Ethiopian Electric Power

Project Procurement Support,

Project Management and

Supervision Consultancy

Terms of Reference (ToR)

Under PRIME-1

March 2025

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1. Background

The Federal Democratic Republic of Ethiopia is set to become the borrower of the loan from the World Bank for the implementation of Power Sector Reform Investment and Modernization in Ethiopia (PRIME) program. Part of the proceeds will be used for the current consultancy service. This groundbreaking initiative is strategically designed to address and rectify the chronic issues with the power supply reliability in the Ethiopian context, particularly in areas where this reliability is consistently compromised within the broader Ethiopian network.

A comprehensive assessment conducted by the Ethiopian Electric Utility (EEU) has identified and prioritized 72 towns facing acute and persistent challenges in power supply reliability. These issues encompass frequent outages, voltage fluctuations, and capacity limitations, all of which have substantial socio-economic implications for the communities.

To address these pressing concerns, the PRIME program will undertake activities in multiphase Programmatic approach (MPA)

In tandem with the distribution system improvements, the Ethiopian Electric Power (EEP) will focus on enhancing high-voltage supply reliability. This entails fortifying the backbone of the power grid, which feeds the distribution networks within the identified towns. By improving the reliability of high-voltage transmission lines and substations, EEP aims to mitigate the cascading effects of power disruptions and reduce the frequency and severity of blackouts. This, in turn, will bolster the resilience of the entire power system, ensuring a more stable and dependable energy supply for both urban and rural areas.

In Ethiopia's ongoing efforts to modernize and fortify its power sector, EEU's and EEP's financial support from the World Bank under the PRIME program marks a significant milestone. The detailed approach outlined here represents a critical step toward achieving the overarching goal of providing sustainable and reliable electricity access to the most vulnerable and underserved communities in the country as well.

2. Previous Work Conducted

EEP has identified a total of 14 substation and transmission projects to advance the comprehensive strategy aimed at enhancing the power supply reliability across 72 towns. This includes construction of new substations, expansion and modernization of existing substations and construction of power transmission lines of different voltage. This strategic development will significantly contribute to the overall improvement of the region's power infrastructure of the regions under consideration.

To ensure the successful execution of these projects, EEP has already conducted feasibility studies, which have yielded insights and data crucial for the planning and execution phases. Furthermore EEP has prepared tender documents encompassing Tender design, Technical Specifications, Employers requirements and other requisite details for the installation and commissioning of transmission lines and substations, considering the highest industry standards and practices.

As the next crucial step in this ambitious venture, EEP is set to engage the services of a highly qualified and experienced consultant. The primary responsibility of this consultant will be to review, refine, and update the existing tender documents, ensuring they are comprehensive, competitive, and in full compliance with regulatory and industry standards. In Addition, the consultant will play a pivotal role in assisting EEP during the bid evaluation process, thereby facilitating the selection of the most suitable and proficient contractors for the construction of the identified substations and transmission lines. This contractor selection process will be instrumental in guaranteeing the successful and timely execution of these critical projects. Furthermore, the consultant will be responsible for the Project management and Supervision of construction activities form the initiation of the EPC contractor through implementation for the realization of the Substation with their associated transmission line to the project closing.

3. Relevant Information

a. Project Financing

The World Bank will support the project financing through IDA credit towards the project costs. The Government of Ethiopia will finance the administrative cost of the Project. EEP is the implementing agency of the project.

b. Project Area

The project covers all the regions of the country. The projects area location maps and general information are annexed.

4. Project Objective

The Power Transmission Project is designed to enhance the efficiency, reliability, and sustainability of the power transmission network through the following key objectives:-

a. **Capacity Expansion:** Increase the transmission capacity to meet growing energy demands, supporting economic development and ensuring a stable power supply
b. **Enhanced Reliability:** Improve the reliability of power transmission by upgrading the infrastructure, reducing downtime, and implementing advanced monitoring systems.
c. **Reduced Transmission Losses:** Minimize energy losses during transmission by reducing overloading of transmission lines and Installing network compensation devices.
d. **Improved Flexibility:** Enhance the flexibility of the power transmission network to accommodate fluctuations in demand and supply, improving overall system responsiveness.
e. **Mitigate Congestion:** Address transmission bottlenecks to alleviate congestion, ensuring a more balanced and efficient flow of electricity across the grid.
f. **Increased Grid Based Power Connection:** enhances energy reliability and efficiency, fostering optimal resource utilization and facilitating seamless integration of diverse power sources. This interconnected grid promotes resilience, supports electrification goals, and contributes to a sustainable and robust power infrastructure.

5. Objective of the assignment

The primary objective of this assignment is to provide comprehensive Project Procurement Support, Project Management, and Supervision Consultancy for the substations and transmission projects, ensuring compliance with international procurement standards and best practices. The consultant will undertake a thorough review and refinement process to enhance the quality, consistency, and transparency of the documents before they are published for tendering. Additionally, the consultant will support the entire project lifecycle, from procurement planning to contract administration and execution monitoring, to ensure successful project implementation.

a. Ensure Compliance with International Standards:

- Align all procurement documents with the World Bank's Procurement Regulations for Investment Project Financing (IPF) Borrowers (latest edition) and relevant international guidelines such as FIDIC.
- Integrate provisions from the Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants (July 1, 2016).
- Ensure conformity with the Financing Agreement requirements and mitigate legal and procedural risks.

b. Enhance Technical Accuracy and Quality:

- Conduct a thorough review of the technical specifications for 230 kV and 132 kV substations and associated transmission lines.
- Identify and rectify inconsistencies, ambiguities, and gaps in the existing tender documents.
- Ensure that the designs are optimized for efficiency, cost-effectiveness, and ease of implementation.

c. Standardize and Optimize Procurement Documents:

- Develop a comprehensive, standardized package of bidding documents that can be adapted for multiple procurement packages.
- Harmonize specifications, methodologies, and evaluation criteria to ensure consistency across all procurement activities.
- Establish a clear, logical structure for all documents to improve readability and ease of use by prospective bidders.

d. Improve Transparency and Fair Competition:

- Enhance the clarity of bidding requirements to foster fair and competitive bidding processes.
- Ensure evaluation criteria are objective, measurable, and transparent to minimize disputes and ambiguities.
- Integrate international best practices to attract reputable bidders and enhance project outcomes.

e. Strengthen Project Procurement and Contract Management:

- Provide procurement support, including bid evaluation assistance, contract negotiation guidance, and compliance monitoring.
- Ensure contract execution aligns with project timelines, cost estimates, and quality standards.
- Support the employer in addressing contractual disputes and risk mitigation strategies.

f. Mitigate Risks and Strengthen Project Execution:

- Identify potential procurement and contractual risks and propose mitigation strategies.
- Ensure that the tendering process is structured to avoid delays, cost overruns, and technical failures.
- Incorporate mechanisms for monitoring, reporting, and compliance enforcement to strengthen accountability.

Through these objectives, the consultant will contribute to a more efficient, transparent, and high-quality procurement process, ensuring the successful implementation and supervision of power transmission infrastructure projects in alignment with global best practices.

6. Scope of the Consultancy Service

The consultancy service encompasses comprehensive Project Procurement, Contract Administration, and Supervision to ensure the successful execution of the Power Transmission Project. The Consultant will provide expert support in tendering, procurement, contract management, and oversight from project inception to closure. The scope of services includes, but is not limited to, the following:-

6.1. Activity I: Tendering and Contract Award Support

6.1.1 Sub-Activity I: Preliminary Engineering Design and Tender Review

Under Sub-Activity I, the Consultant will undertake a comprehensive evaluation and enhancement of the engineering design and tender documents provided by Ethiopian Electric Power (EEP), addressing technical gaps and optimizing overall document integrity. The Consultant's comprehensive review will focus on ensuring that all documentation reflects the most current industry standards, complies with regulatory requirements, and incorporates lessons from past projects. Key responsibilities include but not limited to:

a. Comprehensive Review and Optimization of Tender Documents:

- Assess the completeness and clarity of the tender document to ensure that it effectively communicates all technical, financial, and legal requirements.
- Update sections of tender document including technical specifications, scope of works, contractual terms and cost estimates based on the latest standards and lessons learned.
- Confirm the consistency and alignment of the tender document with the overarching project objectives and financing requirements.

b. Evaluation of Timeliness, Relevance, and Accuracy:

- Assess whether the tender document and preliminary design reflect the latest technological advancements, regulatory changes, and industry trends.
- Ensure that all components of the engineering design (including equipment, materials, and construction methodologies) are current, appropriate, and reliable for the intended use in the project.

c. Review and Enhancement of Technical Specifications:

- Conduct a thorough update of the technical specifications to ensure they meet both quality standards and sustainability goals.
- Ensure that specifications are comprehensive, addressing all aspects of the transmission lines and substation construction, including electrical, mechanical, civil, and environmental considerations.

d. Legal, Regulatory, and Compliance Review:

- Undertake a detailed legal and compliance check to verify that the tender document aligns with national regulations, international standards, and funding agency requirements (e.g., World Bank, other financiers).
- Ensure the project complies with environmental regulations, health and safety laws, and local codes of practice.

e. Incorporation of Lessons Learned from Previous Projects:

- Leverage insights from similar power transmission projects, ensuring that previous challenges, failures, and best practices are integrated into the updated design and documentation.
- Incorporate lessons learned to mitigate risks and improve efficiency, focusing on project management, contract execution, and environmental mitigation strategies.

f. Review and Refinement of Project Schedule and Milestones:

- Evaluate the existing project schedule and timelines, and update them to reflect realistic and achievable milestones.
- Ensure that critical path analysis is conducted to identify potential risks and ensure that the timeline for delivery is reasonable given the project's scope and complexity.

g. Scope and Cost Review and Adjustment:

- Conduct a comprehensive review of the project scope to ensure it is appropriately defined and reflects the most efficient and effective solution for the transmission lines and substations.
- Update cost estimates based on updated designs, specifications, and market conditions.
- Ensure that cost estimations are fully aligned with the financial resources allocated for the project and consider any potential cost escalations.

h. Review of Prepared Specifications and Procurement Requirements:

- Examine the technical specifications developed by EEP, ensuring they adequately support the requirements of quality, durability, and operational performance over the life of the project.
- Provide recommendations for adjustments or enhancements in the specification, based on comparative studies of similar infrastructure projects.

i. Environmental, Social, and Occupational Health & Safety Compliance:

- Ensure that the updated tender document fully reflects compliance with Environmental and Social Management Plans (ESMP) and Occupational Health and Safety (OHS) regulations.
- Address the environmental mitigation measures and ensure that the tender documents incorporate sustainability criteria and social safeguards for local communities.
- Evaluate and incorporate the resettlement action plan (RAP) where required, ensuring land acquisition and social impact mitigation strategies are properly outlined in the contract documents.

j. Refinement of Bid Qualification and Evaluation Criteria:

- Develop and refine the qualification and evaluation criteria to ensure that bidders are assessed on their ability to meet both the technical and financial requirements of the project.
- Ensure that evaluation criteria are clear, comprehensive, and objective, considering previous performance, financial stability, technical expertise, and capacity to deliver large-scale infrastructure projects.

k. Launch of Updated Tender and Bid Process Management:

- Prepare for the public launch of the updated tender, ensuring that all stakeholders are notified and that the process is transparent and competitive.
- Provide continuous support during the bidding period, managing any technical clarifications requested by bidders and ensuring responses align with the original scope of work and specifications.

l. Assistance in Bid Evaluation Process:

- Support EEP in evaluating the bids received, ensuring adherence to the technical specifications and financial criteria outlined in the tender documents.
- Facilitate contract negotiations with the selected bidders to ensure the most favorable contractual terms, including performance guarantees and penalties for non-performance.

