PAPs who are determined to be eligible for mitigation should (if they agree with the mitigation) sign.
f. **Develop the resettlement measures**. In addition to the compensation, the Consultants will need to design a package of resettlement measures for income restoration, livelihood rehabilitation, and relocation for each category of eligible displaced persons to achieve the resettlement policy. The RAP should also include the feasibility analysis of the proposed resettlement measures.
g. **Design Grievance Redress Mechanisms applicable to local social context**. The Consultants shall describe the options available to PAPs for grievance redress regarding the process, the identification of eligible people for compensation for their loss, the valuing and compensation and any other complaints they may have with the entire process. The RAP shall indicate how these would be disseminated and accessible to them clearly and comprehensible to the PAPs. The grievance redress mechanism should also have an in-built monitoring mechanism to check on responsiveness to complaints or grievances lodged. The different ways of receiving the complaints should be clearly described together with the different stages of going through the process. In addition, the redress mechanism shall indicate alternatives, in case the proposed mechanism, for any reason, does not respond to all grievances and complaints.
h. **Prepare resettlement action plan (RAP).** The consultants will prepare need RAP based on the findings and results of documentation reviews, socioeconomic studies, and consultation with project stakeholders and project affected persons in accordance with the WB Environmental and Social Framework, specifically focusing on Environmental and Social Standards 5 (ESS 5) on Land Acquisition, Restrictions on Land Use and Involuntary Resettlement. The RAP needs to clearly present detailed information on the proposed mitigation

measures for each affected entity/PAP with reasoning for the type and level of mitigation being offered. The contents of the RAP would include but not limited the following:

- **Executive Summary**: including the statement of objectives, legal framework, main impacts, and the mitigation measures, and the budget.
- **Description of the Project**, including the following 1. Key objectives of project 2. Key activities 3. Description of the project areas.
- **Resettlement Impacts**, including
    i. To provide details (or best estimates) on categories and amounts of significant adverse impact, and the number of people to be affected by each. The text should indicate how these data were obtained. As relevant in each case, this should include: (i) land to be acquired (by category of use; permanent and temporary acquisition); (ii) housing or other structures to be demolished; (iii) fixed assets taken (e.g., wells, fences, tombs); (iv) crop losses; (v) businesses (and employees) affected by temporary or permanent displacement; and (vi) disruptions to community facilities or services.
    ii. To provide details (or best estimates) regarding identification of any groups who may be particularly vulnerable to hardship. The text should indicate how these data were obtained. As relevant, this should include: (i) Those occupying or utilizing land or structures without legal title or permit; and (ii) Households are vulnerable to hardship because of poverty, age, infirmity, or other limitations to responsiveness.

- **Socio-Economic Status of Project-Affected People:** This section will be the summary of the results and findings of the socio-economic studies and surveys, including:
    i. The results of a census survey covering: (i) The current occupants of the affected area to establish a basis for the design of the resettlement program and to exclude subsequent inflows of people for eligibility for compensation and resettlement assistance; (ii) Standard characteristics of displaced households; (iii) The magnitude of the expected loss - total or partial – of assets, and the extent of displacement, physical or economic; (iv) Information on vulnerable groups or persons, for whom special provisions may have to be made; and (v) Provisions to update information on the displaced peoples livelihoods and standards of living at regular intervals
    ii. The results of other studies describing the following: (i) Land tenure and transfer systems, including an inventory of common property natural resources from which people derive their livelihoods and sustenance, non-title-based usufruct systems, and any issues raised by different tenure systems in the project area; (ii) The patterns of social interaction in the affected communities, including social networks and social support systems, and how they will be affected by the project; (iii) Public infrastructure and social services that will be affected, and (iv) Social and cultural characteristics of displaced communities including a description of formal and informal institutions that may be relevant to the consultation strategy and to designing and implementing the resettlement activities.

- **Policy Objectives, Legal Framework, and Definitions**. This short section normally would consist of standardized text outlining key objectives, principles and definitions to be employed in resettlement planning. This would include reference to Rwanda's enabling legislation and major regulations, as well as to WB ESF, and provides essential guidance on objectives and principles that are applicable in projects generating land acquisition and resettlement related impacts. Key policy objectives include: (i) Avoidance or minimization of land acquisition and other adverse impacts; and (ii) Those adversely affected ("displaced persons," as defined below) are compensated at replacement cost for lost assets and

otherwise receive any assistance necessary to provide them with sufficient opportunity to improve, or at least restore, incomes and living standards.

