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Terms of Reference

ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT (ESIA) FOR BESA DAYE, BALE ROBE AND LIMU GENET

UNDER

POWER SECTOR REFORM INVESTMENT & MODERNIZATION-1

(FOR PRIME-1 COMPONENET-2)

ETHIOPIAN ELECTRCI POWERT (EEP)
ENVIRONMENTAL, HEALTH & SAFETY DEPARTMENT (EHS)

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1. BACKGROUND

1.1. Sector Context

Ethiopia's power sector is underpinned by a broad policy, legal, and strategic framework and structured by the National Energy Policy (2013; updated in 2019). The Ministry of Water and Energy (MoWE) oversees planning, coordination, and monitoring of overall energy development. In 2013, through the Council of Ministers Proclamation No. 302/2013, the vertically integrated utility, Ethiopian Electric Power Corporation was unbundled into two public enterprises: (a) the Ethiopian Electric Power (EEP), responsible for generation, transmission, and system operations; and (b) the Ethiopian Electric Utility (EEU) responsible for power distribution, sales, and customer services. The Proclamation also established a regulatory agency, the Ethiopia Energy Authority (EEA) which was recently reorganized with added regulatory responsibility on petroleum and petroleum products and renamed as Petroleum and Energy Authority (PEA).

Ethiopia faces the third highest energy access deficit in Sub-Saharan Africa with an electricity access rate of 51 percent in 2020. Over 56 million people in Ethiopia lack electricity access, posing a binding constraint to social development and economic growth. About 93 percent of urban houses are connected to the grid (99.9 percent in Addis Ababa), while only 40 percent of rural households have access to electricity services – mainly through standalone solutions. More than half of those connected to the grid are not formally registered as consumers with the utility. Per capita electricity consumption in Ethiopia is 69 kWh compared to world average of about 3,131 kWh. Launched in 2005, the Universal Electricity Access Program (UEAP) helped the electricity grid reach within 2.5 kms of 65% of all households by 2015. The National Electrification Program (NEP) was launched in 2017 and presented an investment roadmap and action plan for achieving universal electricity access by 2025 through grid and off-grid solutions, and 96% on-grid access by 2030. The NEP was designed to have a focus on fast-paced grid connections roll out, off-grid access program with strong private sector participation, and explicit cross-sectoral linkages with the productive and social service sectors. The updated version of the NEP (NEP 2.0) was launched in 2019 and presented a full-fledged integrated approach to electrification, building on best practices and incorporating off-grid solutions to complement grid electrification.

With about 300,000 households getting electrified each year, the pace of household electrification is about one-fourth of that planned under NEP2.0 for meeting the 2030 goal of near-universal grid connectivity (96%). The backbone medium voltage (MV) network in many towns of Ethiopia was mostly built more than a decade ago under the Universal Electricity Access Program (UEAP) and now stands dilapidated, overloaded, and inadequate to

accommodate further load growth or new connections. Ethiopia has invested substantial public resources in expanding hydropower capacity and the grid electricity network. As a result, installed generation capacity has more than quadrupled, despite setbacks from the pandemic, from 1,100 MW in 2009 to 5,340 MW in 2022. With 98 percent of the generation coming from clean sources (mainly hydropower and some wind energy), Ethiopia's near-complete reliance on green electricity is an outlier in the region. To mitigate its high dependence on large hydropower and to conserve scarce public resources, Ethiopia is now implementing a transition towards private sector driven development of solar, wind and geothermal power. Geothermal resources in Ethiopia offer an important opportunity to meet baseload electricity generation, diversify generation mix towards non-hydro sources, and develop a climate-aligned energy source in the country. Ethiopia is positioned to become a regional energy hub which would provide additional revenue to the sector and generate much needed foreign exchange.

The proposed Power Sector Reform Investment and Modernization (PRIME) program is consistent with Ethiopia's Country Partnership Framework (CPF) 2018-2022 and supports the World Bank's twin goals of poverty reduction and shared prosperity. The program will leverage resources from Green Climate Fund (GCF) to support GoE's endeavor to scale renewable-based electricity service, consistent with the Climate Resilient Green Economy (CRGE) and the Nationally Determined Contribution (NDC) for Ethiopia.

1.2. PRIME-1 Component

Component-1: Distribution MV Network Refurbishment and Modernization

This component will improve the quality of supply and help expand grid electricity access by strengthening and expanding the distribution network across seventy-two (72) towns. Distribution networks in these towns will be strengthened by reconfiguring and upgrading feeder conductors as well as transformers, and replacing poles and insulators as needed. Activities under this component include some towns in the northern parts of Ethiopia requiring post-conflict reconstruction. This component will also support the continued modernization of the Addis Ababa city distribution transformer (DT) metering system as a part of the ongoing EEU revenue protection program (RPP). Activities under this component will be implemented by third party EPC contractors, while consultancy firms will be hired to assist EEU in project management.

Component-2: Transmission Network Strengthening and Expansion

This component will construct ten new substations and related transmission lines to ensure adequate transmission capacity for the above 72 towns (and the surrounding areas) and construct four new lines with substations to improve the overall grid reliability and carrying capacity. In addition, this component will modernize the broader transmission network in the country. This

component will also support the modernization of the transmission grid by resolving the challenges of frequent system wide instability and outages due to miscoordination of primary, secondary, and tertiary frequency control systems and undamped oscillation issues. The project implantation involves EPC turn-key contract arrangements. EEP will need to engage consultants to review the feasibility studies, prepare ESIA and RAP and prepare advanced procurement processes including required technical specifications and bidding documents following the World Bank ESF and procurement procedures and guidelines. The scope will also cover the contract management, quality control, evaluation & monitoring and other relevant services. Project Preparation Advance (PPA) will be secured to ensure upfront engagement of consultants to expedite project preparation and implementation.

Component-3: Upstream Geothermal RE Parks Preparation

This component will finance drilling and resource identification at additional locations beyond the Aluto Langagno area (covered under GSDP) in preparation for private sector-led development of a 100MW geothermal power generation program. EEP will utilize existing two drilling rigs purchased under GSDP to carry-out exploratory drillings at new geothermal sites. This component will also support EEP, and potentially the Ministry of Mines, to carry out technical studies and capacity building activities to scale geothermal and other renewable energy. The indicative activities include (i) preparation of tendering documents for bidding out geothermal sites; (ii) geothermal surface studies for additional exploratory drillings in the future, (iii) strengthening the management of geothermal resource data, (iv) grid analysis for the integration of geothermal and variable renewable energy (VRE).