6.1.2 Sub-Activity II: Selection of Contractors and Contract Awards

In Sub-Activity II, the Consultant will provide comprehensive support to the Client throughout the entire contractor selection process, ensuring a transparent, competitive, and efficient procurement cycle. The Consultant will assist in managing the process from issuance of tender documents to contract award, guaranteeing compliance with applicable legal and regulatory frameworks, as well as alignment with project goals. The Consultant's involvement will ensure that the selected contractors possess the technical capability, financial stability, and experience necessary to execute the project successfully. Key tasks for this sub-activity include, but are not limited to:-

a. Issuance of Tender Documents and Management of Bidder Inquiries:

- Oversee the finalization and issuance of the tender documents, ensuring clarity, completeness, and alignment with the project's technical specifications, budget, and timeline.
- Provide clarifications and responses to bidders' inquiries, ensuring that all queries are addressed promptly and accurately, maintaining transparency in the bidding process.
- Ensure that any modifications or updates to the tender documents are properly communicated to all bidders, preserving fairness and equity throughout the process.

b. Support in Bidding Process and Bid Evaluation:

- Facilitate the bidding process, ensuring compliance with both the Client's procurement policies and international standards.
- Monitor bidder compliance with submission requirements, and provide support for the evaluation of bids, ensuring that each proposal is thoroughly assessed for its technical, financial, and operational feasibility.
- Organize and lead the bid evaluation panel to ensure a fair, unbiased assessment of bids. This includes the evaluation of technical qualifications, financial strength, and project delivery capability of the bidders.
- Ensure the evaluation process is fully documented, with a clear audit trail to support the award decision.
- Provide recommendations for shortlisting contractors based on evaluation results, ensuring that only those who meet the thorough project requirements are considered.

c. Project Implementation Schedule and Disbursement Planning

- Review and refine the project implementation schedule developed by the bidding contractors to ensure that it reflects realistic timelines for construction and commissioning.
- Assess the feasibility of the proposed schedule in terms of resource availability, critical path analysis, and milestone alignment with project objectives.
- Assist in the preparation of disbursement planning, ensuring that the financial flows associated with the contract are carefully mapped out to align with project milestones, ensuring timely payments to contractors based on performance and completion of work stages.

- Support the Client in assessing cash flow management, ensuring the contract terms facilitate the financial sustainability of the project throughout its duration.

d. Participation in Contract Negotiation:

- Provide expert support in contract negotiations to ensure that the final contract terms align with the Client's requirements, budget, and regulatory standards.
- Assist in refining contractual clauses related to scope, payment terms, and penalties for non-performance, warranties, liabilities, and dispute resolution mechanisms, ensuring that the contract is both comprehensive and legally binding.
- Negotiate performance guarantees, liquidated damages, and contractual safeguards to mitigate project risks, ensuring the selected contractor is incentivized to meet deadlines, quality standards, and budget constraints.
- Ensure the contract includes comprehensive clauses for force majeure, termination rights, and project variations, ensuring flexibility for unforeseen circumstances without compromising the overall project objectives.

6.2. Activity II: Supervision and Contract Administration of EPC Contract

6.2.1 Sub-Activity I: Construction Supervision Services

The Consultant will oversee the execution of the Engineering, Procurement, and Construction (EPC) contract to ensure timely completion, cost-effectiveness, and adherence to contractual obligations. Key responsibilities include but not limited to:

a. Project Quality Control and Cost Control:

- Implement a well-structured Quality Management System (QMS) to ensure that all construction activities adhere to the approved design specifications, industry standards, and regulatory requirements.
- Monitor and verify that all materials, workmanship, and construction processes meet the required quality benchmarks.
- Conduct regular inspections, audits, and testing to assess the quality of work and materials at various stages of the construction.
- Develop and enforce a cost control system, ensuring that the project remains within the allocated budget. This will include regular cost tracking, variance analysis, and corrective actions as needed.

- Review change orders and claims for variations, ensuring they are accurately priced, justified, and properly documented.

b. Coordination of the Works Contracts

- Manage and coordinate the activities of all contractors and subcontractors involved in the project, ensuring that their work aligns with the project schedule and scope.
- Foster effective communication between all project stakeholders, including the Client, contractors, regulatory authorities, and suppliers, to ensure smooth operations and resolve issues promptly.
- Monitor contract compliance, ensuring that all parties adhere to their contractual obligations and performance standards.
- Track deliverables, and facilitate timely resolution of any delays or disputes to maintain the project schedule.

c. Time and Information Management

- Oversee project scheduling, ensuring that milestones are met and timelines are adhered to. Provide regular updates and forecasts to ensure proactive management of project delays or changes.
- Maintain a comprehensive project information management system that tracks documents, approvals, schedules, drawings, and other essential information in an organized and easily accessible manner.
- Implement a well-structured document control system to manage all communication, design changes, approvals, and other critical project information in real-time.

d. Risk Management:

- Identify potential project risks related to construction, schedule, budget, and quality, and develop mitigation strategies to address these risks.
- Monitor risk management plans and ensure timely implementation of corrective actions for any issues identified during the construction phase.
- Regularly review and update the Risk Register to include new risks, status updates, and any actions taken to mitigate them.
- Conduct periodic risk assessments in collaboration with the project team to ensure that all potential risks are addressed proactively.

e. Site Health, Security, and Safety Management:

- Oversee the implementation of a comprehensive health, safety, and environmental (HSE) management plan to ensure the safety of all personnel working on-site, as well as the public.
- Conduct regular safety audits and site inspections to ensure compliance with local and international safety regulations.
- Monitor and enforce safety protocols on-site, including the use of personal protective equipment (PPE), safe work practices, and emergency response procedures.
- Ensure that the site is secure, with appropriate access control and safety measures in place to prevent accidents, injuries, and security breaches.

f. Environmental and Social Impact Management:

- Ensure that the project adheres to the Environmental and Social Management Plan (ESMP), including the mitigation measures identified for potential environmental and social impacts.
- Monitor and enforce environmental protection measures to minimize the project's ecological footprint, such as waste management, water quality management, noise control, and dust suppression.
- Ensure that the project complies with the Environmental and Social Safeguards as outlined by the World Bank and other relevant financing institutions.
- Where applicable, assist in the implementation of a Resettlement Action Plan (RAP), ensuring compliance with international standards and addressing the needs of affected communities.
- Promote sustainable practices and ensure that the project respects the local communities and ecosystem.

g. Measures for Minimizing and Mitigating Interference with Site Surroundings Operations

- Develop and implement strategies to minimize disruption to the surrounding environment, local communities, and ongoing operations in the area.
- Collaborate with local authorities and stakeholders to ensure that construction activities do not interfere with local businesses, traffic, or community life.

- Monitor and report on any unforeseen disturbances, and implement corrective actions to mitigate any negative impacts on the surrounding environment and operations.

6.2.2 Sub-Activity II: Administrative and Financial Management Support

The Consultant will support EEP in project administration, financial management, and reporting. Key responsibilities include but not limited to:

a. Review and Approval of Design Documents Submitted by the Contractor:

- Review all design documents, technical submissions, and drawings provided by the contractor to ensure they comply with the contractual requirements and project specifications.
- Approve or suggest revisions to ensure design quality, adherence to technical standards, and alignment with the project objectives.
- Coordinate with technical and engineering teams to resolve any discrepancies or concerns in the contractor's submissions.

b. Reception and Checking of Invoices:

- Receive, scrutinize, and verify invoices submitted by contractors, suppliers, and other vendors to ensure accuracy, completeness, and compliance with the terms of the contract.
- Ensure that invoices align with project milestones, work completion certificates, and contractual payment schedules.
- Track and manage payment milestones, ensuring that payments are processed promptly.

c. Endorsement with "Certification of Service (or Work) Given/Done"

- Certify the completion of services or works in accordance with the contract requirements, marking the completion of specific project phases or milestones.
- Endorse invoices with appropriate certifications confirming that the work was completed to specification and is satisfactory for payment.
- Maintain accurate records of certifications issued to ensure transparency and compliance with project requirements.

d. Preparation of Payment Certificates to Contractors and Suppliers

- Prepare payment certificates for contractors, subcontractors, and suppliers based on verified invoices and completed work.
- Ensure that payment certificates reflect the correct amounts due in line with the contractual agreements, progress of work, and payment schedules.
- Coordinate with financial teams to ensure payments are processed promptly and efficiently.

e. Certification of Monthly Progress of Works

- Provide monthly progress certifications to confirm the status of work completed to date. This will include assessments of work done versus the scheduled progress and the associated costs incurred.
- Ensure that progress reports are submitted in a timely manner and are comprehensive, detailing the work completed, any delays or issues, and the corresponding financial status.

f. Advisory on Progress, Issues, Variations, and Potential Variations

- Advise the Client (EEP) on project progress, highlighting any potential technical, financial, or scheduling issues.
- Provide timely alerts regarding variations or potential changes in technical scope or cost estimates, including justifications and recommendations for addressing these changes.
- Ensure that all project changes are appropriately documented and communicated to all relevant stakeholders.
- Issue monthly reports, provide feedback on communications between the contractor and the Client, and ensure all project stakeholders are informed of any key issues and their resolutions.

g. Maintaining Accurate and Systematic Records of Project Services

- Establish and maintain a detailed record-keeping system for all financial transactions and administrative activities related to the project.
- Ensure that all records are accurate, up-to-date, and compliant with contractual, regulatory, and financial reporting standards.
- Maintain an audit trail for all costs and expenditures to demonstrate that the project funds have been properly allocated and utilized.

h. Preparation of Reporting Documents for the Client, Ministry of Finance, and the World Bank

- Prepare regular reporting documents summarizing the project's progress, financial status, and administrative updates as required by the Client (EEP), Ministry of Finance, and World Bank.
- Ensure that these reports are delivered in a timely manner, with detailed information on progress, financial disbursements, variations, and any other relevant matters.
- Maintain clear communication with stakeholders to ensure that reports reflect the true status of the project and support decision-making processes.

i. Monthly and Quarterly Reporting on Project Activity Progress

- Produce and submit monthly and quarterly progress reports, detailing the achievements, challenges, and financial status of the project.
- Reports should provide a comprehensive overview of ongoing activities, key milestones achieved, upcoming tasks, and any changes to the project scope or timeline.
- Ensure that all reports are clear, accurate, and provide actionable insights for the Client and other stakeholders.

6.2.3 Sub-Activity III: Project Completion and Commissioning

The Consultant will oversee the commissioning process, conduct necessary inspections, and ensure that all documentation is complete, accurate, and satisfactory for final acceptance of the works. Key responsibilities include but not limited to:

a. Commissioning Phase

- Review and Approval of Contractor's Procedures for Switch-on, Performance, and Acceptance Testing.
- Review the contractor's procedures for switch-on, performance testing, and acceptance testing to ensure they align with the contract specifications and industry standards.
- Ensure that the procedures for all critical tests are comprehensive, clearly defined, and include necessary safety protocols.
- Approve or recommend revisions to ensure that the procedures are fit for the specific requirements of the installation.

b. Coordination of Switch-on and Testing with the Client's Commissioning Team

- Work closely with the Client's commissioning team to coordinate the switch-on of equipment and the testing process.
- Ensure that the necessary resources, tools, and personnel are available for all testing and commissioning activities.
- Monitor and facilitate the smooth execution of commissioning activities in line with the project schedule.

c. Participation in Acceptance (Post-Energization) Testing and Results Review

- Actively participate in acceptance testing (post-energization), ensuring that all tests meet the requirements stipulated in the contract.
- Thoroughly review the results of all tests conducted during commissioning, ensuring that they meet performance, safety, and operational standards.
- Document and issue a detailed test report, outlining the outcomes of the tests, any deviations from expected results, and any corrective actions required.

d. Report on Changes Made to the Installation to Meet Acceptance Test Requirements

- Identify and document any changes or modifications made to the installation or equipment to ensure compliance with acceptance test requirements.
- Prepare a detailed report on these changes, including justifications, technical specifications, and any impacts on project timelines or costs.
- Document and issue a detailed test report, outlining the outcomes of the tests, any deviations from expected results, and any corrective actions required.

e. Defect Liability Period Activities

During the defect liability period for each Works contract, the Consultant will assist the Client in ensuring that any remaining issues are resolved in a timely and efficient manner. Key tasks include:-

- Update of Outstanding Snags and Defects List: Continuously update and monitor the list of outstanding snags and defects identified during inspections, ensuring that they are rectified by the contractor in a timely manner.
- Prepare the Certificate of Substantial Completion and other relevant certificates, signifying that the project has reached a stage where it is ready for handover to the Client.