Legal framework, including: (i) The scope of the power of eminent domain and the nature of compensation associated with it in terms of both the valuation methodology and the timing of payment; (ii) The applicable legal and administrative procedures; (iii) Relevant laws governing land tenure, valuation of assets and losses, compensation and natural resource usage rights customary personal law related to displacement; (iv) Laws and regulations relating to the agencies responsible for implementing resettlement activities; (v) Gaps, if any, between local laws in the country covering eminent domain and resettlement and the World Banks resettlement policy, and the mechanisms to bridge such gaps and (vi) Any legal steps necessary to ensure the effective implementation of Resettlement activities under the project.

Eligibility, Entitlements Matrix: To clearly define who is eligible for compensation and assistance, the type and extent of entitlements, and ensure fair, transparent, and consistent resettlement measures, aligning with legal frameworks and international safeguard policies to protect affected persons' rights and livelihoods.

- **Inventory and Valuation of Assets.** This section provides the following information: (i) Eligibility criteria (including cut-off dates if necessary) establishing who is entitled to receive compensation (or other forms of assistance in lieu of compensation); (ii) Description of valuation procedures used to establish compensation rates for land, structures or other fixed assets; (iii) Description of arrangements for delivery of compensation to displaced persons; (iv) Compensation rates for all categories of land acquisition, for all affected areas; (v) Compensation rates for all categories of affected structures, for all affected areas; (vi) Compensation rates for all categories of other fixed assets, for all affected areas; (vii) Transitional support (e.g., moving expenses, temporary living allowances, payment of fees or other transaction costs) to be provided; and (viii) Arrangements for recalculation of compensation rates in case of prolonged delay in delivery of compensation.
- **Project Impacts:** It is critical that the resettlement planning process arrives at a detailed understanding of the likely impacts that the Project will have on those subjected to physical and/ or economic displacement. This enables the development of appropriate compensation and livelihood restoration plans, which in turn ensure that the affected people are provided with the support needed to re-establish their homes, lives and means of existence post resettlement, mitigating the impacts that resettlement may cause.

- **Income and Livelihood Rehabilitation Measures**. This section provides the following information: (i) Arrangements (in addition to compensation) providing sufficient opportunity for those losing land to improve, or at least restore, incomes; (ii) Arrangements, timing and availability for replacement housing, including site preparation and access to facilities and services as needed to improve, or at least restore, living standards; (iii) Relocation or other arrangements necessary for shops and enterprises to resume profitable operation; (iv) Arrangements (e.g., alternative employment, temporary wage support, other) necessary to maintain or restore incomes of workers in affected enterprises; (v) Relocation assistance to renters or leaseholders losing access to land or structures; (vi) Special assistance to be provided to vulnerable groups (e.g., the poor, elderly, disabled); and (vii) Restoration or replacement of community infrastructure and services.

- **Institutional Arrangements** This section identifies organizations or agencies primarily responsible for resettlement implementation. It describes these entities' capacity for effective implementation by reference to links to authority, prior experience with

resettlement, and number and training of personnel. This section also briefly describes the implementation timetable, establishing that key implementation measures precede adverse impacts.

- **RAP Budget, Implementation and Funding Arrangements**. This section includes a budget breakdown estimating all resettlement-related costs, including an allocation for contingencies. It also establishes financial responsibility for meeting resettlement commitments and describes funding flow arrangements. In this section the RAP budget should be linked with a detailed implementation schedule for all key resettlement and rehabilitation activities.
- **Stakeholder and Public/Community Participation**:

- Strategy for engaging displaced people and communities in the design and implementation of resettlement activities.
- Summary of feedback from consultations and how it influenced RAP.
- Measures to address Gender and other social Vulnerabilities.
- Methods for Consultation with and Participation of PAPs
- Resettlement Action Plans (RAPs) and Income Generation/Restoration plans
  - **Consultation, Disclosure and Grievance Procedures.** This section provides information on the following: (i) Measures taken to consult with displaced persons regarding proposed resettlement arrangements, and to foster their participation in activities essential to improvement or restoration of incomes and living standards; (ii) Disclosure arrangements for the resettlement plan, ensuring that it is made available in a language and location accessible to displaced persons and the general public; and (iii) Administrative and legal steps displaced persons can take to pursue questions or grievances they may have regarding resettlement implementation.