Component-4: Technical Assistance

This component will provide technical assistance and institutional capacity strengthening support to enable PEA to effectively discharge its mandates and achieve its medium-term strategic plan. This will include analytical outputs, trainings, tools, and other services to address gaps in regulatory capacity for meeting its most important reform-related mandates. Such mandates include review, approval, and enforcement of multi-year tariff trajectory, intermediate tariff adjustments, licenses for various activities, PPAs with IPPs, utility least cost expansion and investment plans, technical standards (including grid code), performance standards, consumer service standards, structural transition to a competitive market through single-buyer and subsequently multi-buyer-multi-seller models etc. This component will also support the GoE's efforts to strengthen independence and institutional governance of the PEA. A study to assess gaps and design a program for institutional capacity strengthening is being initiated using Project Preparation Advance.

1.3. Purpose of the TOR

Ethiopian Electric Power is agreed to hire a consulting firm for ***Component-2: Transmission Network Strengthening and Expansion*** activities to conduct and update Environmental and Social Impact Assessments for the projects, where their projects sites are identified.

The main purpose of this TOR is to provide an overview of the methodology to be used as well as key activities involved in conducting the ESIA. This term of reference was developed to be used as a general guideline for the following major activities.

- ✓ Conduct Environmental and Social Impact Assessment (ESIA), which is intended to address all environmental and social issues that are likely to arise during the pre-construction, construction, operation, and decommissioning phases while taking into account national laws and regulations as well as the World Bank Environment and Social Standards and Guidelines. Gap analysis between Ethiopian laws and the World Bank Framework to close the gap.

The consultant is in charge of conducting and producing ESIA report addressing the comments/feedback and prepare the paperwork for approval by the World Bank (WB) and the Environmental Protection Authority (EPA).

2. OBJECTIVES OF THE CONSULTANCY SERVICE

The consultancy service is required to prepare ESIA for ***Yirgalem II – Bensa Daye / 132kV, Jimma II – Limu Genet 132kV,*** and ***Bale Robe 132kV*** power transmission projects that include substations with their associated transmission lines. The main objectives of the consultancy services are to:

1) Address all environmental and social issues that are likely to arise during the pre-construction, construction, operation, and decommissioning phases while taking into account national laws and regulations as well as the World Bank's Environmental and Social Framework (ESF), the relevant Environmental and Social Standards (ESSs) and gap analysis between Ethiopian laws and Environmental and Social Framework (ESF) to close the gap.
2) Identify baseline data on the physical and biological environment, as well as the social, gender issues, cultural including if there are any Archaeological Sites (AS), demographic, and economic characteristics of the population in and around the transmission line corridor and substation area.
3) Identified potential environmental and socio-economic impacts associated with transmission lines and substation areas during pre-construction, construction, operation, and decommissioning phases and to make sure these impacts do not outweigh the expected positive environmental benefits.

4) Conduct participatory consultation and engagements with different level of stakeholders.

3. PROJECT DESCRIPTION

The program's scope includes the construction of new substations at Bensa Daye, Limu Genet, and Bale Robe towns as well as the associated 132kV transmission lines. The projects included in this assignment are taken form the following main components of the specific program in Component-2: Transmission Network Strengthening and Expansion:

3.1. Yirgalem II-Bensa Daye 132kV:

Bensa Daye 132 KV Power Transmission Project is located in Sidama zone Bensa woreda. Daye is a town in southern part of Ethiopia Located in the Sidama Regional State, this town has a latitude and longitude of 06°31'17.26" N 380° 49'42.78" E

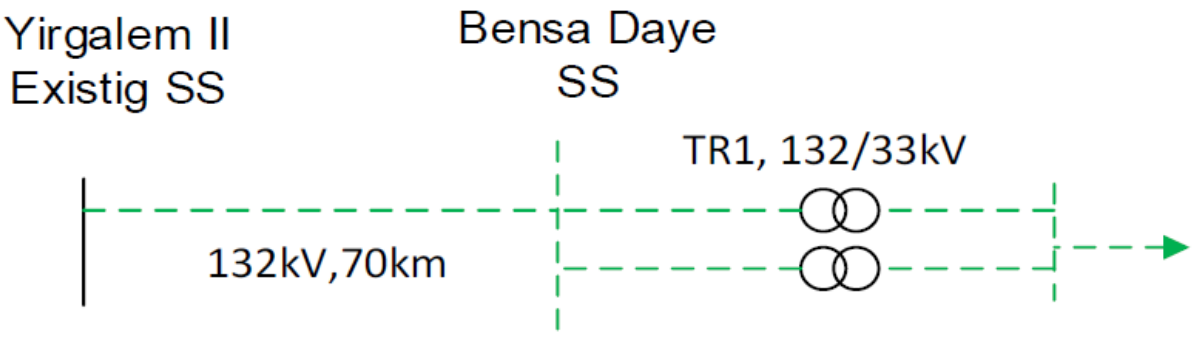

Figure 1: Yirgalem II - Bensa Daye 132kV SLD

For Bensa Daye Power Transmission project the scope of the substation is to build one new 132 kV substation at Bensa Daye town by stretching around 36.54km single circuit 132 KV transmission line from existing Yirgalem II 400 kV substation.

3.2. Jimma II-Limu Genet 132kV:

The proposed Limu 132/33 kV Substation is located in Oromiya Region at Weleke kebele of Limu Town, which is Located at latitude and longitude of 8.1257980N, 36.9650290E.

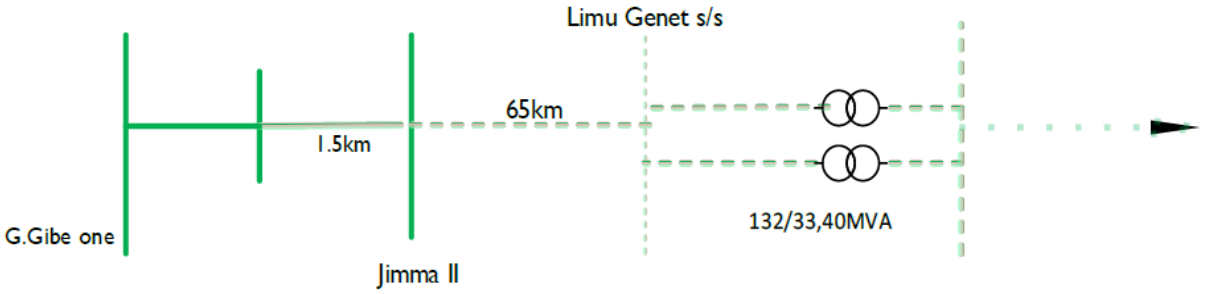

Figure 2: Jimma II-Limu Genet 132kV SLD

The Scope of the project is the construction of a new 132/33 kV substation at Limu Genet town by stretching around 65 km 132 kV single circuit transmission line from the existing Jima II 230/132/15 kV substation.

3.3. Bale Robe 132kV:

Bale Robe 132 KV Power Transmission Project is located in Bale Zone. Bale Robe is a town in south Eastern part of Ethiopia Located in Oromia Regional State, this town is located at a latitude and longitude of 70 7'N, 400 0'E with an elevation of 2492 m a.s.l.

