DRAFT

Terms of Reference

For selection of Project Management Consultancy Service for AIIB funded Assam Intra-State Transmission System Enhancement Project- Phase-II

i. Project Background

The Government of India has applied for a loan from the Asian Infrastructure Investment Bank (AIIB) to help finance the cost of the Assam Intra-State Transmission System Enhancement Project (the Project).

The Investment Program will:

(i) Strengthen power transmission capacity to deliver reliable and affordable electricity

(ii) Improve access to electricity through grid electricity

(iii) Enhance efficiency and quality of power supply.

(iv) Ensure financial health of the power sector through continued power sector reform

The Project is expected to promote a sustainable state electricity sector with increased transmission capacity to support inclusive and low carbon economic growth. The outcome of the investment program is enhanced quality and expanded service delivery of clean electricity in Assam through improved technical, commercial and financial performance and capability of the Assam Energy Grid Corporation Ltd (AEGCL).

AEGCL with overall responsibility for the execution of the Investment Program and sub-projects, will also function as the Implementing Agency (IA) responsible for the day-to-day project implementation of the sub- projects.

A full-time Project Director is established with responsibility for the day-to-day coordination and administration of the sub- projects

ii. Objective(s) of the Assignment

The project is divided into two phases. In the first phase AEGCL is executing construction of 10 nos. New substation along with its associated transmission lines and bay extension, Augmentation of transformation capacity, Conversion of Air Insulated Substation (AIS) to Gas Insulated Substation (GIS), Installation of Optical Ground Wire (OPGW)., Augmentation of Transmission Lines (Re-conductoring by HTLS) and Institutional capacity building measures in AEGCL.

In the second phase (Phase-II),of this project, AEGCL is going to construct 14 nos. new substation along with transmission lines and associated bays. The Project under the facility includes (all quantities indicated here are approximate)

(i) Construction of Transmission Line of voltage 220kV & 132kV.- Total 495 CkM

(ii) Construction of Substation of voltage level 220/132/33kV, 220/132kV & 132/33kV - (Capacity Addition of 2140MVA)

For smooth execution of the Phase-II of this project, AEGCL intends to recruit a consultancy firm (Project Management Consultancy or PMC or Consultant) to provide consulting services for project management, supervision & implementation of the project.

. The Consultant will be responsible for review existing designs, support AEGCL in procurement of turnkey contractors, supervise the works of the suppliers and contractors and ensure successful commissioning of the Project.

The Consultant must have capability in Design and Engineering of electrical and civil drawings, and monitoring and supervision of construction activity. They shall implement a comprehensive project management plan to ensure the most efficient, timely and economical implementation of the Project. The PMC will also coordinate and supervise construction works during the construction period and assist the IA to operate the plan in the most efficient way. In particular, the PMC will be responsible for supporting the IA in project supervision, implementation of Environmental and Social Management Planning Framework (ESMPF), design and engineering services, conducting review meetings, co-ordination of contractor(s), other government agencies, assist in procurement and control of schedule and quality, advise in financial matters.

Since the component of the project is scattered in various districts of Assam, the consultant should have to demonstrate in their proposal, the methodology of mobilization of their team in order to execute the project in timely manner..

iii. Scope of Services:

The primary responsibilities of the Project Management Consultants (PMC) is to advise and assist the IA in management of sub-projects, providing technical support, administration and implementation of the Loans proposed for AIIB financing:

(i) ***Project Preparation*:** Review the project management (including administration) procedures of the AEGCL for the implementation of the projects and, as appropriate recommend changes and or new procedures in keeping with and modern international practice.

(ii) **Preparation of sub projects**: Advise and assist, at a project management level, in the preparation of each sub project (studies, investigations, designs, specifications and drawings, contract conditions, commercial conditions, Bill of Quantities) to properly define the work.

(iii) ***Procurement*:** The PMC shall be responsible for effectively leading and taking initiative to manage, execute and implement the project. PMC will be responsible in advising, assisting and acting on behalf of AEGCL when so authorized, for the effective management of the Project providing technical support, administration and timely implementation of the loan to be provided by AIIB. The PMC will assist AEGCL in their efforts to achieve project completion within agreed timeline and cost budgets.