- Organize and Participate in Periodic Joint Site Inspections: Schedule and participate in periodic joint site inspections with the contractor and the Client to monitor the completion of defect rectifications and address any remaining concerns.
- Document the outcomes of these inspections and provide recommendations for actions needed to resolve any open issues.
- Review and Approval of O&M Manuals: Review and approve the Operations and Maintenance (O&M) manuals provided by the contractor, ensuring they are complete, accurate, and comply with the technical specifications of the project.
- Confirm that the manuals include all necessary information for the proper operation, maintenance, and safety of the installed equipment before the final certificate is issued.
- Preparation of Defect Liability Certificates: Once all identified defects have been corrected, issue the defect liability certificate, certifying that all defects or outstanding issues have been addressed.
- Once all identified defects have been corrected, issue the defect liability certificate, certifying that all defects or outstanding issues have been addressed.
- Ensure that the certification process is documented, and all necessary approvals are obtained from relevant stakeholders.
- Assist the Client in Resolving Issues Related to Warranty and Final Acceptance of Works: Provide ongoing support to the Client in resolving any issues related to warranty claims, performance issues, or disputes regarding final acceptance of the works.
- Assist in negotiations with the contractor, ensuring that any warranty or acceptance concerns are addressed promptly and satisfactorily.
- Issuance of Final Acceptance Certificate: Issue the Final Acceptance Certificate once all tests, inspections, and contractual obligations have been met and all project deliverables have been completed to the required standards.
- Ensure that all documentation is reviewed and finalized before the certificate is issued.
- Approval of the Final Statement: Review and approve the final statement of the project, ensuring that all financial matters, including payments and deductions, have been settled in accordance with the contract terms.
- Obtain the necessary approval from the Employer before proceeding with any financial settlements.

- Issuance of Final Payment Certificates: Prepare and issue final payment certificates to the contractor and suppliers, ensuring that all due payments are processed accurately and in line with the contractual terms.
- Ensure that all financial matters are cleared and documented, including any retention amounts or holdbacks.
- Arranging Final Settlement of Financial Claims and Disputes: Coordinate and oversee the final settlement of any outstanding financial claims, disputes, or disagreements related to project completion.
- Ensure that all claims are addressed in accordance with the contract and any applicable dispute resolution mechanisms.
- Review and Approval of Final As-Built Drawings: Review and approve the final as-built drawings, ensuring that they accurately reflect the completed work and any changes made during construction.
- Ensure that the as-built documentation is comprehensive, complete, and ready for handover to the Client.
- Preparation of Project Completion Report: Prepare a comprehensive project completion report, summarizing the entire project lifecycle from inception to final acceptance.
- Include an overview of key milestones, issues encountered, solutions implemented, financial summary, and lessons learned to assist the Client in project evaluation and future planning.

7. Training and Capacity Building on Engineering Procurement

a. Background

The Ethiopian Electric Power (EEP) recognizes this contract as a strategic opportunity to enhance the procurement expertise of its staff in engineering projects. The training program is designed as a fast-track capacity-building initiative targeting a select group of professionals. This initiative aims to facilitate maximum technical knowledge transfer through a well-coordinated approach that integrates theoretical learning with practical application.

The training program will be conducted offshore to expose participants to international best practices. A detailed assessment of the training requirements and a structured training program will be developed and submitted to EEP for review and approval. The training is scheduled to take place before the completion of the technical design and tender review phase. This ensures that the

participants can immediately apply their newly acquired procurement knowledge to the real-time procurement activities of PRIME-1 projects.

b. Training Objectives

The primary objective of this training program is to equip EEP's procurement professionals and managers with advanced knowledge and practical skills in value-based procurement within the context of engineering projects. The focus is on ensuring that procurement decisions are made based on total value assessment rather than solely on price. Key objectives include but not limited to:-

- Understanding Rated Criteria Evaluation – Developing expertise in evaluating procurement bids using the Rated Criteria approach, in alignment with World Bank procurement guidelines.
- Applying Value-Based Procurement – Enhancing capabilities in procurement for value, ensuring quality, sustainability, and efficiency are prioritized.
- Integrating Price and Life-Cycle Costing – Equipping participants with methodologies for applying combined price and life-cycle cost formulas for procurement of works, goods, and services.
- Ensuring Compliance with World Bank Standards – Familiarizing participants with the default Rated Criteria approach, effective from September 1, 2023, for most international procurements financed by the World Bank.
- Enhancing Procurement Planning and Execution – Providing hands-on training in developing procurement strategies that mitigate risks and align with project-specific requirements.
- Practical Application in PRIME-1 Projects – Demonstrating Rated Criteria in real procurement scenarios, ensuring direct application of learned skills.

c. Training Scope

The scope of this training covers all essential Rated Criteria and Evaluation Approaches relevant to procurement in transmission and substation projects, in accordance with World Bank procurement guidelines. Key areas include but not limited to:-

- Identification of Project-Specific Rated Criteria – Ensuring the criteria reflect critical issues and risks identified in the Project Procurement Strategy for Development (PPSD).

- Bidder Submission Requirements – Defining necessary supporting documents and evidence to be submitted by bidders.
- Evaluation Methodology and Weighting System – Establishing a structured and transparent approach for bid evaluation.
- Updating Employer and Tender Requirements – Aligning Employer's General and Specific Requirements with value-driven procurement practices.

d. Detailed Rated Criteria for Transmission and Substation Projects

Each of the following Rated Criteria will be covered in-depth, tailored specifically for transmission and substation procurement but not limited to:-

- Methodology & Work Plan – Evaluating the contractor's approach to project execution, resource allocation, and risk mitigation.
- Health & Safety Standards – Ensuring compliance with national and international safety regulations and best practices.
- Performance History – Assessing previous project execution, quality of work, and adherence to schedules.
- Capacity & Technical Competency – Evaluating the contractor's experience, financial strength, and technical capacity.
- Functionality & Technical Merit – Ensuring that proposed solutions meet or exceed operational and performance standards.
- Project Team & Key Personnel – Verifying the qualifications and experience of the proposed project management team.
- Sustainability & Environmental Considerations – Integrating eco-friendly solutions and adherence to sustainable procurement principles.
- Net Zero & Carbon Reduction Commitments – Evaluating initiatives and commitments to reduce carbon footprint and enhance energy efficiency.
- Supply Chain Management – Ensuring resilient and transparent supply chains that align with project delivery goals.

e. Implementation Approach

i. Training Delivery Model

- Offshore, instructor-led classroom sessions combined with hands-on case studies.
- Interactive workshops with international procurement specialists.

- Live procurement simulations based on PRIME-1 project scenarios.

ii. Evaluation & Certification:

- Pre-training assessment to determine baseline knowledge.
- Post-training evaluation to measure competency improvement.
- Certification upon successful completion of the program.

iii. Integration into EEP Procurement Practices:

- Adoption of Rated Criteria as a standard practice.
- Continuous mentorship and refresher programs.
- Creation of an internal knowledge-sharing platform.

f. Training Target

No	Expert Level	Number of Trainees
1	H&S Engineer	1
2	E&S experts	1
3	Transmission Planning engineer	1
4	Transmission Engineer	2
5	Substation Engineer	2
6	Project Engineer	4
7	Procurement Expert	4
8	Cyber Security expert	1
Total number of trainees		**16**

g. Need for Ratification

The Service Provider shall review, refine, standardize, and ratify the service agreement to ensure compliance with industry best practices and alignment with the Client's strategic objectives.

The ratification process shall be conducted under the following conditions:-

- Client Benefit: The ratification shall be considered valid only if it provides clear benefits to the Client and receives formal approval.

- Cost Neutrality: The ratification shall not introduce any additional financial burden on the Client. However, adjustments may be considered if they enhance cost-effectiveness and value delivery.

- **Ratification Considerations**:-

  - Service & Work Assessment: Evaluate the requested services and deliverables against global best practices in the power sector and refine them to ensure compliance with industry standards and regulatory requirements.
  - Strategic Alignment with EEP: Assess the required services in relation to EEP's corporate planning and long-term strategic goals, making necessary refinements to ensure seamless alignment.
  - Training Needs Assessment (TNA) & Delivery Methodology: The consultant shall define a clear and structured methodology for training delivery, ensuring all technical and logistical aspects are comprehensively covered.
    - ✓ Offshore Training Logistics & Financial Coverage:
      - The consultant shall fully cover offshore training expenses, including: Airfare (round-trip), local transportation, accommodation (minimum 4-star standard), meals, and tuition fees.
      - Training venues, daily refreshments, and travel incident expenses (USD 100 per day per trainee).
      - If deemed necessary, the total cost of hotels, meals, and travel incident expenses may be calculated and provided as a lump-sum allowance to trainees before travel.

    - ✓ Training Aids & Follow-up Mechanism:
      - The consultant shall develop and provide high-quality training materials for each training module.
      - A structured follow-up mechanism shall be implemented to track trainee progress and knowledge retention.

    - ✓ Training Delivery Methodology & Infrastructure Compatibility:

- The proposed training methodology must be well-defined and aligned with: EEP's current infrastructure and operational needs and Upcoming infrastructure projects planned for short-term implementation.

✓ Expert Trainers Qualification:

- The consultant shall propose expert trainers with proven qualifications and industry-relevant experience for each training topic.

✓ Comprehensive Procurement Manual:

- The consultant shall develop and provide a Comprehensive Procurement Manual for the application of Rated Criteria in Substation and Transmission Project Procurement to ensure: Full compliance with international procurement standards (e.g., World Bank, AfDB, and EBRD procurement guidelines).
- Integration of best practices for evaluating technical and financial proposals.
- Clear guidance on the application of rated criteria, qualification requirements, and risk mitigation strategies.

h. Training Outcome Assessment

Upon completion of the training program, the training service provider shall conduct a structured Training Outcome Assessment to evaluate effectiveness, impact, and alignment with the Client's needs.

- **Key Areas of Assessment:-**
  - Measure trainees' skill enhancement against predefined performance benchmarks.
  - Conduct pre- and post-training assessments to quantify knowledge gains.

- **Application of Acquired Competencies:-**
  - Analyze the applicability of acquired knowledge in real-world project execution.
  - Identify gaps requiring additional coaching, refresher courses, or mentoring programs.

- **Performance-Based Feedback & Recommendations:-**

- Obtain feedback from trainees and supervisors regarding the practical benefits of the training.
- Provide recommendations for further capacity-building initiatives to ensure continuous skills enhancement.