  - **Monitoring and Evaluation Arrangements**. This section briefly describes arrangements for monitoring and Evaluation, for both internal project purposes and external monitoring and evaluation to be conducted by a qualified agency independent of the project office. The scope and frequency of monitoring and evaluation activities should be described.

SCOPE OF WORK: TECHNICAL SITE STUDIES

3. SITE STUDIES AND INVESTIGATIONS

The Consultant will carry out a series of detailed studies on the sites. These studies will be used to provide a pack of reliable information and data for issue to bidders when the sites are tendered. These studies should be sufficiently thorough to ensure that bidders are comfortable with all relevant technical and E&S aspects of the sites.
These studies will include:

3.1. TOPOGRAPHIC SURVEY (ONE REPORT)

The Consultant will undertake a topographic survey of the sites sufficient for general planning and site arrangement. The work will include recording the site boundaries coordinates, existing ground levels, terrain and existing features including buildings, structures, services, roads, drains and watercourses. It is to be conducted on a non-intrusive basis (GPS, drones, and/or total stations). The survey will cover the entire land dedicated to the plant plus additional extension beyond the boundary as required including, where appropriate, the grid connection route. The survey completed will be certified by a qualified land surveyor and include topographic maps, GIS/AutoCAD files with contour details, survey report summarizing methodology and key findings.

3.2. GEOLOGICAL AND GEOTECHNICAL INVESTIGATIONS (ONE REPORT)

These investigations will be performed on selected sites meant to host all infrastructures related to the project.

It shall include the following components but not be limited to:

- Understanding of the regional geological setting of the country in general, from existing documents and associated maps (geological, hydro-geological, soil and other relevant maps),
- Assess the local geology, geo-morphological and hydro-geological conditions of the selected sites,
- Assess potential geo-hazards including slope instability, water tightness problems, joints & cracks, leakage, etc. at the selected sites.
- Understanding the expected ground conditions and properties of soil, erosion, high groundwater level, rocks, resistivity and providing information on the nature and extent of any underground obstructions.
- The geotechnical study will provide preliminary foundation type recommendations and foundation burial depth for the buildings and PV panel structures required for the project.
- The investigation will include dug adequate numbers of trial pits according to the selected site area at least up 3m depth for logging, disturbed soil sampling and testing.
- Drill all necessary exploratory boreholes for selected sites to depths as needed in accordance with international standards such as Eurocode, etc. in order to investigate the characteristics and engineering properties of subsurface soils, rocks and piezometric levels of groundwater. The borehole drilling shall incorporate undisturbed soil sampling, SPTs, collecting cores in boxes, and preparing borehole logs.
- Currying out all necessary numbers of Dynamic Cone Penetration Tests (DCP) according to the selected site area, taking samples for associated in-situ and laboratory tests, completing all required tests and interpreting and reporting on the results of those tests.
- A comprehensive geological/geotechnical investigation report shall be prepared including drawings for geological maps, geological cross-sections and profiles, borehole logs, test-pit logs, soil profiles along the investigation sites, etc. The report should also include complete laboratory test results and interpretations.
- Geotechnical/ Geological investigation should be performed in accordance with the common engineering practices and standards.
- These works will include electrical resistivity testing, chemical analysis of the soil conditions and groundwater monitoring to ascertain the groundwater table.

The final number of trial pits and boreholes will be agreed with the Client with the completion of the E&S screening report.

The Consultant will provide electronic geological / geotechnical maps, profiles, sections, etc. presented in all formats (pdf and in editable GIS or AutoCAD versions).