The overall responsibility of the PMC is to advise, assist and act on behalf of AEGCL when so authorized including but not limited to.

(a) Review existing tender documents and assist AEGCL in preparation of new tender documents, as required, in accordance with AIIB's standard procedures and guidelines. Assist with advertisement, pre bid meetings, evaluation of technical and financial bids, preparation of bid evaluation reports, contract negotiations and preparation of documents for contract signing, and advise on submission of documents for review and approval.

(b) In the review of the tender documents, the expert shall particularly consider completeness of the scope of work, coherence between sections, constructability, cost, statutory regulations, risk/shared risk and consequences thereof, and compliance with procurement procedures and guidelines.

(c) Organization of and participation in initial kick-off meetings with contractors and relevant stakeholders.

(d) Support AEGCL for management of contracts awarded under the Project.

(e) Assistance in handing over of sites and facilitation of site access.

(iv) ***Contract Management*****:**

(a) Advise and assist AEGCL in management of contracts.

(b) Review and approval of programs for manufacturers and delivery of materials for site construction.

(c) Establishing and maintaining cost control procedures and monitoring cost and assisting / advising AEGCL officers in the process of issuing payment certificates to contractors.

(d) Assist AEGCL in handling all complaints and its redressal and in maintaining a detailed record of such complaints and its redressal.

(e) Assist AEGCL in handling queries related to Right to Information Act (RTI) of the Government of India.

(f) Assist AEGCL in managing other consultants, if any, employed by AEGCL.

(g) Other general contract management matters including but not limited to preparation of progress reports and status reports as required by various agencies including AIIB and the Government of Assam & India.

(h) Preparation of Minutes of all Meetings and keep record of the same to ensure immediate availability as and when required.

(v) ***Design Review*****:**

(a) Review and approval of design of substations & related equipment, transmission line towers, structures, civil buildings, foundations and other related equipment and systems to be used in the Project and ensure proper implementation of quality assurance plan by the EPC contractor as agreed with AEGCL.

(b) Review deviations, if any, and recommend course of further action to AEGCL.

(c) Arrange (with contractors/suppliers) for the reproduction of missing drawings, if any.

(d) The expert of the consultant should be well conversant in review the design with modern software like PLS-CAD, STUD-PRO, Auto-CAD etc. and they should have ensure availability of the original license version of software

(e) Review and approval of testing methods and commissioning procedures submitted by the contractors.

(f) Witness site tests conducted by contractors prior to and during commissioning and recommend certification (or otherwise) to AEGCL.

(g) Maintain an up to date 'design register' with the record of drawings and other design, installation and testing documents of the project. This includes maintaining the latest drawings and documents in PMC's records.

(vi) ***Project*** **Scheduling and Monitoring:** The PMC will assist AEGCL in all aspects of project scheduling and monitoring including but not limited to

(a) Preparation, maintenance and monitoring project's master schedule and detailed schedule including its optimization. Providing timely advice to AEGCL on deviations, if any, from the schedule and the recommended corrective actions.

(b) Review the project schedules submitted by contractors, monitor the progress of contractors' works and suggest corrective actions, as needed.

(c) Updating / revising project schedule as needed.

(d) Measuring, monitoring and reporting 'Results Indicators' as listed in AIIB's Project Document.

(e) Monitoring and reporting all aspects of the project including scope, cost, time, disbursements, compliance to AIIB's procurement and E&S policies.

(f) Assist AEGCL in preparation of forward looking plans including physical, procurement and financial planning.

(g) Preparing regular progress updates.

(h) Arranging and conducting periodic coordination meetings at AEGCL and / or at project sites.

(vii) **Supervision of Project Implementation:** The PMC shall assist AEGCL in all aspects of the supervision of the project packages works during the implementation phase including, but not limited to, frequent on-site progress monitoring and verification as well as deadline and quality control.

While supervising the project implementation, the PMC shall:

(a) Organize meeting at site, prepare draft minutes of meeting (MoM) for sharing MoM to relevant stakeholders.