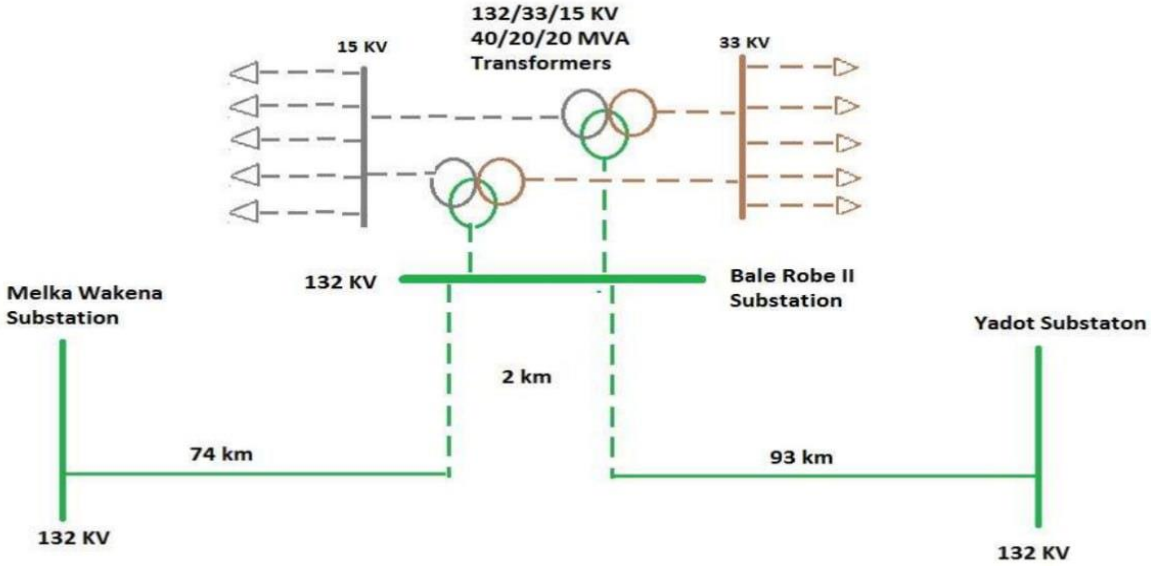

Figure 3: Bale Robe 132kV SLD

For Bale Robe Power Transmission project, the scope of the substation is to build one new 132kV substation at Bale Robe town by stretching around 2 km double circuit 132KV transmission line from existing Melka Wakena-Yadot 132kV line in LiLo arrangement

4. SCOPE OF WORK AND EXPECTED OUTPUT

The scope of the required consultancy service is to conduct an ESIA study in order to make the project environmentally and socially acceptable. There is a draft ESIA for Bensa Daye and Bale-Robe which are prepared by EEP and will be consumed for the preparation of this version of ESIA. It is the responsibility of the consultant to ensure the project complies with the country's legal guidelines and the World Bank environmental and social standards policies and requirements; identifying gaps in compliance, if any.

4.1. GENERAL

In general, the Consultant will perform the following key tasks as part of the Environmental and Social Impact Assessment (ESIA) study of the PRIME-1 Subproject:

1. Describe the Subproject including its main components, ancillary components/facilities, resources input, and outputs/produces.
2. Establish baseline environmental and social settings of the Subproject investment influence area.
3. Establish legal and institutional frameworks under which the Subproject is implemented and operated.
4. Identify beneficial and adverse environmental and social risks and impacts of the Subproject during preparation, implementation and operation periods.
5. Propose suitable, practical, and site-specific enhancement and mitigation measures to avoid, reduce, mitigate, and compensate/offset the identified impacts with operational details.
6. Conduct meaningful stakeholders' consultations and analysis to capture the Subproject affected people and parties' aspirations, concerns, and recommendations towards the planned interventions.
7. Carryout alternative analysis and compare various Subproject planning and design options in terms of their environmental and social consequences.
8. Develop environmental and social management and monitoring plans with institutional arrangement, human resources, and budget requirement.
9. Develop specific environmental and social requirements and procedures to be included in contractor's contract documents.

Further, the details of the various activities and outputs of the ESIA are described in the below sections.

4.2. INTRODUCTION

At the onset of the environmental and social impact assessment study, the following key aspects of the PRIME-1 Subproject should be defined and described in detail.

- The Project (the *PRIME-1*) background/context
- The specific Subproject background/context
- Rationale for the Subproject
- The objectives of the ESIA
- The scope of the ESIA
- Approach/methodology of the ESIA
- The structure of the ESIA report.

4.3. LEGAL AND INSTITUTIONAL FRAMEWORKS

A detailed review of relevant national, regional, international and World Bank regulatory frameworks shall be made to establish the setting against which the Subproject will be implemented. The review shall include (but not limited to):

- Applicable national policies and strategies for energy, environmental, and social management including (but not limited to):
  - ✓ *The Climate Resilient Green Economy (CRGE)*
  - ✓ *The Environmental Policy of Ethiopia*
  - ✓ *The Energy Policy of Ethiopia*
  - ✓ *The National Electrification Program 2.0 (NEP 2.0)*
  - ✓ *The Ethiopian Electric Utility Strategic Plan*
- Applicable national legislations (proclamation, regulations, directives, guidelines) for energy, environmental and social management including (but not limited to):
  - ✓ *The Constitution of the FDRE (Proc. No. 1/1995)*
  - ✓ *The Water Resource Management Proclamation (Proc. No. 197-2000)*
  - ✓ *The Research and Conservation of Cultural Heritage Proclamation (Proc. No. No. 209-2000)*
  - ✓ *The Environmental Protection Organs Establishment Proclamation (Proc. No. 295-2002)*
  - ✓ *The Environmental Impact Assessment Proclamation (Proc. No. 299/2002)*
  - ✓ *The Environmental Pollution Control Proclamation (Proc. No. 300-2002)*
  - ✓ *The Solid Waste Management Proclamation (Proc. No. 513-2007)*