8. Detailed Tasks of the Consultant

This section outlines the detailed scope of work required from the Consultant for the Project. The Consultant shall be responsible for the following tasks:

a. Preliminary Engineering Design and Tender Review

In Sub-Activity-I of the project, the Consultant will conduct an exhaustive assessment of the engineering design and tender document initially prepared by Ethiopian Electric Power (EEP). This involves a thorough technical review of all aspects and requirements, including but not limited to:

- Review and Update of Draft Tender Document
  - Conduct a meticulous examination of the existing tender documentation, including technical specifications, requirements, preliminary designs, and contractual terms.
  - Evaluate the currency and relevance of the bid with respect to industry norms, regulatory requirements, and any changes in project scope.
  - Revise and update technical specifications to align with the latest advancements and industry best practices.
- Technical Parameter Assessment
  - The Consultant shall critically evaluate the primary technical parameters specified in the tender document, including but not limited to:
    - Number of Circuits: Assess the appropriateness of the proposed number of circuits, considering capacity and redundancy requirements.
    - Conductor Size: Evaluate the conductor size in terms of efficiency, cost-effectiveness, compliance, reliability, optimal performance, and environmental impact.
    - Tower Types: Examine the structural integrity, load-bearing capacity, and suitability of the tower designs along the transmission route.
    - Loading Factors: Ensure loading considerations are within acceptable limits to maintain structural and electrical integrity.

- Equipment Ratings: Verify that the ratings of electrical equipment (e.g., transformers, circuit breakers, switches) match the operational requirements.

- Legal and Compliance Check
  - Conduct a comprehensive legal and compliance review to ensure adherence to international standards and Ethiopian Grid Code regulations.
  - Integrate lessons learned from previous projects to improve bid quality and address past deficiencies.
- Scope, Cost, and Schedule Review
  - Project Schedule Update: Adjust the project schedule to reflect any changes in timelines, milestones, and deliverables.
  - Scope and Cost Review: Ensure the scope of supply, work breakdown structure, and cost estimates in the tender align with project requirements.
- Review and Evaluation of Specifications
  - Identify and implement necessary modifications to align technical specifications with international industry standards and Ethiopian Grid Code.
- Environmental, Social, and Occupational Health & Safety Compliance
  - Review all prepared safeguard instruments and ensure their integration into the bid documents.
  - Ensure the application of all environmental, social, and occupational health and safety (OHS) measures in project execution.
- Engineering Safety Controls
  - Update plant safety design in accordance with international standards and incorporate any missing engineering safety controls.
- Qualification and Evaluation Criteria
  - Develop appropriate evaluation and qualification criteria as per the World Bank's Rated Criteria Standard.
- Bid Finalization and Launch Support
  - Prepare and submit the updated tender documents in line with Standard Procurement Documents (SPD), ensuring World Bank clearance before bid launch.
  - Assist EEP in launching the bid and provide technical support during the bid evaluation process.

I. Transmission Line Tender Review

The Consultant shall be responsible for a comprehensive review of ground survey data and soil investigation results to determine the appropriate tower types, heights, and corresponding foundation designs. This review must ensure that the structural and geotechnical considerations align with international best practices and the specific project requirements.

Upon completion of the terrain survey analysis, the Consultant shall undertake a detailed assessment of the tower spotting profile, verifying its accuracy and ensuring that it adheres to optimal transmission design principles. This review shall encompass tower specifications, including:-

- Loading requirement
- Tower configurations and outlines
- Cross-arm designs
- Insulator specifications

Furthermore, the Consultant shall ensure that all necessary corrections and optimizations derived from the analysis are fully incorporated into the final conceptual design. These enhancements shall be reflected in the final tender documentation, guaranteeing a technically robust and commercially sound procurement package.

II. Substation Tender Review

The Consultant shall undertake a Thorough and exhaustive evaluation of the substation tender documentation, ensuring that all technical, operational, and regulatory aspects are fully addressed. The scope of this assessment shall include, but is not limited to:

- Specifications Evaluation
  - Conduct a critical review of the prepared technical specifications for all substation equipment, ensuring full alignment with international industry standards and the Ethiopian Grid Code.
  - Identify and rectify any inconsistencies, gaps, or ambiguities, ensuring that all technical requirements are clearly defined and enforceable.
- Site Surveys & Soil Investigation Analysis
  - Examine the survey reports and soil investigation findings for the designated substation sites.
  - Assess survey drawings, soil bearing capacities, and equipment loading considerations, ensuring their full compatibility with the civil works design and overall substation layout.

- Scope & Cost Review
    - Conduct a comprehensive review of the scope of supply, work breakdown structure, and cost estimates presented in the tender documentation.
    - Ensure that the defined scope is comprehensive, precise, and in full compliance with the project's technical, financial, and regulatory requirements.
- Communication & Control Systems Assessment
    - Evaluate the communication and control system requirements necessary for efficient monitoring, supervision, and control of the substations.
    - Ensure seamless integration and interoperability with existing systems installed within Ethiopia's grid infrastructure, facilitating efficient operations, maintenance, and long-term reliability.

III. Selection of Contractors and Contract Awards

The Consultant shall provide comprehensive support to the Client throughout the tendering process, ensuring transparency, efficiency, and full compliance with international procurement best practices and Ethiopian Electric Power (EEP) regulations. The Consultant's role shall encompass, but not be limited to, the following key areas:-

- Issuance of Tender Documents and Management of Bidders' Inquiries

  The Consultant shall facilitate the structured and efficient issuance of tender documents, ensuring seamless communication with prospective bidders. Responsibilities shall include:
    - Tender Document Issuance: Assist the Client in the timely and structured release of complete tender documents to prospective bidders, ensuring that all legal and technical prerequisites are met.
    - Bidder Inquiries Management: Support the Client in receiving, analyzing, and responding to requests for clarifications and additional information during the bidding period.
    - Amendment of Bidding Documents: Where necessary, assist in the preparation and issuance of formal amendments to the bidding documents, ensuring that modifications are well-documented, justified, and in alignment with procurement best practices.
    - Clarifications & Official Responses: In consultation with EEP, draft and issue authoritative responses to bidders' queries to ensure clarity, consistency, and elimination of ambiguities that could impact bid preparation.
- Bidding Process Management and Bid Evaluation

The Consultant shall oversee and facilitate a transparent, objective, and well-documented bidding and evaluation process, ensuring adherence to international procurement standards

- Bidding Process Oversight: Process Management: Oversee the entire bidding process, ensuring compliance with EEP's procurement framework and assisting the Client in organizing and executing a well-structured process.
- Pre-Bid Meetings Coordination: Organize and conduct pre-bid meetings to address bidders' concerns and ensure a clear and shared understanding of tender requirements.

- Bid Evaluation

  The Consultant shall lead the thorough evaluation of received bids, ensuring that all assessments are technically sound, commercially viable, and fully aligned with project objectives. The evaluation process shall include:

  - Initial Compliance Screening: Conduct a preliminary compliance check to verify that bids meet the mandatory submission requirements, preventing non-compliant bids from proceeding to further evaluation stages.
  - Confidentiality & Security Measures: Enforce strict confidentiality protocols to protect the integrity of the bid evaluation process.
  - Technical Evaluation: Conduct an in-depth analysis of the technical proposals, assessing:

    - Compliance with technical specifications outlined in the tender documents requirements.
    - Proposed methodology and execution plan.
    - Bidder's technical capability, experience, and expertise.
    - Loading Factors: Ensure loading considerations are within acceptable limits

  - Financial Evaluation: Perform a meticulous review of the financial proposals, ensuring:
    - Completeness, accuracy, and compliance with the financial provisions of the tender.
    - Cost-effectiveness and financial viability of the proposals.
    - Alignment with the project budget and funding framework.
    - Loading Factors: Ensure loading considerations are within acceptable limits
  - Qualification Assessment: Evaluate each bidder's technical and financial standing, including:
    - Past performance and track record in similar projects.

- Key personnel's qualifications and expertise.
- Compliance with eligibility criteria set forth in the tender document.

- Risk Analysis: Conduct a comprehensive risk assessment to identify potential risks associated with each bidder, including financial stability, legal compliance, and project execution capacity.
- Evaluation Reports & Contract Drafting:
  - Prepare a detailed and well-documented bid evaluation report, providing clear justifications and recommendations for contract award.
  - Contribute to the drafting of final contract documents, ensuring clarity, enforceability, and alignment with best practices.

IV. Project Implementation Schedule and Disbursement Planning

The Consultant shall be responsible for preparing and submitting a comprehensive, realistic, and well-structured project implementation plan, integrating financial disbursement planning to ensure efficient execution.

- Project Execution Plan: Develop a detailed project timeline, incorporating key milestones, dependencies, and critical path analysis.
- Disbursement Planning: Formulate a structured disbursement plan that ensures funding allocations are synchronized with project progress and expenditure needs.
- Use of Project Management Tools: Leverage modern project management tracking software to enhance monitoring, reporting, and real-time progress tracking.

a. Approval of Contractor's Drawings and Documentation

The Consultant shall be responsible for reviewing, verifying, and approving all contractor-submitted drawings and technical documents, ensuring compliance with project specifications and engineering best practices.

- Review & Approval Process: Collaborate with EEP's Transmission and Substation Engineering teams to provide structured guidance and oversight on the approval of contractor design submissions.
- Ensure that all design submissions adhere to international standards, contractual requirements, and industry best practices.

- Final Documentation & As-Built Drawings: Ensure that all required As-Built drawings and final project documentation are:
  - Comprehensively reviewed, formally approved, and compliant with contractual stipulations.
  - Submitted in the required format and quantities to EEP as per contractual requirements.

b. Supervision and Quality Control of Construction Works

The Consultant shall be responsible for the comprehensive supervision of the construction of transmission lines and substations throughout the entire construction phase. This includes submitting detailed monthly and quarterly progress reports, reviewing contractor payment requests, and validating the adequacy of these requests for EEP authorization.

The supervision scope encompasses the oversight of the commissioning of substations, protection systems, communication systems, and transmission lines, ensuring these are conducted in accordance with the contract specifications.

Additionally, the Consultant shall advise EEP on the final acceptance procedures, including the submission of completion certificates to contractors upon successful project delivery.

The Resident Project Manager, supported by the Consultant's staff, shall maintain thorough oversight to guarantee that all construction, erection, and completion activities strictly adhere to the approved drawings, specifications, and internationally recognized technical standards.

I. Transmission Lines

- The Consultant shall provide both Electrical and Civil Engineers for the following duties:

  - Oversee and evaluate the contractor’s construction procedures.
  - Track and monitor construction schedules for the transmission lines
  - Provide expert advice on the interpretation of contractual matters.
  - Supervise the delivery and receipt of materials and equipment at the construction site.
  - Monitor construction progress and oversee testing and commissioning procedures.
  - Witness, evaluate, and approve the contractor’s on-site tests and commissioning activities.

II. Substations

- The Consultant shall provide both Electrical and Civil Engineers for the following duties:

    - Oversee the contractor's electromechanical construction procedures.
    - Supervise the contractor's civil works construction activities.
    - Monitor the progress of electromechanical and civil works construction schedules.
    - Advise on the resolution of contractual matters.
    - Supervise the delivery of materials and equipment to the site.
    - Ensure timely progress of construction and oversee testing and commissioning procedures.
    - Witness, assess, and approve the contractor's on-site tests and commissioning activities.

c. Environmental and Social Mitigation Measures and Project's Environmental and Social Follow-up

The Consultant is responsible for ensuring that all environmental and social impact mitigation strategies outlined in the Environmental and Social Management Plan (ESMP) and Environmental and Social Impact Assessment (ESIA) are meticulously followed by contractors.

Throughout the project's life cycle, the Consultant shall conduct comprehensive environmental, social, gender, and health & safety monitoring. This includes but is not limited to the following tasks:

- Confirm that all environmental and social issues are addressed, in full compliance with local regulations and the World Bank's safeguard requirements.
- Ensure that construction contractors develop a detailed Environmental, Social, Health, and Safety Management Plan (ESH-SMP) and HIV/AIDS Awareness and Prevention Plan prior to site activities.
- Oversee the implementation of these plans, ensuring adherence to best practices in construction management.
- Document any non-conformity by contractors, review and approve remedial action proposals, and ensure timely correction.
- Monitor the outcomes of inspections or audits conducted by labor, health, safety, or environmental authorities, providing necessary support for audit facilitation.