(b) Consistently follow-up on the works progress as per the agreed work programs and implementation time tables, monitor the time schedules of delivery, installation, testing and commissioning performed by the Contractors and react pro-actively in case of delays and deviations.

(c) Regularly inspect project packages on-site, verify and record materials delivered, measurements and agreed quality and scope of works and deficiencies regarding material management through contractor in and timely reporting to AEGCL.

(d) Access and inspect facilities, equipment and storage areas of the contractors and ensure operations in line with best contractor practice, in particular with regard to work safety and health.

(e) Support AEGCL in the commissioning, financial & contractual closure and final acceptance /handover of the project packages as well as in the finalization of the completion report.

(f) Ensure implementation of E&S and OHS aspects and compliance with the bid documents and agreed E&S management documents.

(g) The PMC shall not be authorized to modify the works as specified in the contract between the contractors and AEGCL, to instruct modifications or in other ways

(viii) **Prepare E&S and OHS documents and monitor the same:** The PMC shall ensure that each sub-project complies with the ESMPF and other E&S and Safety documents prepared for the project.

Specifically, the PMC shall:

(a) Review the ESMPF and prepare the necessary E&S and Safety documents for each sub-project in accordance with the ESMPF, including but not limited to, Environmental and Social Impact Assessments (ESIAs) and/or site specific Environmental and Social Management Plans (ESMPs), Contractor's Environmental and Social Management Plans (CESMP), Resettlement Action Plans (RAPs) and Tribal Peoples Plans (TPPs), wherever required.

(b) Assist AEGCL to submit the sub-projects' E&S and safety documents to AIIB and ensure the disclosure prior to mobilization.

(c) Ensure the required clearances/permits for each sub-project have been obtained prior to construction.

(d) Assist AEGCL to establish a multi-layer Grievance Redress Mechanism (GRM) including Grievance Redress Committee (GRC) to resolve the Grievances of E&S matters in a timely manner.

(e) Iidentify project stakeholders and hold consultations with them as per the public consultation framework of ESMPF.

(f) Ensure and supervise the ESIAs/ESMPs, CESMP along with Traffic Management Plan (TMP) and RAPs, TPPs (if applicable) compliances specific to each sub-project, and implementation of measures and action points proposed in these, as well as any required compensation payments.

(g) Monitor and report on progress of implementation and provide early warning reporting in case of potential violation of applicable standards.

(h) Supervise contractor's application of environmental, health and safety standards as agreed in their contract with AEGCL, report deviations and ensure implementation of corrective measures by the contractors.

(i) Prepare E&S and OHS monitoring reports on a regular basis, in line with sub-projects' ESIAs/ESMPs.

(j) Capacity building for contractors and PMU/PIU.

(k) Update E&S documentation for each sub-project as and when required.

(ix) **Project Progress Meetings**: Project progress meetings shall be held at least once in every two month with the respective Project Managers of the construction assignments. These meetings at the head office of AEGCL shall address on-site progress of project packages and ensure quality assurance. The PMC shall organize these meetings and be ready to present the following topics:

(a) Review of Contractor's work progress and time schedules.

(b) Status of materials arranged/required to be arranged in a given time schedule.

(c) Status of reporting, cash flow and invoicing.

(d) Review of implementation of E&S and OHS aspects and compliance as per the Bid Document and agreed E&S Management documents.

(x) **Reporting Support**: The PMC shall prepare regular progress reports showing the monthly or quarterly progress and to suggest measures for any improvement, encountered

bottlenecks or problems and steps to be taken or initiated through the parties concerned. Furthermore, the Consultant shall support AEGCL in other reporting requirements as required for time to time.

(xii) Monitoring Project Disbursement: Quarterly updating and comparative reporting on overall project disbursement and advising AEGCL on rescheduling of budget against subprojects.

(xiii) Capacity Building Measures: The Consultant shall provide
(i) Formal and (ii) On the job training to both AEGCL and Contractor's staff.

Formal training shall take the form of
(a) Briefings held on site at the beginning of each contract to ensure all staff working on each contract understand respective roles and responsibilities

And

(b) One day workshops approximately 6 months interval (for the execution of works) or as instructed by the Agency that seeks to address common areas noted over the intervening period.