- ✓ *The Persons with Disability Proclamation (Proc. No. 568-2008)*
- ✓ *The Energy Proclamation (Proc. No. 810/2013)*
- ✓ *The Classification of Cultural Heritage Proclamation (Proc. No. No. 839-2014)*
- ✓ *The Federal Civil Servants Proclamation (Proc. No. 1064-2017)*
- ✓ *The Forest Development Conservation and Utilization Proclamation (Proc. No. 1065-2018)*
- ✓ *The PPP Proclamation (Proc. No. 1076-2018)*
- ✓ *The Hazardous Waste Management and Disposal Control Proclamation (Proc. No. 1090-2018)*
- ✓ *The Labor Proclamation (Proc. No. 1156/2019)*
- ✓ *The Expropriation of Land Holdings for Public Purposes, Payments of Compensation and Resettlement of Displaced People Proclamation (Proc. No. 1161/2019)*
- ✓ *The Ethiopia Electric Power Establishment Regulation (Reg. No. 302-2013)*
- ✓ *The Ethiopian Electric Utility Establishment Regulation (Reg. No. 303-2013)*
- ✓ *The Electrical and Electronic Waste Management and Disposal Regulation (Reg. No. 425/2018)*
- ✓ *The Expropriation and Valuation, Compensation and Resettlement Council of Ministers Regulation (Reg. No. 472/2020)*
- ✓ *The National Social Protection Policy*
- ✓ *The National Policy on Women*
- ✓ *The National Policy on Children*
- ✓ *The Gender Based Violence Proclamation No. 1097/2018*
- ✓ *Gender mainstreaming strategy and guideline: 2010*
- ✓ *National Ombudsman Proclamation (relevant for GRM)*
- ✓ *Laws on civil consultation and public participation proclamation*
- ✓ *The Environmental Impact Assessment Procedural Guidelines.*

- ➢ Applicable relevant regional and international conventions and protocols (ratified by Ethiopia)
- ➢ Applicable regional agreements, cooperative frameworks, guidelines, etc. including on energy sector and associated environmental and social management
- ➢ The World Bank's Environmental and Social Framework (ESF), the relevant Environmental and Social Standards (ESSs) could be:
  - ✓ *ESS1 Assessment and Management of Environmental and Social Risks and Impacts*
  - ✓ *ESS2 Labor and Working Conditions*
  - ✓ *ESS3 Resource Efficiency and Pollution Prevention and Management*
  - ✓ *ESS4 Community Health and Safety*
  - ✓ *ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement*
  - ✓ *ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources*

- ✓ *ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities*
- ✓ *ESS8 Cultural Heritage*
- ✓ *ESS10 Stakeholder Engagement and Information Disclosure*

- Applicable guidelines from the World Bank Group's Environmental, Health, and Safety (EHS) Guidelines including:
  - ✓ The General EHS Guidelines (environmental, occupational health and safety, community health and safety, and construction and decommissioning)
  - ✓ EHS Guidelines Electric Power Transmission and Distribution (2007), if applicable

In addition, the national, regional, and local institutional frameworks under which the Subproject will be implemented shall be identified and assessed as part of the ESIA. Relevant institutions, their mandates, institutional structure, and capacities shall be identified. The key institutions include:

- Ethiopia Electric Power (EEP)
- Ethiopia Electric Utility (EEU)
- Petroleum and Energy Authority (PEA)
  - ✓ Federal Environment Protection Authority (EPA)
  - ✓ Regional environmental agencies
  - ✓ EEP and EEU environmental units
  - ✓ Ministry of Water and Energy (MoWE)
  - ✓ Ministry of Labor and Skills
  - ✓ Ministry of Women and Social Affairs
  - ✓ Regional Labor and Social Affairs Bureaus.
- Regional and woreda land administration offices, city administrations
- Independent asset valuators

Other relevant organizations and institutions shall be identified, and their structures, relationships, roles, responsibilities, and capacities shall be assessed and described.

4.4. SUBPROJECT DESCRIPTION

The PRIME-1 Subproject shall be described comprehensively including the following, but not limited to:

- The PRIEM-1 Project
  - ✓ The Project development objectives
  - ✓ The Project components and subcomponents
  - ✓ The Project environmental and social risks ratings
  - ✓ The Project beneficiaries

- ✓ The Project implementation arrangement

➢ The specific Subproject

- ✓ The location of the Subproject (geographic and administrative locations), with location map(s)
- ✓ Specific site location
- ✓ Accessibility of the site
- ✓ The Subproject design and its main components
- ✓ Construction materials used for construction of various components of the Subproject including sources of the construction materials (market or own source)
- ✓ Machineries to be used during construction and operation of the Subproject
- ✓ Energy consumption by the Subproject
- ✓ Waste generated from the Subproject
- ✓ Human resources requirements during implementation and operation phases
- ✓ Subproject implementation activities (during pre-construction, construction, and operation/maintenance stages)
- ✓ Subproject implementation schedule.

The Subproject description shall form a basis for the ESIA including to establish environmental and social baseline conditions, identifying and prioritizing key environmental and social issues, and recommending measures to avoid, reduce, mitigate, and offset the identified impacts.

4.5. ENVIRONMENTAL AND SOCIAL BASELINE CONDITIONS

Environmental and social baseline conditions against which the Subproject will be implemented shall be described in detail. The basic environmental and social baseline conditions of the Subproject area of influence shall include:

- ➢ The physical environment (climate, topography, geology/geomorphology, soils, water resources, land use, land cover, etc.)
- ➢ The biological environment (flora, fauna, key biodiversity areas, natural, critical, and modified habitats)
- ➢ The socio-economic environment (demography, ethnic composition, traditionally underserved communities, social structures, religions, cultural heritages, settlement patterns/land uses, livelihood strategies, household income and employment, food security, access to social services and utilities, etc.).

The environmental and social baseline conditions shall be done through desk study and field surveys. Gaps and reliability of baseline data used for the description shall be identified and indicated in the assessment. Recommendations on baseline data that should be confirmed or validated shall be provided.

4.6. ENVIRONMENTAL AND SOCIAL RISKS & IMPACTS

i. The ESIA shall identify and evaluate significance of potential environmental and social risks and impacts that will result from implementation of the Subproject. The ESIA shall focus on environmental and social effects that are significant in their likelihood and consequences. Further, the impacts identified shall be both beneficial/positive and adverse/negative impacts. The nature of the impacts shall be described as direct/indirect/induced/cumulative, temporary/long-term, local/regional, and reversible/irreversible and the impact of the substation and transmission line shall indicate separately. The Sub-project adverse Risk/impacts and mitigation measures shall be identified including (but not limited to) the following:

ESS1: Assessment and Management of Environmental and Social Risks and Impacts: Institutional capacity: ESCP requirements : impact on vulnerable people;