- Supervise the implementation of the HSE Plan, ensuring the availability of properly equipped first aid kits, and overseeing the training and appointment of first aid responders by contractors.
- Ensure the enforcement of health and safety protocols, including the mandatory use of personal protective equipment (PPE) during all work activities.
- Assist the Employer/Client in tracking and documenting industrial accidents and incidents, including monitoring the Lost Time Injury Frequency Rate (LTIFR) and trends.
- Establish a baseline for monitoring socio-economic changes in local communities as a result of the project, including employment, income levels, gender considerations, and knowledge, attitudes, and practices (KAP) regarding communicable diseases such as HIV/AIDS.
- Verify the availability of first aid kits and the implementation of regular first-aid training and clinics for the workforce and the Client's Project Implementation Unit (PIU).
- Audit labor practices to ensure no use of bonded labor or underage workers.
- Enforce strict safety measures, ensuring that no one, including guests, enters the construction site without the appropriate protective clothing and safety instructions, which must be reviewed with visitors prior to site entry.
- In addition, the Consultant shall integrate the execution of environmental mitigation measures into their monthly and quarterly progress reports, detailing all related activities.

d. Factory Test Witnessing

This task encompasses the inspection and witnessing of factory tests for all equipment and materials to be supplied under the project. All equipment must undergo inspection and testing at the manufacturer's designated testing facilities.

The Consultant shall be accountable for ensuring the highest standards of quality assurance for all equipment and materials supplied under the project contracts.

In collaboration with EEP personnel, the Consultant shall conduct comprehensive inspections and witness all factory tests.

There is no requirement to assign a permanent inspector at the manufacturing facility, but periodic visits must be scheduled.

Factory test inspections and witnessing shall be carried out at appropriate intervals, in accordance with the project's requirements.

The Consultant's proposal for factory test witnessing shall include all costs associated with personnel, travel, accommodation, and allowances.

A formal, written report shall be prepared following each witnessed factory test, detailing the test process and results for review and record-keeping.

e. Site Meetings

The Resident Engineers representing the Consultant shall hold regular site meetings with the contractors' on-site representatives and EEP's Project Office staff. These meetings will address the following key topics but not limited to:-

- Approval or rejection of completed work elements.
- Review of the contractor's work schedule
- Discussion of the contractor's work methods.
- Review of temporary and additional works, if applicable.

Minutes of each meeting shall be documented, signed by all participating parties, and distributed to the participants, as well as to the EEP's Project Office. Other members of the Resident Engineer's field staff are also expected to attend and contribute to these discussions.

f. Liaison Meetings

Liaison meetings will be conducted on a monthly basis, either in Addis Ababa or at the project site. The Resident Project Manager and relevant members of the Consultant's field staff will attend these meetings. The primary objectives of the meetings are as follows, but not limited to:-

- Comprehensive review of the progress reports.
- Identification and resolution of issues or challenges.
- Discussion of contractor performance and work progress.
- Review of financial matters related to the project.
- Support for the Agency's supervision of the project.

These meetings will be chaired by the Consultant's Resident Project Manager, with assistance from the EEP Project Coordinator. The Consultant shall be responsible for taking and distributing the meeting minutes.

g. Liaison Meetings

The Resident Engineer shall maintain a daily site diary, capturing essential project details. The diary shall be a one-page duplicate format, completed each day and maintained on-site. The content of the site diary shall include, but not limited to:-

- Daily weather conditions, affecting work operations.
- Major work activities completed, including acceptance or rejection decisions.
- Written instructions issued to contractors regarding the works.
- Documentation of any issues or challenges encountered during the day.
- Record of site meetings and other significant events that influence project execution.

V. Report

Timely preparation and submission of comprehensive reports are of paramount importance to both the Employer and the Financier throughout the duration of the Project. The Consultant shall ensure all required documentation is provided in a clear and structured format, with three hard copies and a CD-ROM containing the corresponding files.

The format of the reports must be discussed and mutually agreed upon with the EEP's Project Coordinator. The Consultant shall submit Quarterly Progress Reports (QPRs) and Quarterly Environmental and Land Acquisition Monitoring Forms to EEP, detailing all aspects of Project implementation. These reports will include the status of progress against agreed schedules for all lots, as well as the implementation of environmental and social mitigation measures. Any issues affecting Project implementation will be highlighted, along with proposed corrective actions.

a. Inception Report

The Consultant shall submit an Inception Report to the executing Agency within one month from the start of the consultancy contract. The report will outline the Consultant's work plan, define the review and implementation schedule for each task, and provide the submission dates for draft reports. It will assign personnel by name and duration to each task, and present the proposed Project schedule in a detailed breakdown by tasks and sub-tasks. This schedule shall be visualized in a chart format using Microsoft Project.

b. Progress Reports

The Consultant shall prepare and submit a Progress Report no later than the 14th of each month. This report will summarize the work accomplished during the preceding month, identifying any encountered problems (administrative, technical, or financial) and providing recommendations for resolution. The Progress Report shall include the following:

- A brief summary of the project scope
- Procurement status
- Status of Engineer's facilities
- Consultant personnel on-site
- Contractors' equipment and machinery on-site
- Contractors' personnel on-site
- Weather conditions
- Details of any force majeure events
- Progress on items within the scope of work, including comparison of planned vs. actual schedule, delay mitigation proposals, and liquidated damages
- Progress photographs
- Meetings held
- Major site visits
- Correspondence with the Employer and Contractors
- Materials on-site
- Quality control assessments
- Environmental mitigation measures (EMP implementation) and social and resettlement issues (RAP implementation)
- Health and safety issues

- Risk management status
- Contractors' and Consultant's payment records, with breakdowns by currency and payment source
- Project cash flow projections, comparing planned vs. actual expenditures
- Areas of concern
- Corrective actions taken
- Contractual issues
- Interface issues
- Claims and variations
- Partial take-over and preparatory works

c. Specific Reports

The Consultant shall produce additional specific reports and position papers as required, addressing technical, financial, administrative, or procurement matters arising during the Works contract and throughout the project.

In the event of a major design change, the Consultant must prepare a detailed design review report containing:

- The data on which the original tendered design was based
- A complete record of all new design data relevant to the review.
- An as-built record showing the location and dimensions of all work carried out under the contract.
- A copy of all previously approved change orders and contract addenda.
- A description of design assumptions, noting any deviations from project standards technologies.
- Drawings showing both the original and revised design
- Drawings detailing the exact location of the design changes
- A rescheduled list of quantities and costs for the proposed revised design

d. Final Completion Report

Upon the substantial completion of each Works contract, the Consultant shall prepare a Final Completion Report. This report shall summarize the construction method, the supervision process, and provide recommendations for future similar projects undertaken by the Employer. Following the completion of all contracts supervised, the Consultant shall consolidate these reports into a single, comprehensive final report for all contracts, which will include:

- A draft final report for each individual contract
- A summarized and consolidated report of all contracts.
- A final project completion report

9. Engineer's Responsibilities

The Consultant shall undertake all duties and responsibilities of the Engineer. The primary responsibilities include, but are not limited to, the following:

- Transmission Line Route Recommendation: Provide expert advice and recommend the most suitable route for the transmission line.
- Preliminary Design (Substation & Transmission): Develop preliminary designs for substations and transmission lines.
- Tender Document Review: Review all tender documents, including specifications, to ensure compliance with project requirements.
- Submit Final Bidding Documents: Submit the final bidding documents, including Request for Proposals (RFP) and contract terms.
- Bid Evaluation Reports and Contract Preparation: Prepare bid evaluation reports, recommend awardees, and oversee contract preparation.
- Construction Supervision Manual: Prepare a construction supervision manual, detailing routines and procedures for contract management, construction supervision, and administration.
- Design Documents Review & Risk Management: Review, comment, and approve all design documents as per contract standards. Implement a risk assessment and management system for construction covering all major risk categories (technical, safety, environmental, etc.).
- Contractor's Working Drawings Review: Check all contractor working drawings for construction, review, comment, and approve as per contract standards before construction.
- Review and Approve Contractor's Submissions- Review and approve Contractor's engineering design, specifications, and drawings, Supplier's manufacturing procedures, Contractor's construction methodology and schedules.
- Quality Assurance and Environmental Management: Approve Contractor's quality assurance proposals, financial submissions, scheduling, and compliance with environmental management plans (EMPs).

- Factory Inspection Plan Certification: Prepare and certify Factory Inspection Plans for equipment in line with international standards.
- Quality Management Program Surveillance: Verify that the quality management programs of manufacturers comply with contract requirements and maintain periodic surveillance.
- Shop Tests Participation: Participate in or supervise shop testing of major equipment, issuing reports on all tests conducted.
- Issue Instructions to Contractors: Issue necessary instructions to contractors, ensuring that works are carried out in accordance with contract requirements.
- Supervise Site Works: Supervise construction and installation works, checking compliance with approved designs, specifications, and technical standards.
- Check Equipment and Machinery Compliance: Inspect equipment and machinery on-site to ensure compliance with technical and safety requirements.
- Monitor Contractor's Work Progress: Track contractor progress on-site, compare actual progress to scheduled timelines, and optimize completion deadlines.
- Review and Approve Contractor's Invoices: Verify quantities and amounts against contractors' invoices before Employer approval.
- Assist with Substantial Completion: Assist the Client in verifying the completeness and compliance of facilities with contract requirements upon substantial completion.
- Participate in Final System Testing: Work with the PIU to test mechanical and electrical systems, including interlocks and safety features, and issue a comprehensive test report.
- Monitor and Evaluate EMP/RAP: Oversee and evaluate the implementation of the Environmental Management Plan (EMP) and (if applicable) the Resettlement Action Plan (RAP) throughout the project.
- Organize Site Meetings: Organize and lead weekly site meetings with the Employer, Contractors, and other parties involved, preparing and distributing meeting minutes.
- Review Advance Payment Requests: Assess advance payment requests from Contractors and manage their repayment process.
- Issue Interim Certificates for Payment: Issue interim certificates based on work progress and certify the completion of works or parts of the works.
- Prepare Withdrawal Applications for Lenders: Prepare withdrawal applications for Lenders in accordance with credit facility agreements, ensuring all supporting documents are attached.
- Prepare Project Accounts and Financial Statements: Manage project accounts and financial statements in line with project and credit facility agreements.

- Monitor Guarantees/Securities: Track guarantees and securities provided by Contractors under works contracts.
- Manage Retention Clauses: Oversee and manage money retention clauses throughout the project.
- Assist in Payment and Bond Releases: Aid the Employer in the release of payments and performance bonds under the contracts.
- Approval of Subcontractors: Prepare and obtain Employer's approval for subcontractors involved in the project.
- Issue Variation Orders: Issue variation orders, evaluate variations, fix rates for unpriced work, and make recommendations for alternative solutions after obtaining prior approval from the Employer.
- Suspend Works and Approve Extensions: Order suspension of works and, with Employer approval, authorize extensions of the completion period.
- Advice on Claims and Arbitration: Advise the Employer on claims from Contractors and make recommendations regarding arbitration if necessary.
- Submit Reports to Employer-Prepare and submit the following reports to the Employer: Monthly progress reports, Specific reports as required, final completion report.