During their regular reviews, the Consultant is expected to provide on the job training on aspects such as in the use of checklists, performing various construction operations, setting-out of the works, quality control procedures, health and safety, Social and environmental management, good contract management practices in conjunction with the AIIB procedures and other aspects as the circumstance dictate.

It is expected that available staff of the Consultant would be in a position to provide required level of training.

However, training on some of the specialized item(s), activities could be either provided by experts from the Head Quarter of the Consultant or could be outsourced. In such cases the Consultant is required to obtain approval of the Agency in regard to the CV, remuneration and other costs associated with it.

Thus, the scope under this activity comprises:
(a) Prepare summarize training need assessment of Engineers of the Executive Agency(ies) and the training plan.
(b) Based on the approved training plan providing periodic on the job training for the engineers of the implementation agencies as far as procedural aspects are concerned.

Consultant's proposal shall describe in details each and every components of the training as to how and where will these training be imparted including brief syllabus.

(xiv) **Management Information System (MIS):**

A major challenge in project management and implementations is to monitor performance and anticipate project completion with respect to time, resources, cost and project objectives so that timely preventive or corrective actions can be taken to ensure the overall project success. In order to enable the client and all stakeholders to manage the project and monitor progress against planned implementation, a Management Information System (MIS) is to be provided for this project by the consultant. The following requirements should be provided; however, these should be seen as a minimum and bidders are requested to confirm they comply with the minimum functional criteria and highlight any additional functionality that is offered:

- Ability for the MIS tool to be customized to meet the specific project requirements. This is planned to be managed through a User Requirement Specification (URS) process developed between the consultant and the client within one week of project award. The required customizations need to be implemented within one month after signing off of the URS.
- The MIS must have user-based access control to protect the integrity of Project Data.
- The MIS should be a web-based application, and not rely on dongle or other licensing mechanisms for access. The intent is to ensure all project participants can access the system.
- The MIS is also required to run via a mobile application to enable real time data collection and transmission when on site.
- The MIS needs to have a Dashboard that is intended for reporting to senior management.
- The MIS should support monitoring of planned vs actual progress and costs at various levels.
- Document management and retrieval will be managed using the MIS, including correspondence and all project reports.
- Training for various levels of users must be provided, including refresher training as required.
- The MIS needs to have a support or helpdesk functionality that is accessible to all project participants throughout the project lifecycle.
- The consultant should plan and design the required ICT infrastructure to ensure 99% uptime of the system, with applicable redundancy.
- All data must be categorized and handed over to the client on completion of the project.
- The client will be responsible for procuring a server on which the MIS and all data will be stored. This will be included in the contract as a Provisional Sum.
- All other reasonable costs associated with the procurement, customization, training, deployment, hardware and software are to be included in the Consultant's costing as follows:
    - Part One – Lump Sum for supply, customization and installation of MIS.
    - Part Two – Lump Sum for conducting 10 training workshops for MIS.
    - Part Three – Monthly rate for monitoring and support of MIS including remuneration of MIS Expert.

In addition to the above, the scope of the MIS should include but not be limited to the following:

1. Consultants are to include cost for setting up the website and also regular periodic updating with project data.

2. It should be basically an WEB BASED online monitoring tool, for review of the project at different level where each of the Project milestones (name of Sub-stations, Lines, Terminal Bays, Crossings, HVDS locations etc.) are to be created package wise, location wise.

3.Each Milestone should be sub-divided into various intermediate mile stones according to intermediate activities/works involvement.