- **ESS2: Labor and Working condition**: Physical hazards including; rotating and moving equipment/machinery, noise and vibration, electrical hazard, eye hazards due to flying debris, hazards from hot works, traffic accidents from the site traffic and offsite movements of Sub-project vehicles/trucks, work-at-height, excavation hazards, ergonomics, repetitive motion, manual handling, working environment temperature and illumination, poor housekeeping, slip, trip, fall; Chemical hazards including; poor air quality, fire and explosions, hazardous chemical; Biological hazards including; exposure to wastewater, transmittable diseases/infections; impact on child labor, forced labor, Special hazard environments such as confined space, lone and isolated worker
- **ESS3-Resource Efficiency and Pollution Prevention and Management**: Air emissions/fugitive dust and ambient air quality impacts; impact of loss of soil and land degradation; impact on water quality; noise and vibration impacts; impacts of waste generation and disposal; polychlorinated biphenyls (PCBs) and SF6 impacts; impact of hazardous waste; impact due to non-hazardous waste, electrocution; health effects of electromagnetic fields (EMF); visual impacts;
- **ESS4-Community Health and Safety**: Water quality and availability, structural safety of Sub-project interventions; fire risk, traffic risk, risk from hazardous materials/wastes during transport and disposal; transmittable disease and public health impact
- **ESS5: Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement:** forced evictions and access restrictions; land acquisition; economic losses.
- **ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources:** impact due to clearing of vegetation cover and disturbance of habitat; impact of biodiversity loss; bird strikes/collisions and electrocution and social conflicts/dissatisfaction on services; conflict between local and migrant workers.
- **ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities**:

- **ESS8 Cultural Heritage**: Impact on cultural heritages

ESS10 Stakeholder Engagement and Information Disclosure: Risk and impacts associated with impact project-affected parties provide information on such risks and impacts and consult with project-affected parties as to how these risks and impacts will be mitigated.***ii. Risks related to development and operation of ancillary facilities (if any).***

- ✓ The risks/impacts shall be segregated by Subproject phases, i.e., (i) pre-construction, (ii) construction, (iii) operation and maintenance, and (iv) decommissioning.
- ✓ In addition to the direct and/or indirect impacts, the cumulative impacts (aggregate, incremental, and synergistic impacts) of Subproject implementation in the Subproject area of influence shall be comprehensively identified. The cumulative Subproject impacts shall be distinguished between their national, regional, and local effects.
- ✓ The environmental and social impacts shall consider identified challenges during Subproject planning, design, and implementation.
- ✓ The identified environmental and social impacts shall be prioritized based on their risk significance, magnitude, spatial and temporal extent.

iii. Cumulative Impact assessment

- ✓ Describe the subprojects sites, its siting, construction schedule, operational features and other projects and activities that may give rise to cumulative effects. The consultant will use all the available information including consultation with relevant authorities, ground information. The cumulative impact assessment will need to sequence planned developments of the project, and ancillary and local infrastructure. The consultants will need to propose geographic and temporal boundaries for the CIA based on the screening of potential impacts on key environmental components. The geographic context should include administrative, watershed and transboundary context or any other suitable context.
- ✓ The consultant is expected to identify key-related contributions to cumulative effects on selected resources of concern, such as biodiversity, livelihood of local communities, land use, fragmentation of habitats (add other from project context); Assess the level of cumulative effects; determine the significance of cumulative effects; provide recommendations: Analyze reasonable, feasible options for mitigating or avoiding contribution to any significant cumulative effects, at the project level and at the national level beyond the scope of the PRIME project.

4.7. Environmental and Social Mitigation Measures

Potential environmental and social risks/impacts that will result from Subproject implementation and operation shall be provided with recommendations on impacts enhancement or mitigation measures. The recommended measures shall be based on the risk mitigation hierarchy of ***avoidance, reduction, mitigation, and compensation/offsetting***. The proposed

mitigation measures shall bring the adverse impacts to the levels required by national standards and guidelines, the World Bank environmental and social framework and EHS guidelines, and good international industrial practice. The recommended mitigation measures shall also be commensurate with the level or significance of the adverse impacts. The mitigation measures should have operational details to enable their implementation. The mitigation measures shall be presented as environmental and social requirements or clauses to be included in contractors' works contract documents.

4.8. ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLANS

The ESIA should develop an environmental and social management plan outlining procedures and institutional responsibilities to manage the identified impacts. The environmental and social management plan shall include:

- Potential environmental and social benefits and impacts resulting from Subproject implementation (identified in the earlier exercise)
- Type, extent, and significance of the benefits and impacts
- Recommended enhancement measures for the beneficial/positive impacts
- Recommended mitigation measures for the adverse impacts to enable the sustainable implementation and operation of the Subproject
- Location of the mitigation measures within the Subproject setup
- Frequency of mitigation or measures implementation timeframe
- Success indicators for the mitigation measures
- Institutional responsibility for implementation of the enhancement or mitigation measures
- Capacity building recommendations for the institutions
- Estimate of measures implementation budget.

An environmental and social monitoring plan for Subproject implementation and operation shall be recommended in the ESIA. Main components of the monitoring plan are:

- Potential environmental and social benefits and impacts resulting from Subproject implementation (identified in the earlier exercise)
- Recommended enhancement and mitigation measures
- Key Subproject parameters or aspects to monitor
- Specific and measurable indicators
- Monitoring location, if applicable
- Measurement methods and/or equipment
- Frequency of monitoring
- Responsible institutions/parties for monitoring
- Monitoring budget.

4.9. CAPACITY DEVELOPMENT AND TRAINING

For effective implementation of the environmental and social management and monitoring plans, the existing institutional capacity of the concerned parties shall be assessed and measures to strengthen their capacities (such as training) shall be recommended and capacity development and training budget

4.10. IDENTIFYING AND ANALYSIS OF ALTERNATIVES

Systematically compares feasible alternatives to the proposed project site, technology, design, and operation—including the "without project" situation—in terms of their potential environmental and social impacts.

- Assesses the alternatives' feasibility of mitigating the environmental and social impacts; the capital and recurrent costs of alternative mitigation measures, and their suitability under local conditions; and the institutional, training, and monitoring requirements for the alternative mitigation measures.
- For each of the alternatives, quantifies the environmental and social impacts to the extent possible, and attaches economic values where feasible.
- The ESIA shall identify (along with the Subproject design team) various Subproject implementation alternatives including:
- The 'no-action' option which considers maintaining the current status quo in the Subproject area of influence
- The 'proposed Subproject' option including all of its technologies, facilities, and activities
- 'Other options' to be identified as part of the ESIA which are deemed to achieve the overall objectives of the Subproject while using different technology, methodology, and facilities.

A multi-criteria approach shall be used for analysis of the identified Subproject alternatives.

Design Measures: Sets out the basis for selecting the particular project design proposed and specifies the applicable EHSGs or if the ESHGs are determined to be inapplicable, justifies recommended emission levels and approaches to pollution prevention and abatement that are consistent with GIIP.

4.11. STAKEHOLDER IDENTIFICATION, CONSULTATIONS, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM

Stakeholder identification and analysis shall be done as part of the environmental and social impact assessment with the objective of involving the stakeholders in the decision-making process. The main tasks include:

- Identify Subproject stakeholders including government bodies/authorities, beneficiary communities, indigenous people, community leaders, civil society organizations, non-governmental organizations, women groups, youth groups, academia, etc.
- Disclose Subproject information to the stakeholders
- Consult on stakeholders' understanding, views, aspirations, and recommendations on the Subproject
- Recommend ways to integrate the findings of the stakeholder engagement into the Subproject plan, design, and implementation.