10. Key Deliverables and Expected Outcomes

Table 2: Deliverables and Expected Out Comes

No	Key area	Key Deliverables	Expected Outcome
Sub-Activity I: Preliminary Engineering Design and Tender Document Review			
1	Tender Document Review & Optimization	Completeness & Consistency Report, Updated Tender Document, Contractual Alignment Report	Clear, comprehensive, and legally sound tender documents ensuring compliance and competitive bidding
2	Project Scope, Cost & Schedule Refinement	Scope Validation, Cost Estimates, Risk-Based Schedule Assessment, Milestone Report	Realistic budget, achievable timelines, and optimized scope preventing cost overruns and delays
3	Bid Process & Contractor Selection	Qualification Criteria, Evaluation Framework, Bidder Benchmarking, Contract Negotiation Report	Transparent, fair, and competitive selection process ensuring competent contractors and optimal contract terms
Sub-Activity II: Selection of Contractors and Contract Awards			
1	Bidding Process & Bid Evaluation	Compliance reports, technical & financial evaluations, scoring matrix, shortlist of bidders.	Fair evaluation, adherence to best practices, best value contractor selection.
2	Project Implementation & Disbursement Planning	Optimized schedule, risk-adjusted timeline, financial disbursement plan, cash flow analysis.	Minimized delays, sustainable payments, improved risk mitigation.
3	Contract Negotiation	Negotiation strategy, draft contract, finalized contractual terms, risk assessment report.	Strong contractual safeguards, reduced disputes, enhanced legal & financial protection.
Sub-Activity III: Project Management and Supervision Services			
1	Project Quality Control and Cost Management	QMS, inspection reports, material testing records, cost control reports, change order validation	Ensures adherence to quality standards, minimizes defects, and prevents cost overruns
2	Risk Management	Risk assessments, mitigation strategies, risk registers,	Proactive risk identification, improved project resilience,

		periodic risk review reports	and enhanced stakeholder confidence
3	Environmental and Social Impact Management	ESMP, compliance reports, waste and pollution monitoring, resettlement action documentation	Ensures adherence to environmental regulations, maintains community relations, and meets financing agency safeguards
1	Project Implementation Schedule Optimization	Reviewed and risk-adjusted project timeline incorporating mitigation measures	Minimized delays, optimized resource utilization, and improved execution efficiency
2	Financial Disbursement & Cash Flow Planning	Aligned disbursement plan with project milestones and contractor payments	Sustainable financial planning, ensuring timely payments and avoiding project cash flow issues
3	Contract Management & Cost Control	Cost evaluation reports, budget alignment, and change order and claim validation	Prevents budget overruns, ensures financial transparency, and optimizes resource allocation
4	Design review and Documentation	Design Comments and Approval Reports, Organized Documentation with a Database and Hard Copies.	Updated designs incorporating best engineering practices, Compatible with the existing network. Documents with easily accessible, well-organized project documentation for future reference
5	Reports	Progress Reports to the Employer and Financer on a monthly and quarterly basis	Progress Reports tracking every progress of the projects that clearly indicate the project history.
6	Supervise Works	Site Supervision Reports Ensuring Compliance with Approved Designs and Specifications.	Ensures that all construction work complies with approved designs, minimizing the risk of errors and ensuring work is carried out to high standards
7	Project Closing	Final Handover Report, As-Built Drawings, Final Documentation, Operation Manuals	Successful transition to operational status with all documents, certifications, and operational manuals provided, ensuring project sustainability

	Organize Meetings	Meeting Agendas, Minutes, and Action Points from Weekly and Monthly Site Meetings	Promotes clear and consistent communication among all project stakeholders, ensuring issues are promptly addressed and project progress is maintained
	ESIA and RAP management	Monitor and Evaluate EMP/RAP: Evaluation Reports on EMP and RAP Implementation Progress.	Full adherence to environmental and social safeguards, ensuring compliance with national regulations and international standards, and fostering positive community relations

11. Schedule and Work Plan

11.1. Project Implementation Schedule

The contract period is Thirty Two (32) months that is Eight (8) months for Activity I and II and Twenty Four (24) months Activity III as given in Table-3 below. The consultant will work closely with EEP in this contract period and will submit the progress of activities as agreed.

The consultant shall review the tender documents for ICB Tenders, assist in bid floating, evaluation and reporting, and prepare contract documents. The deliverable milestones for the project implementation are given in Table-2 below

No	Deliverable Milestones	Duration (months)	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12
Activity I and II														
1	Review and updating of design, specification and Tender documents prepared by EEP	2												
2	Training	2												
3	Selection of contractors and prepare contract documents	6												
Activity III														
			M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20
4	Project Management and Supervision	24												
			M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	

Table 3: Project Implementations Schedules

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.

11.2. Milestones

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.

11.3. Work Plan

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 also

be included. The work plan shall be submitted in Gant-chart that illustrates all the project activities as per the World Bank procurement guidelines and at least contains the following:

- ✓ 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.

12. Resources

The Consultant will work closely with all stakeholders of EEP. 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.

12.1. Facilities to be provided by the Consultant.

The Consultant shall provide all necessary equipment for a high-quality performance of its services.

The Consultant in his financial proposal should include notably the cost of:

(i) Data Management System: The consultant shall procure a cloud based construction data management system (think project or equivalent) for communication throughout the project life time. This data management system shall have separate accounts for the consultant Resident Manager, Project Manager, Site team and all contractors. (The cost of the data management system for the contractors shall be borne by themselves). All communications, letters, requests, drawings and comments, approvals shall be uploaded to the data management system for easy management of documentation.

(ii) Vehicles for permanent use by the Resident Project Manager or any other of his personnel, and temporary vehicles for the site construction supervisors (until contractors supply the vehicles within three (3) months after the contractor receive the advance payment). The Cost of the Resident Project Manager vehicle's insurance and maintenance throughout the duration of the assignment of the consultancy service contract shall be covered by the consultant.

(iii) For the Consultant's construction supervisors and the site supervision staff of the Employer/Client, it is planned that such staff will share vehicles and/or be transported in vehicles supplied by the Contractors. Such transport vehicles should be available within three (3) months after the contractors receive the advance payment. In case of delays in supplying the vehicles within three (3) months the contractor has to provide temporary vehicles for the consultant's supervisors until the vehicles are supplied. The required number of vehicles for the consultant's and Employer's site supervisors will be specified in the bidding document of each Lot. The cost of vehicles' insurance and maintenance throughout the period of the works shall be borne by the Contractor.

(iv) Office equipment such as scanners, plotters, computers; printers, platforms, etc.

The Consultant shall be permanently established in Ethiopia during of the Consultancy Service contract. For this reason, a liaison office, where the Resident Project Manager is to be placed, shall be established in Addis Ababa. All related costs for the office in Addis Ababa shall be covered by the Consultant. Site offices and residential camps shall be foreseen in several project locations and shall be provided by the contractors. The location of residential camps, the site offices and the detail requirement of the office, facilities and office furniture will be specified in the bidding document of each Lot and,

(v) Other necessary tools/equipment for the performance of the Consultancy Services.

It is further noted that all communication related costs made by the Consultant (telephone, fax, courier, internet, etc.) shall be covered by the Consultant for the complete duration of the Consultancy Contract.

12.2. Duties and responsibilities of the Employer/Client

The Client will be responsible for providing the information and supporting arrangement for the necessary consultations and any required engagements. The Employer/Client shall provide the following to the Consultant:

All the relevant documents, including the Feasibility studies, tender documents and Safeguard Instrument studies;

- ✓ Counterpart staff to work with Consultant's team.

- ✓ Support the Consultant with work permits and visas for Ethiopia plus introductory letter for travels in the region related to the project.
- ✓ Access to relevant as-built documentation to the extent of their availability
- ✓ Support Access to the project areas.and
- ✓ Access to relevant information to the extent of its availability

13. Qualification of Consultant

13.1. Consultant's Organization and Experience

The Consultant shall demonstrate it have a well-proven and internationally recognized experience of transmission and substation consultancy service for high voltage of 132kV and above projects. It should also have an experience in preparation of specification & tender documents, Project Management & Supervision for high voltage substations and transmission lines with voltage level of 132kV and above. The Consultant should have successfully performed similar assignments and shall have a working experience in power systems and operation across the Globe. The Consultant shall submit a detailed working plan and methodology for executing the assignment, outlining the approach and key steps to be followed, in their proposal.

13.2. Qualification of Key-Staff

The Consultant shall assemble a team of both key and non-key experts as deemed necessary. List of Experts (LOE) to be assigned to the services are as indicated in the table below. 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.

The consultant will be expected to work closely with the client's staff and with other third parties relevant to the required services. 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. The key staffs (International) for the assignment and minimum qualifications required are listed in Table-4 below: -

For Activity I and Activity II (Preliminary Design, Bid preparation and Selecting Contractor)

Key Staff

1. Project Director (Team Leader)
2. Transmission Design Electrical Engineer
3. Transmission and Substation Civil Design Engineer
4. Substation Equipment Design Engineer
5. Automation, Protection & SCADA Design Engineer
6. communication Substation Design Engineer
7. Transformer and Reactor Specialist
8. Procurement and Contract Management Expert
9. EHS expert
10. Cyber security expert

Non-key Staff:

1. Electrical Engineer
2. Civil Engineer

For Activity III (Project Management and Supervision Work)

Key Staff

1. Project Director (Team Leader)
2. Resident Project Manager
3. Substation Equipment Design Electrical Engineer
4. Transmission line Design Electrical Engineer
5. Transmission and Substation Civil Design Engineer
6. Automation, Protection SCADA & Design Engineer
7. Communication Substation Design Engineer
8. Transformer and Reactor Specialist
9. Procurement and Contract Management Expert
10. EHS Expert

11. Cyber security expert
12. Civil Engineer
13. Transmission Electrical Engineer
14. Substation Electrical Engineer

Non-key Staff:

1. Substation Electrical Engineer
2. Transmission Line Stringing Engineer
3. Transmission Line Erection Engineer
4. Substation and Transmission line Civil Engineer
5. Senior Environmental Specialist
6. Senior Social Specialist
7. Substation Electromechanical Erection Engineer
8. Substation Protection and Control Engineer Commissioning Engineer
9. Substation Communication System and SCADA Commissioning Engineer

Table 4: Qualification of Key-staffs

No	Position	Req. No.	Education	Qualification & Experience
1	Project Director	1	Masters or higher degree in the field of Engineering, Business Administration, Project Management or related fields. With background of Engineering	- 15 years of experience, of which 10 years in power sector project management. -The Project Director shall have successfully managed three (3) projects of similar nature in the last 10 years. - Experience in sub–Saharan African countries and have good working knowledge of the

				English language. - experience on Contract Management and Procurement Procedures of the World Bank (Or similar financing bank/agencies such as AfDB or ADB)
2	Resident Project Manager	1	Masters or higher degree in the field of Engineering, Business Administration, Project Management or related fields. With background of Engineering	- 15 years of experience, of which 10 years in power sector project management. -The Project Manager shall have successfully managed Two (2) projects of similar nature in the last 10 years. -Shall have experience in sub–Saharan African countries and have good working knowledge of the English language - experience on Contract Management and Procurement Procedures of the World Bank (Or similar financing bank/agencies such as AfDB or ADB)
3	Substation Equipment Design Electrical Engineer	2	B.sc or higher degree in the field of Electrical, Electromechanical or related fields	- 12 years of experience, of which 8 years of experience in high voltage substation primary design with voltage level of 132kV and above

				- Shall have experience in sub–Saharan African countries and have good working knowledge of the English language
4	Transmission line Design Electrical Engineer	2	B.sc or higher degree in the field of Electrical, Electromechanical or related fields	- 12 years of experience, of which 8 years of experience in high voltage transmission design with voltage level of 132kV and above. - experience in sub–Saharan African countries and have good working knowledge of the English language
5	Transmission and Substation Civil Design Engineer	2	BSC or higher degree in the field of Civil engineering	- 12 years of experience, of which 8 years of experience in high voltage substation and transmission civil design with voltage level of 132kV and above. -Shall have experience in sub–Saharan African countries and have good working knowledge of the English language
6	Automation, Protection SCADA & Design Engineer	1	BSC or higher degree in Electrical, control, communication engineering or related fields	- 12 years of experience, of which 8 years of experience in high voltage substation secondary design with voltage level of 132kV and above.