4. It should be capable to acquire Input of physical progress, issues, concerns etc.

5. Cumulative Progress of the project should be available both package wise, Contractor wise, Site wise, Scope wise etc.

6. There should be facility for uploading of photographs of the ongoing works.

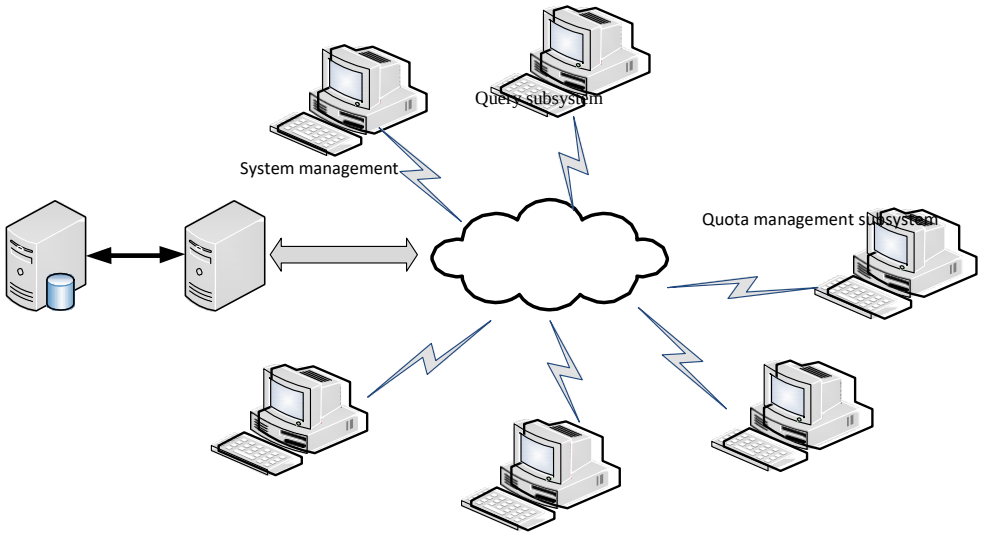
7. The tool should also project the contract price, payment certified, payment done. The tool should have authorization limits so that data cannot be viewed by all and levels of viewing have to be established. It should also reflect Environmental and Social Management Framework (ESMF) point like adherence, complaints and resolutions for each of the sub project. If necessary, access code / passwords can be provided.

8. Overall Financial Progress (Package wise, Site wise, Project wise etc.) including submission of Bills, payment etc. must also be available in the same platform.

9. The software should be capable of providing complete overview of the project online to the users which are provided with access to the same. The tool should be pre-approved by the Client.

10.The page should be updated by PMC with inputs from respective AEGCL field office/Turnkey contractor/ as per visit PMC support staff at field whichever is most suitable.
11. The MIS should have the ability to send SMS alerts to concerned officials at defined milestones for actions to be taken (e.g. payments) and deviations from schedules (e.g. time overrun in control building erection).
12. Engagement of any Separate IT/MIS expert if required by PMC should be within the quoted price of the Consultant.

Below schematic may be referred for the MIS requirement:



iv. Detailed Outputs of the assignment

4.1 Key Timelines

The timeline for the project is 60 months.

4.2 Team Composition and Qualification Requirements for the Key Experts

Qualification of the Firm: Extra High Voltage transmission engineering including survey, design and supervision of new installations (transmission line systems and AIS & GIS substations from voltage level 132kV - 220KV). The firm shall have the international and national consultants with expertise in design and supervision work at 132kV - 220KV voltage level.

Qualification Requirements for the Key Experts:

(i) Team Leader (Key Expert, Position-K1):

The Team Leader shall hold an engineering degree in Electrical/Civil/Mechanical (preferably Electrical) and shall have professional work record of not less than 15 years in planning, designing, managing, quality assurance and supervising Substation and transmission line project with voltage levels covering 220kV or above.

The expert should have the experience of working as **a Team Leader** in any project under any Power utility with the financial assistance of International Funding Institutions. The total project cost of such project should be at least 100MUSD having Project Duration of minimum 3 years.

The Team Leader should be well conversant with the Structural design of Transmission Line & Monopole Tower, Structural Design Software, Pile foundation for tower in river. He/she should have good experience in laying of Underground cables and stringing of High Temperature Low Sag (HTLS) conductor up to the voltage level of 220KV.

Regional experience of Team Leader will be added advantage.

The Team Leader shall have an excellent command of English both written and orally and a proven record in team leadership as well as in management of projects with a similar scale.