3.3. HYDROLOGICAL STUDY (ONE REPORT)

Alongside geotechnical study, hydrological study will be undertaken by the Consultant to provide hydrological information as required for the Projects. This will include assessing surface water flow and drainage patterns, evaluating groundwater levels and seasonal variations, identification of any areas at risk of flooding, including providing estimation of flood flows and flood levels, recommending measures for stormwater management and erosion control. This will also include identifying and quantifying adequate sources of water for the Project, both for construction and ongoing operation of

the scheme. The Consultant will provide adequate maps and CAD files. This study should allow bidders to understand the potential risks associated with the sites' hydrology.

3.4. SEISMIC CONDITIONS (ONE REPORT)

The Consultant will carry out a study to ascertain the seismic requirements for the sites based on the published data from the local government authorities or other available sources. This is to allow an appropriate seismic factor to be considered in the design of the buildings and foundations by the bidders.

QUANTITY & COST

4. General information

A Bill of Quantities (BoQ) and cost for the projects of 100MWp in terms of Environmental, Social, Site survey and Geotechnical Survey, and Hydrology Study is document used in project planning and procurement. It details the work scope, units, quantities, and estimated costs of each activity surveyed in the study to inform decision Makers.

5. Bill Of Quantities (BoQ)

- Environmental quantity and cost shall be based on existing environmental data, Field data collection (flora, fauna, etc.), Air quality sampling, Noise level measurements, Water quality sampling, Waste generation and disposal assessment and Environmental Impact Assessment (EIA) report and certification.
- Social Quantity and cost shall be based on Stakeholder identification and mapping, Community engagement meetings Household surveys and interviews Preparation of Social Impact Assessment (SIA) Report, Grievance redress mechanism (setup/design).
- The Geotechnical Survey and cost shall be based Borehole drilling (incl. casing and logging), Standard Penetration Tests (SPT), Collection of soil samples, Laboratory soil testing (Atterberg, Proctor), Groundwater table monitoring and Geotechnical report preparation.
- The Hydrology Survey quantity and cost shall be based on Catchment analysis, Surface water flow measurements, Flood risk assessment, Rainfall and runoff data collection, Hydrological modelling and Hydrology report preparation.

DELIVERABLES AND TIMELINE

The Consultant will comply with the following reporting requirements and provide the following deliverables:

6. TABLE FOR ACTIVITY AND TIMELINE

ACTIVITY	DESCRIPTION OF OUTPUT/ reports	TIMELINE	Review time (working days)
Phase1: Kick-off & inception report	Minutes of kick-off meeting in Rwanda; site visit; E&S screening report	2nd weeks	2days
	Draft of the E&S screening report	4th weeks	2days
	Final Inception report	8th weeks	1day
Phase2: Site Studies and E&S Scoping	Draft Topographic survey report, geotechnical investigations report, hydrological study, seismic conditions report and E&S scoping report	12th week	5days
	Draft E&S scoping report	14th week	3days
	The final TS & E&S scoping report	16th week	2days
	Draft ESIA and ESMP	12th week	7days

Phase3: ESIA and ESMP	Final ESIA and ESMP: The final report is the ESIA report approved both by the National Competent Authority that provides the Environmental Clearance Certificate and is approved by the World Bank	20th week	3days
Phase4: RAP	Draft RAP	20th week	8days
	Final RAP	28th week	2days

Time for the service is estimated to nine (9) months.

QUALIFICATION OF CONSULTANTS

7.General and Specific Experience of The Firm.

The firm should have 10 years of general experience with four completed studies, specifically two completed assignments related to solar project studies of size greater than 30MWp including evacuation line, sites survey, geotechnical investigation, social and environmental studies related successfully completion certificate to demonstrate a track record of services. The Consultants shall also or as part of a subcontract or as part of their internal expertise be able to conduct the site technical studies.

The Consultant should have solid experience working within Sub-Saharan Africa. The Consultants may submit a proposal as part as a Consortium; in this case the Consortium will appoint a Lead Consortium member as the main point of contact with the Client. The Lead Consortium members shall be responsible for managing the advancement of different tasks and organizing the different experts. It is critical and required to leverage local knowledge by partnering with local experts familiar with aspects of the region/area, local context, and applicable national/local legislation. While such partnership is essential to ensure contextual risks and the local legal environment are understood and their effects on the Project accounted for, the (Lead) Consultant will retain the ownership and quality control of any output prepared by the local expert.