Subproject stakeholders may have grievances during implementation and operation stages and thus stakeholders should be given a means to voice their grievances and obtain redress. The ESIA shall device a grievance redress mechanism appropriate to the Subproject and local communities.

4.12. CONCLUSIONS AND RECOMMENDATIONS

Conclusions shall be drawn from the key findings of the ESIA. Further, the ESIA shall provide recommendations based on the findings of the assessment. The recommendations shall, among other points, include:

- Promoting integration and collaboration on environmental and social management by the various stakeholders participating during the Subproject implementation and operation;
- Strengthening institutions responsible for implementation and management of environmental and social issues;
- Capacity building needs for institutions responsible for environmental and social management;
- Dissemination and disclosure of environmental and social information;
- Environmental and social requirements and management measures to be included in the works procurement and contract documents;
- Environmental and Social mitigation measures shall be presented as environmental and social requirements or clauses to be included in contractors' works contract documents;
- Recommendations on other key environmental and social management issues.

4.13. APPROVAL

The Consultant must submit the final ESIA report for each project Bensa Daye, Bale Robe and Limu Genet, independently to be disclosed separately. Before the ESIA documents are approved by EPA and the Bank, the consultant is accountable for carrying out any changes that the client, authorities, may request, and they must keep working until there are no bank and EPA objections.

5. APPROACHES AND METHODOLOGIES

The approach and methodology for the ESIA follows the established pattern for infrastructure project including high voltage transmission and substation that should meets the requirements of Ethiopia Petroleum & Energy Authority (2005) on ground clearances of overhead electric transmission lines, EPA's Environmental guideline (EPA, 2003) and World Bank Environmental and Social Framework and ESSs.

The following section provides the highlight of the approach and methodology adopted for the ESIA of the proposed Power Transmission and substation Project.

5.1. *DESK REVIEW:*

The consultant must hold a briefing meeting with client in the first day after signing the contract. Subsequently, the consultant shall prepare assessment tools, formats, checklists for primary data collections instruments at all levels (district, regional and federal level). Besides, the consultant will also systematically review all relevant secondary data (e.g., The GoE financing agreement provisions, pertinent documents related to Environmental and social issues, Legal frameworks, project Appraisal Reports, guidelines, project E&S safeguards instruments (ESIA, WB environmental and social requirements and pertinent documents).

5.2. SITE VISIT:

In consideration of the nature and the location of the potential future conditions and consequences, the Study area will be identifying. Therefore, the Project area in which implementation will definitely bring about measurable and sometimes significant direct changes to the physical environment and ecology, as well as the social and economic conditions. Therefore, the transmission corridor (ROW), substation, access roads, waste disposal sites, campsites, borrow and quarry sites will be the principal areas of focus for fieldwork and data collection.

1) **Collection of Available Information:** to identify potential sources of the impact of the project on the environment and the consultants collected published documents, regulations, and census reports. Information on existing environmental conditions, necessary to provide the background for impact identification and assessment will obtain from the published sources.
2) **Maps and Images:** the consultant should use the topographic maps, Satellite images and area map used to identify and delineate villages, resources and facilities that could potentially be affected in the proposed scheme and to assess the land use, vegetation cover, infrastructure, settlements, and other socio-economic activities within the TL corridor.
3) **Field Investigation:** the field investigation on physical resources, ecological resources, socio-economic aspects, health, cultural and other values in the project area will be collect.

4) **Public Consultations:** The consultant should conduct the consultations with various community members along the proposed Transmission Line Corridor and Substation area, as well as different stakeholders and local authorities in the project-affected area.
5) **Description of the Environment and Social Baseline:** Information on the existing natural and socio-economic resources is of fundamental importance for evaluation of environmental impacts. So the consultant should collect the baseline data on the physical, biological and social, cultural and socio-economic setting of the project will be assemble, evaluate and present.
6) **Identification of Environmental and Social Impacts:** Key potentially beneficial as well as adverse impacts on the physical, biological and socio-economic environment associated with the construction and operation phases of the project will be identify and quantify where possible.
7) **Environmental and Social Mitigation and Benefit Enhancement Measures:** Feasible and cost-effective mitigation and benefit enhancement measures that may avoid or reduce potentially significant adverse environmental impacts to acceptable levels shall be identified and recommended.

5.3. *PREPARATION OF ESIA REPORT:*

The final step is the preparation of the ESIA reports. These reports will concentrate on key issues and impacts, which are importance in terms of affecting the overall environmental performance of the Project.

6. IMPLEMENTATION ARRANGEMENT

The Consultant will work closely with the Environmental, Health and Safety Department. The Consultant's team leader will be the principal contact. The Consultant will be responsible for all aspects of performance of services set forth in the TOR.

The Client will be responsible for providing the information and supporting arrangement for the necessary field investigations and consultations. The Client will provide the following facilities and documents:

- ✓ *All the relevant documents, including the Draft ESIA and feasibility studies;*
- ✓ *The KML and/or GIS Information of the proposed route and substation location;*
- ✓ *Supporting letter for field work, and*

- ✓ *Access to relevant information to the extent of its availability.*

The Consultant shall hold periodic progress review meetings with the Client at least once in a month. Additional meetings shall be scheduled if necessary. The intent of these meetings will be for the Client to provide input and to discuss options for addressing the Client's comments. The Consultant shall fully cooperate with the Client in scheduling and attending such meetings as requested by the Client. The Client will be responsible to prepare meeting minutes during each of these meetings. Minutes will be distributed to participants for review and comment. The consultant is also required to make presentation to higher management of the Project implementing agencies and the Bank as and when necessary.

7. SCHEDULE AND WORK PLAN

The contract period is as given in Table-1 below that count after the authorized project commencement date. The consultant will work closely with EEP in this contract period and will submit the progress of activities as agreed.

The Final reports of the assignment must be submitted in its *completeness and final* form within the given project duration in Table-1 below. The report is assumed final when the client receives no objections from the Bank and clearance from EPA.

Table 1: Project Duration to the Submission Documents

S/N	Activity	Milestone
1	Submission of Inception Report from the signing of the contract	1 Week
2	Draft Environmental and Social Impact Assessment Report submission, from the signing of the contract	6 Weeks
3	Addressing comments on the draft ESIA by the Client, Bank & EPA, from the signing of the contract.	8 weeks
4	Revise and submit the final ESIA, from the singing of the contract	10 weeks
5	Approval and clearance on the Final ESIA from the Bank and EPA.	12 weeks

Both the consultant and EEP shall compare the actual project area conditions to what was anticipated in the ToR and make recommendations for any changes to the study schedule and

other actions deemed crucial to the project's success. EEP and the consultant must come to an agreement on this.