Responsibility of Team Leader/Transmission Line Expert shall be the following but not limited to:

(a) **Team Leadership:** Overall responsibility of supervising the team of consultants, coordinating and communicating with AEGCL and preparing regular project reports;

(b) **Project Preparation:** Review the project management (including administration) procedures of the AEGCL for the implementation of sub-projects and, as appropriate recommend changes and or new procedures in keeping with AIIB and modern international best practices;

(c) **Preparation of sub-projects:** Advise and assist, at a project management level, in their view of each sub-project (network studies, investigations, designs, specifications and drawings, contract conditions, commercial conditions, Bill of Quantities, quality control of equipment and works) to properly define the work;

(d) **Procurement:** Review existing tender documents and assist in preparation of new tender documents, as required, in accordance with AIIB's standard procedures and guidelines, with special attention to international best practices in quality of material, equipment and works. Assist with advertisement, pre bid meetings, evaluation of technical and financial bids, preparation of bid evaluation reports, contract negotiations and preparation of documents for contract signing, and advise on submission of documents to AIIB for review and approval;

(e) **Contract Management:** Advise and assist AEGCL in management of the contracts for works, and plant and equipment. Advise on quality control programs, check design details of plant and civil construction (submitted by contractors) and advise on acceptability of such designs, suggest corrective measures to be undertaken, and ensure revisions are implemented;

(f) **Design Checking and Clarification:** Review of Single Line Diagram, Substation Layout, Substation equipment drawings, Transmission Line equipment drawings and recommendation for approval; He/she will also ensure implementation of quality assurance plan while execution of all the components of the project.

(g) **Project Scheduling and Monitoring:** Review project schedules submitted by the contractors, analyze progress and suggest corrective measures at management level to ensure project progress on the schedule agreed with the Contractors;

(h) **Monitoring Project Disbursement:** Prepare quarterly updates and comparative reports on overall project disbursement and advise AEGCL on rescheduling of budget against subprojects.

(ii) Substation Expert (Key Expert, Position-K2):

The Substation Expert shall be an Electrical engineer and shall have professional work record of not less than 15 years in planning, designing, managing, quality assurance and supervising substations works of both Air Insulated and Gas Insulated Substations from 132kV to 400kV Voltage level. The substation expert should be well acquainted and have good proficiency in the international modern practices and technologies adopting specially in the construction of Gas Insulated Substations. Knowledge of handling modern software related to Substations will be added advantage. The Substation Expert shall have experience with EAP funded projects and the respective tender and implementation guidelines. He must ensure adherence of all safety norms as per the safety regulation of construction of substation during the whole construction cycle. Moreover, the expert must have experience of working under PMC services/consultant for a period of minimum **5** years.

He/she will undertake the following, but not limited to:

(a) Assist Team Leader, in monitoring, supervising, coordinating overall activities of other experts in the team.

(b) In coordination with other team members help team leader to develop a detailed work plan and implementation schedule

(c) Conduct site visit to the Project locations.

(d) Assist Team Leader in the review of the tender documents, particularly consider completeness of the scope of work, coherence between sections, constructability, cost, risk/shared risk and consequences thereof, and compliance with AIIB's procurement procedures and guidelines.

(e) Assist AEGCL during the tendering period, including but not limited to organization of site visits, assistance during the pre-bid meeting, clarification of tender documents, bid opening and bid evaluation.

(f) Assist AEGCL in preparation of Contract Documents.

(g) Assist AEGCL in supervision during the Implementation stage and provide guidance to the contractors so as to conform to the specifications and implementation of quality assurance plan.

(h) Identify any problem during project implementation, propose remedial actions and promptly report any outstanding issues to AEGCL;

(i) Advise AEGCL on any contractual or technical disputes that may arise between contractor and AEGCL during the implementation phase.

(j) Preparing overall disbursement plan, monitoring cost and project accounts.

(k) Undertake project monitoring and evaluation during the project implementation.

(l) Provide input on the field of responsibility to required monthly, quarterly progress reports and other reports as may be required.