				-Shall have experience in sub–Saharan African countries and have good working knowledge of the English language
7	Communication Substation Design Engineer	1	BSC or higher degree in Electrical, control, communication engineering or related fields	12 years of experience, of which 8 years of experience in high voltage substation secondary design with voltage level of 132kV and above. -Shall have experience in sub–Saharan African countries and have good working knowledge of the English language
8	Transformer and Reactor Specialist	1	BSC or higher degree in Electrical Power, engineering or related fields	- 12 years of experience, of which 8 years of experience in high voltage Transformers Specialty with voltage level of 132kV and above. -Shall have experience in sub–Saharan African countries and have good working knowledge of the English language
9	Procurement & Contract management Expert	1	Masters or higher degree in engineering, business administration, finance, law or equivalent	- 10 years of experience, of which 8 years of experience in procurement, and relevant experience in procurement roles in which 5 years of experience in power projects. -Advanced knowledge of international procurement and

				World Bank Procurement Regulation and procedures. -Shall have experience in sub–Saharan African countries and have good working knowledge of the English language
10	EHS Expert	2	Masters or higher degree in Environmental, Social, Health & Safety or equivalent	- 10 years of experience, of which 6 years of experience in EHS; and relevant experience in EHS management roles. - Advanced knowledge of World Bank Safeguard Instrument Guidelines. - Shall have experience in sub–Saharan African countries and have good working knowledge of the English language.
11	Cyber security expert	1	Degree in Computer engineering, Computer Science , It or related field specialized in Cyber Security	- 8 years of experience, of which 5 years of experience in Power System Cyber Security. -Shall have good working knowledge of the English language
12	Civil Engineer	2	BSC or higher degree in the field of Civil engineering, Construction Technology Management	- 10 years of experience, of which 8 years of experience in high voltage substation and transmission civil Supervision of 132kV and above. - Must have experience in the

				region and good working knowledge of the English language less than 50 years old
13	Transmission Electrical Engineer	2	BSC or higher degree in the field of Electrical engineering	- 10 years of experience, of which 8 years of experience in high voltage transmission electrical Supervision of 132kV and above. - Must have experience in the region and good working knowledge of the English language less than 50 years old
14	Substation Electrical Engineer	2	BSC or higher degree in the field of Electrical engineering	- 10 years of experience, of which 8 years of experience in high voltage substation electrical Supervision of 132kV and above. - Must have experience in the region and good working knowledge of the English language less than 50 years old

14. Man-Month Allocation

The Consultant shall set up his organisation complying with the project needs and all positions will be held by qualified and skilled staff. Considering the technical and financial evaluation,

contract shall be awarded to a single consultant whose entire result reflects the evaluation criteria.

The Consultant should assume that all contractors should be mobilizing at the same time to all Project sites. Construction of the transmission lines and substation shall progress in parallel in all Project locations.

The Consultant must propose and provide a schedule with breakdown for the various activities called for in the TORs, including the home office and field activities.

The consultant should clearly indicate the man-months to be spent on activities in Project Site Organization (Ethiopia) and Home Office. The Consultant shall confirm the project supervision staff which should be available full time during the construction activity of each lot of the Project. The Consultant shall have at his home office (the firm's headquarters) a supporting team with the required knowledge and specialized skills in all fields that are necessary for the Project, for potentially required support to the Team on the field.

EEP shall assign competent counterpart staff for the supervision of construction works. However, the overall responsibility of site supervision shall remain with the Consultant.

Additionally, a breakdown is provided below for each Activity/Sub activities and per Key staff. This breakdown is indicative (unless otherwise specified) but gives an idea on how the Client requests this assignment to be provided.

Table 5. Man-Month requirement

S. No.	Activity	Man month Requirement
1	Activity I and Activity II (Preliminary Design, Bid preparation and Selecting Contractor)	69.00
2	Activity III (Project Management and Supervision Work)	609.5
	Total	**678.5**

15. Annex

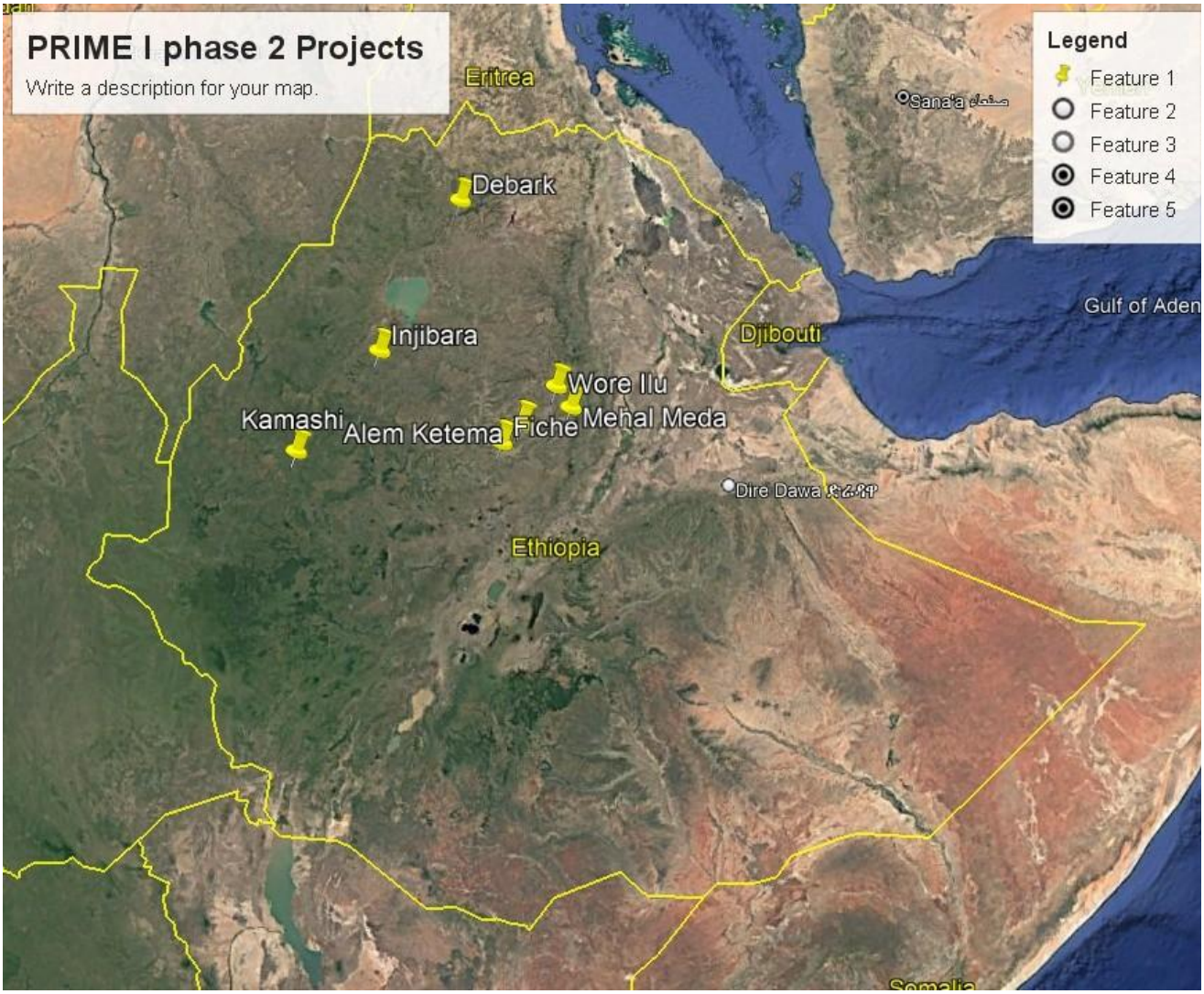
Annex 1 Project Site Map

Annex 2 Project General Information of PRIME-1 Component-2

Annex 3 PIU Organizational Structures

Annex 4 Template Time Sheets

Annex 1: Project Site Map



Annex 2 Project General Information of PRIME-1 Component-2

Ethiopian Electric Utility (EEU) has a plan to supply reliable power for 72 towns in the country. For the reliability and stability improvement it is found that in some areas the back bone of high voltage network needs to be reinforced or new transmission and substations be built. From the 72 towns planned by the utility, the network around Injibara, Debark, Fiche, Arssi Robe, Bale Robe, Woliso, Durame, Kamashi, Bena Daye Halaba towns, Wereilu, Mehal Meda, Limu and Shashemene and their surrounding areas need reinforcement or expansion.

Therefore, Ethiopian Electric Power (EEP) has planned to strength and expands the transmission network related to the towns: Injibara, Debark, Fiche, Kamashi, Injibara, Wereilu, Mehal Meda, and their surrounding areas need reinforcement or expansion.

These projects are grouped in four (4) cluster based on their geographical proximity and they have a total of Four (4) substation and Four (4) transmission contracts as given hereafter.

The consultant is responsible for only Two (2) substation and Two (2) Transmission contracts that are going to be implemented. The name of projects that the consultant is responsible for are given in Table-3 above as of stated below.

1. **West & North West Ethiopia PTP**

a) ***Bure-Injibara 230kV:*** Injibara 230 KV Power Transmission Project is located at Injibara city in Amhara region. It is the administrative center of the Agew Awi Zone in the Amhara Region. Injibara is located at 10°57′N 36°56′E, in Banja Shekudad woreda at an elevation of 2560

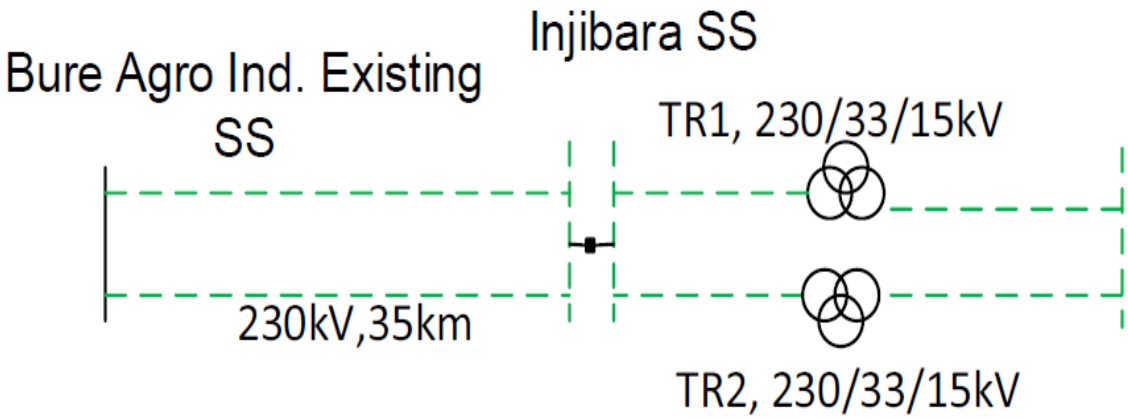


Figure 19: Bure - Injibara 230kV SLD

The scope of this substation is to construct a new 230/33/15 kV substation at Injibara Town by stretching 35 km 230 kV double circuit transmission line from Bure Agro Industry Park 230/33/15 KV Substation.

b) ***Gonder II-Debark 230kV:*** The proposed Debark 230kV substations is located at Debark town in North Gonder zone of the Amhara region which is located at Altitude and longitude of 11.637970N, 37.474196E. The transmission line will be constructed from Gonder II (Azezo) substation to the new proposed Debark substation.