The consultant should outline the plan for the implementation of the main activities/tasks of the assignment, their content and duration, phasing and interrelations, milestones (including interim approvals by the Client), and tentative delivery dates of the reports. The proposed work plan should be consistent with the technical approach and methodology, showing your understanding of the ToR and ability to translate them into a feasible working plan.

A list of the final documents (including reports) to be delivered as final output(s) should be included here. The work plan shall be submitted in Gant-chart that illustrates all the project activities, as follows:

- ✓ *List the deliverables with the breakdown for activities required to produce them and other benchmarks such as the Client's approvals. For phased assignments, indicate the activities, delivery of reports, and benchmarks separately for each phase.*
- ✓ *Duration of activities shall be indicated in a form of a bar chart.*
- ✓ *Include a legend, if necessary, to help read the chart.*

8. DELIVERABLES

EEP consider of utmost importance the timely elaboration and submission of complete spatial information of the project site (Using ArcGIS) and pertinent reports during the course of the study.

8.1. Spatial Information

EEP has identified the transmission line route and the substation site location during feasibility study, where the required GIS data to be provided later after contract signing. In consideration of the nature and the location of the potential future conditions and consequences, the spatial information shall be identified and submitted with ArcGIS format.

Therefore, the transmission corridor (ROW), substation, access roads, waste disposal sites, campsites, borrow and quarry sites that will be the principal areas of the project shall be clearly delineated on ArcGIS map with the appropriate attribute table. This GIS information will be the basic source of information during ESIA study and future Right-of-Way management. The consultant must provide for the client with the following spatial information:

The consultant should submit the relevant Geological Map, Topographic maps, Historical and Archeological Map, Protected area and Biodiversity Map that are used to identify and delineate villages, resources and facilities that could potentially be affected in the proposed scheme and to assess the land use, vegetation cover, infrastructure, settlements, and other socio-economic activities within the TL corridor and around the substation site.

8.2. Reports

The reports are to be written in ***English*** language and should explain the activities performed in detail up to the satisfaction of the client. The ***Executive Summary*** shall be submitted in ***English and Local Language*** of the Project Areas. Any additional documents required to be prepared in local language of the project area shall be translated with legal translator and be part of this report. The consultant must provide the client with the following reports:

A. ***Inception Report***: Each project's inception report will have two (2) printed copies and electronic copy of Inception Report shall be submitted, reflecting the agreed methodology, techniques, schedule, deliverables and an outline of the proposed contents of the assignment.

B. ***Draft Report:*** Each project will have two (2) printed copies are required with electronic copy to the client and forwarding to the bank. In a stakeholder workshop, the consultant must present the ESIA report and take feedback into account. Deliveries must be based on the client's priorities.

C. ***Final Report:*** Each project's final report will have five (5) printed copies in addition to electronic copy for the client and to send it to EPA and BANK. All issues brought up during stakeholder engagements, as well as the comments of the client and bank shall be covered in the final report.

D. ***Progress Report:*** The Consultant shall furnish the Client with a written Weekly Progress Report that summarizes all aspects of the completed monthly and cumulative work progress. The objectives of the Progress Report are to:

- ✓ Provide a reliable and readily accessible summary record of the project activities with daily activities performed by each individual at the site and progress of work during last week with verification of daily task in the site signed by the project's representative.
- ✓ Provide a detailed description of all work actually completed up to the date and revision to the project schedule required, which shall reflect changes in the critical path since the date of the last revision.
- ✓ Identify issues and problems requiring action by the Client or the Consultant, including issues of conflicting priorities.
- ✓ Provide a forecast of the work to be accomplished in the next month and information to help substantiate the Consultant's pay request.

9. REPORTS

9.1. Submittal Protocol

No later than seven (07) days after the Commencement Date, the Consultant shall submit a submittal protocol for the Consulting Services. The submittal protocol shall identify the

submittal documents/reports to be prepared by the Consultant including but not limited to detailed listing of the content, the expected dates of the submittals, number of copies, and distribution of the submittals by the Consultant based on distribution information provided by the Client.

The Consultant has obligation to provide submittals for review consistent with the submittal dates. The Consultant acknowledges that the Client's review will often involve input from, or consultation with, a number of individuals. Therefore, should submittal dates to the Client be delayed, the Consultant shall provide prompt notice to the Client of the delay. In no case shall this notice be given less than five (05) calendar days prior to the scheduled submittal date for that submittal. The submittals shall identify any proposed change to the requirements, or the design concept, project delivery approach, or the project schedule provided in the Consultant's proposal, accompanied by the rationale behind the proposed change. No changes shall be implemented without the Client's acceptance. Such acceptance shall not, however, relieve the Consultant of any of its obligations under the contract.

9.2. Report Outline

The reports outline should provide information that will enable the Bank and clients to identify, evaluate and manage environmental and social, health and safety risks relating to the projects. The reports should be with the outline acceptable to local competent authorities (EPA), international environmental and social standards, and development partners, mainly the financer of this project.

All reports and documents must be written in English. Executive summaries, a list of the projects affected and their socioeconomic profiles, maps, meeting minutes, and some relevant photos must be included in all reports (aside from the progress report).

9.3. Reporting Format

Reports for each project must be submitted in one main volume (A4 format) and with the appropriate number of appendices, drawings, photographs, and other exhibits in additional volumes, in either A4 or A3 format as needed. Any modifications to the reporting schedule or contents must be brought up and approved in consultation with EEP.

The Submittal form for each document is electronical (both PDF as well as editable version) and in hard copies as may be required by the approving Authorities in Ethiopia (EPA), with a cover letter to the Client. The Client is responsible for distribution of submittals to reviewers. Electronic submittals shall be in the original file format. The Consultant is responsible for the accuracy and completeness of the information submitted.

9.4. Client Review of Reports

The Client will review submittals for consistency with the methodology concept presented in the Consultant's proposal. The primary purpose of the Client's review is to satisfy itself that the submittals generally conform to the intent of the contract. The Client's review shall not relieve the Consultant of the sole risk and responsibility for all defects, errors or omissions, or of sole responsibility for meeting all requirements of the contract.

The Consultant shall make submittals far enough in advance of subsequent activities to allow time for reviews, consultations with other entities, for securing necessary acceptance, for possible revisions and re-submittals. The Client intends to process the submittals as quickly as practical.

9.5. Finalization of the Reports

Following approval of the final report by the Bank and clearance from EPA, the Consultant shall make necessary revisions and finalize the report for public disclosure. The approved report prepared for disclosure shall be submitted in five (5) hard copies and five (5) electronic copies to be distributed to the project stakeholders. The document shall follow ISO 9001:2015 document control structure.