The Consultant's main experts shall include the following senior staff members:

*8.*Main Experts

Required expert	Number	Education	Required experience

Lead Environmental experts	**1**	At least a master's degree in environmental sciences and related fields, Environmental Engineering, Civil Engineering and Environmental Technology, Geology and related fields	ESF expertise, track record on E&S impact assessment/ auditing of power projects including solar, with a minimum of 10 years of relevant experience proven by 3 service certificates or recommendations on similar projects.
Lead Social Expert	**1**	A least a master's degree in social sciences, sociology, economics, Development studies and related fields	ESF expertise, track record of social impact assessment, resettlement, and livelihood restoration activities for infrastructure projects, with a minimum of 10 years of relevant experience. proven by 3 service certificates or recommendations on similar projects.
Biodiversity Specialist:	**1**	At least master's degree in Biodiversity, Ecology, Conservation Biology, life sciences and related fields.	Nationally or internationally recognized for knowledge of biodiversity values and with proven expertise in carrying out the desired activities, including: (i) experience working in similar habitats around interest, country or the broader region; (ii) experience with the application of ESS6 and working with associated databases, assessments or approaches (e.g. IUCN Red List of Threatened Species, Critical Habitat Assessment). proven by 3 service certificates or recommendations on similar projects.
Geotechnical/Hydrological/Seismic Expert:	**1**	At least a master's degree in Geotechnical Engineering, Soil and Water Resources Engineering, Hydrology, Mining Engineering, seismology, Civil Engineering and related fields.	Related fields with a minimum of 10 years of relevant experience, especially in conducting construction projects studies. proven by 3 service certificates or recommendations on similar projects.
GIS/Topography Specialist	**1**	At least a master's degree in GIS and Remote Sensing, Geomatics Engineering, Land surveying Environmental Information System and related fields	minimum of 10 years of relevant experience. proven by 3 service certificates or recommendations on similar projects.

9.National E&S Consultants

It is required that an international firm work with a national firm. The local expectations should include the following staff members:

Required National expert	Number	Education	Required experience
Environmental Specialist,	**1**	At least a Bachelor's degree in environmental sciences and related fields, Environmental Engineering, Civil Engineering and Environmental Technology, Geology and related fields	ESF expertise, track record on E&S impact assessment/ auditing of power projects including solar, with a minimum of 5 years of relevant experience proven by 2 service certificates or recommendations on similar projects
Social Economic Specialist,	**1**	A least a Bachelor's degree in social sciences, sociology, economics, Development studies and related fields	ESF expertise, track record of social impact assessment, resettlement, and livelihood restoration activities for infrastructure projects, with a minimum of 5 years of relevant experience proven by 2 service certificates or recommendations on similar projects
Engagement Specialist	**1**	At least a bachelor's degree in social sciences, sociology, development studies, rural development, mass communication and related fields.	ESF expertise, track record of stakeholders' engagement, community engagement, mobilization activities for infrastructure projects, with a minimum of 5 years of relevant experience proven by 2 service certificates or recommendations on similar projects.
Gender Specialist	**1**	A least a Bachelor's degree in social sciences, Gender studies sociology, and related fields	ESF expertise, track record of social impact assessment, gender assessment for infrastructure projects, with a minimum of 5 years of relevant experience proven by 2 service certificates or recommendations on similar projects

The national firm must be registered with the Rwanda Association of Professional Environmental Practitioners (RAPEP). It must have a general experience of at least 3 years proven by its Rwanda Development Board's registration certificate and at least 3 completion certificates in conducting or implementing environmental and social impact studies/environmental and social audits for power plants, power lines, factories, mining projects/mines and extensive civil works in general.

The national firm should have familiarity with:

(i) aspects of the area and local context.
(ii) impacts of infrastructure projects especially energy related projects,
(iii) applicable national/local legislation.

The Consultant is expected to spend extensive time in Rwanda, particularly for site visits and stakeholder engagement. The Consultant will be responsible for logistics of all staff who will be involved in the project cost associated shall be mentioned in the financial proposal. The internal coordination of the consortium is the sole responsibility of the Lead Consortium member.