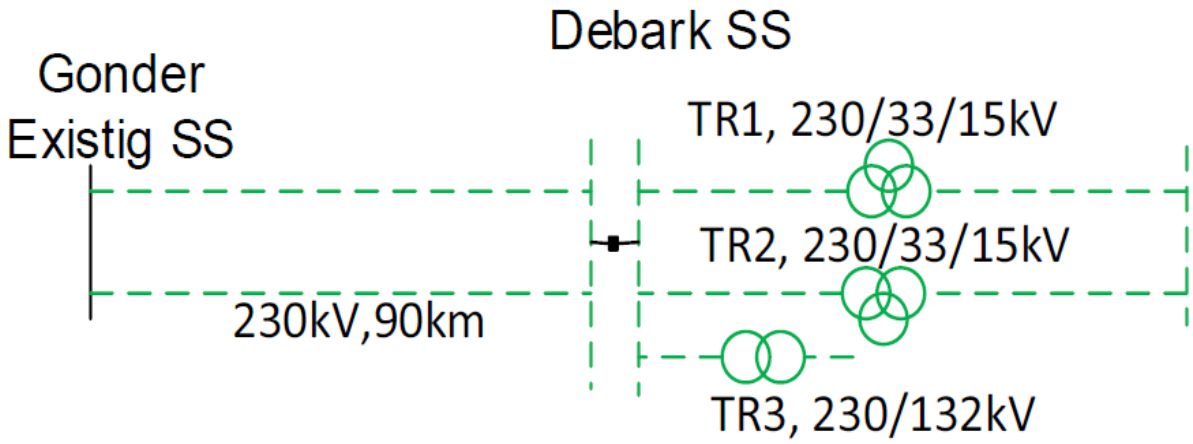


Figure 2~~10~~: Gonder II - Debark 230kV SLD

For Debark 230kV Power Transmission project the scope of the project is to construct a new 230/33/15 kV substation at Debark town by stretching around 90 km double circuit 230 KV transmission line from the existing Gondar II 230 kV substation. the substation work includes,

c) ***Ghimbi-Kamashi 132kV:*** Kamashi is one of the 20 woredas in the Benishangul-Gumuz Region of Ethiopia. Part of the Kamashi Zone, it is bordered by the Didessa River on the east which separates it from Yaso and Belo Jegonfoy, by the Oromia Region on the south and west, and by Agalo Mite on the northwest. This woreda is located on the western slopes of the Didessa River, with elevations ranging from approximately 2000 meters above sea level in the west to just under 1000 meters at the bottom of the Didessa valley

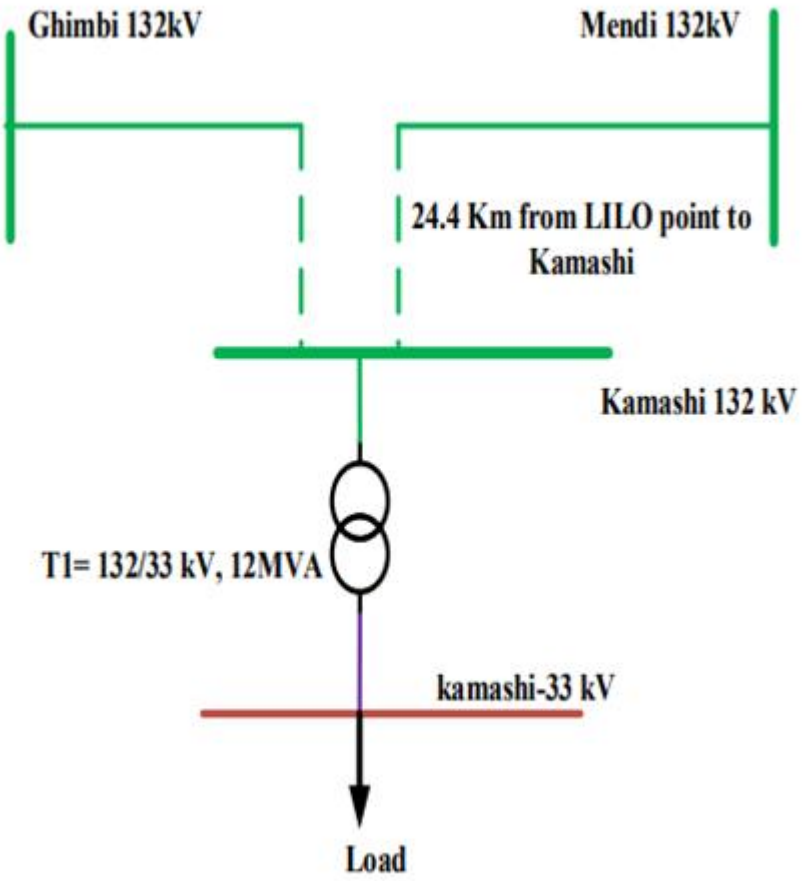


Figure 3~~11~~: Kamashi 132kV SLD

For Kamashi 132kV Power Transmission project the scope of the project is to construct a new 132/33kV substation at Kamashi by stretching 70km, a 132kV single circuit transmission line from Ghimbi substation.

2. **Central North East Ethiopia PTP**

a) ***Gebre Guracha-Fiche-Alem Ketema 230kV:*** Fiche is the capital town for North Shewa zone (Oromia Region) which is located about 120km from Addis Ababa. Its latitude and altitude are 9°48'N 38°44E and its elevation is between 2,738meters and 2782 meters above sea level. Alem Ketema is found in Amhara Reginal state and Its latitude and altitude is N10.07457285° E38.97966063°.

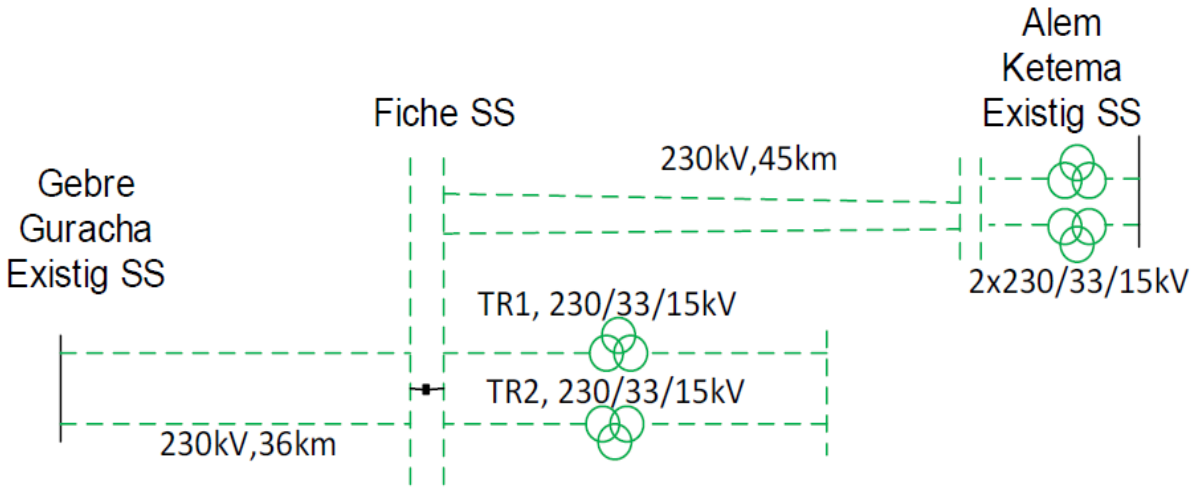


Figure 4~~12~~: Gebre Guracha-Fiche-Alem Ketema 230kV SLD

The Scope of this substation work includes construction of new 230/33/15KV substation at Fiche town by stretching around 36km double circuit 230kV transmission line from Gebre- Guracha 400/230/66/33 kV substation and interconnect Alem Ketema substation through 45km ,230KV double circuit line to Fiche.

b) ***Wereilu 132kV:*** Wereilu 132KV Power Transmission Project is located at Wereilu town in the Amhara region. This town is part of the Debub Wollo Zone, Wereilu is bordered on the south west by Jama, on the west by Legahida on the northwest by Legambo, on the north by Dessie Zuria. The project is located on a 10° 35'48.47"N,

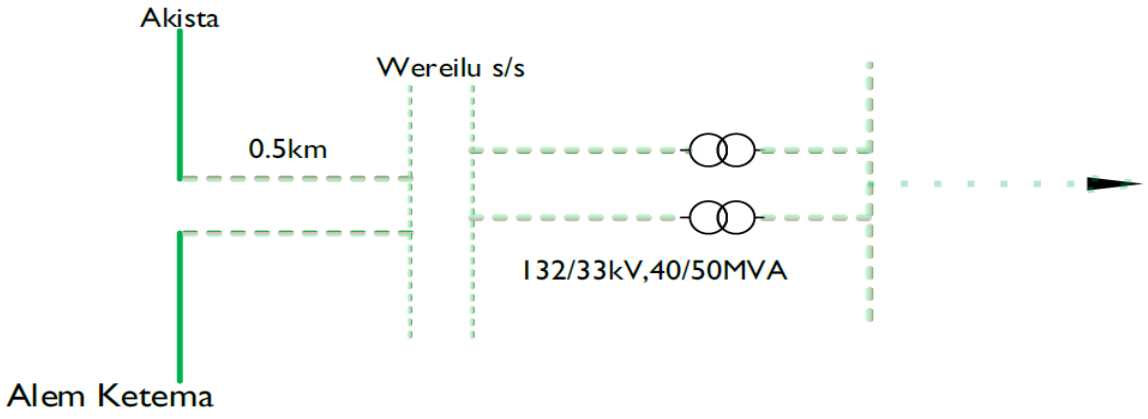


Figure 5~~13~~: Wereilu 132kV SLD

The scope this project is constructing new 132/33 KV substation at Wore ilu town by stretching around 0.5 km double circuit 132 KV transmission line from LILO point of Akista – Alem Ketema 132 KV Transmission line up to Wore ilu Substation.

c) ***Kemissie-Mehal Meda 132kV:*** Mehal Meda 132 KV Power Transmission Project is located at Mehal Meda. Mehal Meda isa town in central Ethiopia. Located in the Semen Shewua Zone of the Amhara Region, with a latitude of 10° 18'53.46"N and longitude 39°41'39.01"E

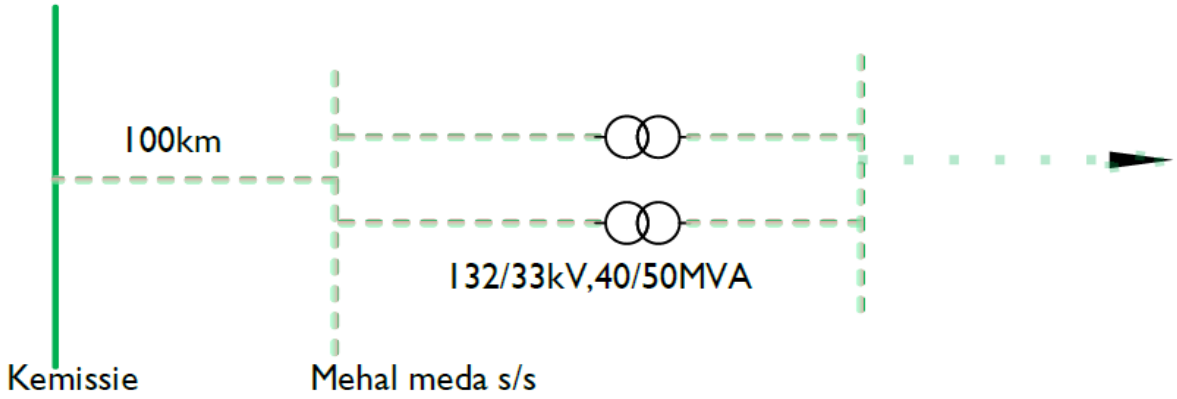


Figure ~~6~~14: Kemisse-Mehal Meda 132kV SLD

For Mehal Meda 132kV Power Transmission project, the scope of the project is to construct a new 132/33 kV substation at Mehal Meda town by stretching around 100 km single circuit 132kV transmission line from existing Kemissie 132 kV substation.

Annex 3: PIU Organizational Structure