10. QUALIFICATION OF CONSULTANT

10.1. Consultant's Organization and Experience

Submit a brief description of the Consultant's organization and an outline of the recent experience of the Consultant that is most relevant to the assignment. In the case of a joint venture, information on similar assignments shall be provided for each partner. For each assignment, the outline should indicate the names of the Consultant's Key Experts and Sub-consultants who participated, the duration of the assignment, the contract amount (total and, if it was done in a form of a joint venture or a sub-consultancy, the amount paid to the Consultant), and the Consultant's role/involvement.

10.2. Qualification of Key-Staff

The Consultant shall assemble a team of both key and non-key experts as per the Table-2 below. List of Experts (LOE) and estimates are indicative, and Consultants are free to propose

their own LOE to match their methodology and staffing plans, noting any deviations from the notional LOE as well as the reasons behind them. Additional staff and staffing requirements may be proposed by the Consultant as necessary and based on the Consultant's proposed methodology and approach that will achieve the objectives of the assignment. Consultant shall provide and maintain all Key Personnel. Once the LOE is approved by the Client, any changes are subject to prior approvals by the Project implementing agencies in accordance with the terms of the contract. International staff with the required expertise and based internationally can also be proposed if they are able to demonstrate required country expertise.

The consultant will be expected to work closely with the client's staff, in particular the EEP Environmental and Social Affairs office experts and other third parties relevant to the required services, particularly relevant representatives from the Regional and local Governments where those projects are going to be built. Therefore, the consultant will also be expected to have good communication, writing, and analytical skills as well as have a good command of languages, namely English.

Backstopping Staff: The Consultant shall ensure and demonstrate in the proposal that the firm has the expertise not explicitly covered in the above list but needed for the assignment. In addition to the key staff positions above, the consultant shall include in its proposal the CVs of a pool of experts that would be assigned to the study as and when required, including a contract management staff member (the pool of experts will not be included in the evaluation of key staff positions but are required to demonstrate the firms access to a pool of experts).

The required key staff specific Educational Qualification and Experience shall be as follows:

Table 2: Key Staff Educational Qualification and Experiences

Role	Qty	Required Qualification
Project Manger	1	✓ The project manager shall have Master's Degree in Environment Science/ Environmental Engineering / Environmental Management/ Natural Resource Management / Ecology with 8 years of professional experience in the related field. ✓ The expert is required to have specific experience in preparation of ESIA in Transmission Line projects as per national requirements, and have the knowledge and working experience in preparation of ESIA and RAP according to the World Bank's/any other international financer's Environmental and Social policies and guidelines and Resettlement Policy.
Senior Environmentalist	2	✓ Minimum of BSc degree in Environmental science/ Environmental Engineering and Related fields/ with at least 8 years of general experience. ✓ At least 5 years of similar experience in preparing an ESIA preferably on energy projects.

Senior Sociologist/ Anthropologist	2	✓ Minimum of BA degree or equivalent in Rural Development/ Sociology/Anthropology with at least 8 years of general experience, ✓ At least 5 years of similar experience in preparing an ESIA preferably on energy projects.
Socio-economist	1	✓ Minimum of BA degree or equivalent in economics/ sociology/ development studies with at least 5 years professional experience.
Forestry / Ecologist	1	✓ Minimum of BSc degree or equivalent in forestry/ plant science with at least 5 years professional experience.
Zoologist	1	✓ Minimum of BSc degree or equivalent in botanist/ Zoology/ biology/, with at least 5 years professional experience.
Data Management Specialist	1	✓ Minimum of the BSc degree or equivalent in Data Management / Statistic / Computer science with at least 5 years of professional experience.
GIS Expert/Land use expert	1	✓ Minimum of BSc degree or equivalent in GIS/ Studies or other relevant field with at least 5 years of professional experience.
Surveyor	1	✓ BSc degree or equivalent in surveying with at least 5 years professional experience or Diploma and other equivalent in surveying with at least 8 years professional experience.

Team compositions, assignment, and key expert's inputs shall be submitted using the ***Appendix: Technical Proposal Forms Submitted*** with the RFP. Attach the CVs (updated and signed by the respective Key Experts) demonstrating the qualifications of Key Experts using the ***Appendix: CV Submission Form*** in the RFP.

11. CONSULTANT'S PROPOSAL

The consultant shall submit the following information to demonstrate the capability to perform the assignment successfully.

1. **Work Approach/Methodology:** The scope of work should include a description of the specific activities that will be performed to accomplish the required tasks identified in this Terms of Reference. This should include any proposed site visits/surveys, documents to be reviewed, interviews, etc. If the Consultant feels that additional tasks or components within the scope of work are required or warranted, these should be stated and delineated as "Optional Tasks".
2. **Organization *and Staffing:*** The consultant should describe the structure and composition of its team, including the list of the Key Experts, Non-Key Experts and relevant technical and administrative support staff.
3. **Consultant's Team and Qualifications:** This should include the name of the principal staff members (indicated above). Qualifications of staff should include relevant technical

capabilities, previous relevant project experience, specific in-country and regional experience and knowledge, and specific language skills.

4. **Schedule**: A proposed schedule for performance of the assignment must be presented with breakdown of specific tasks and activities. The schedule must indicate the proposed start and completion dates for each activity listed in the "Scope of Work and Expected Output" section of this Terms of Reference and any important or specific Subproject milestones (e.g., report submittal, etc.)
5. ***Financial Proposal***: A total cost of the consultancy service must be provided. Breakdown of the estimated costs by tasks/activities must also be presented (e.g., tabular format) and should include Direct Labor Costs (number of days per staff and their associated unit costs) and reimbursable expenses (e.g., travel, per diem, etc.). Any assumptions related to the estimated costs must be clearly stated. If any additional *Optional Tasks* are recommended, then a separate cost estimate must be provided.

Annex-A: INDICATIVE OUTLINE FOR ESIA REPORT

The EEP ESIA team is required at least to follow the below different Bank's outline of ESIA to fulfill the requirements of the Banks

0. EXECUTIVE SUMMARY/INTRODUCTION

0.1. Project Background/Context
0.2. Rationale of the Subproject
0.3. Objectives of the ESIA
0.4. Scope of the ESIA
0.5. Approach/Methodology of the ESIA
0.6. Structure of the ESIA

1. ***LEGAL AND INSTITUTIONAL FRAMEWORKS***
   1.1. Policies and Strategies
   1.2. Legal Framework
   1.3. International Conventions and Protocols
   1.4. Regional Agreement and Cooperative Frameworks
   1.5. World Bank Environmental and Social Framework (ESF)
   1.6. Institutional Framework, Structure and Capacity
2. ***SUBPROJECT DESCRIPTION***
   2.1. Subproject Features and Components
   2.2. Equipment Use during Construction
   2.3. Construction Materials Need
   2.4. Energy and Water Use during Construction

g. SEA/SH action plan
h. Security risk management plan
i. Stakeholder consultation and engagement

Annex 5: Environmental and Social Clauses to be Included in Procurement and Contract Documents

Annex 6: List of Associated Reports