(iii) Sr. Environmental Safeguard Expert (Key Expert, Position-K3):

The Expert shall have a Master's degree in Environmental Science/Environmental Management/Environmental Engineering or in similar field with 10 years of demonstrated experience in preparation and implementation of EIA/ESIAs and EMP/ESMPs for assessment, management and monitoring environmental and social risks and impacts in linear Infrastructure projects. The expert should be conversant with the Environmental Codes of Practice in the context of Govt of India. The expert should also be conversant with the environmental and social policies of multilateral development banks (MDBs). Regional Experience and experience in overseeing Energy Infrastructure projects will be an added advantage. He/she must have experience of working in at least two Externally Aided Projects for overall period of minimum **5** years. Moreover, the expert must have experience of working under PMC services/consultant for a period of minimum **5** years.

The Expert will assist in the following, but not limited to:

(a) Review the ESMPF report prepared for the project to understand the background, environmental issues, proposed project activities, mitigation and monitoring requirements of the project

(b) Prepare the necessary environmental documents for each sub-project and take necessary procedures in accordance with the ESMPF, including but not limited to, preparing the ESIAs, and/or ESMPs in accordance with AIIB's E&S Policy (ESP) wherever required prior to contractors' mobilization

(c) Analyze siting transmission lines and substations in terms of their environmental impacts and benefits. The analyses should include the siting process, based on the description of the selected route and guided by the site selection guideline of ESMPF

(d) Identify project stakeholders and hold consultations with them as per the public consultation framework of ESMPF, to delineate the appropriate boundaries of the environmental assessment and to screen potential adverse environmental issues

(e) Identify potential environmental issues of transmission lines in terms of their nature, magnitude, extent and location and timing and duration. These impacts may relate to the sub-project design stage, construction stage and/or the sub-project operation and decommissioning stage. Based on impact prediction methods and as the result of public consultations, the Expert will screen adverse environmental impacts for inclusion in mitigation measures and ESMPs. The Generic ESMP of ESMPF will be referred to if applicable

(f) Support AEGCL to prepare documents and fulfil steps required to process all environment safeguards related clearances that may be required including but not limited to wildlife and forest clearances (including preparation of Biodiversity Assessment Plans, if required), tree cutting permits etc. that are to be obtained/processed by AEGCL

(g) Visit each sub-project area and consult AEGCL and other line departments to establish the baseline conditions in terms of physical chemical and biological environment conditions in the

sub-project area. Ensure the primary baseline data of environmental elements are in place prior to mobilization

(h) Assist AEGCL to establish a multi-layer GRM including GRC to resolve the Grievances of environment, health and safety matters in a timely manner

(i) Conduct a Training Need Assessment and then conduct training workshops for field level AEGCL staff and contractors on the requirements and implementation of the ESIAs/ESMPs on half yearly basis. Orientation will be conducted prior to mobilization

(j) Ensure that the Contactors obtain all necessary clearances, consents & permissions (including but not limited to CTE, CTO, Hazardous wastes handling, labour licenses etc.) from ASPCB, Forests and other line departments

(k) Propose appropriate mitigation measures for the adverse environmental impacts, including conditions set out in relevant permits and clearances

(l) During the preparation of bidding documents, clearly include environmental responsibilities as explained in the ESIAs/ESMPs as “Environmental Contract Specifications (ECS)”

(m) Assist AEGCL to implement the ESMPs and solve environmental issues that may arise during the construction stage

(n) Based on review of the ESMPF & the Environmental Monitoring Plan (EMoP), make necessary amendments if any issues are not covered and ensure that the location and timing of checking / testing all environmental parameters are in accordance with the site conditions

(o) Prepare or review (if already existing) monitoring checklists for weekly, fortnightly and monthly checklists (as necessary) for monitoring implementation of the ESIAs/ESMPs by the contractor

(p) Prepare or review (if already existing) reporting formats for monthly, quarterly, biannual and annual monitoring reports of the contractor

(q) Assist AEGCL in implementation & Monitoring of mitigation measures and monitoring program as guided by the ESMPF and as detailed in the ESIAs/ESMPs for each sub-project on monthly basis

(r) Prepare monthly, quarterly, biannual & annual Environmental Monitoring reports based on site visits and completed checklists for submission to the AEGCL and AIIB during project construction in compliance with AIIB’s ESP, using the template in ESMPF. The monthly report submitted to AEGCL shall report all violations of environmental matters (including but not limited to environment related grievances received, safety & health of the labourers and locals, and the compliance conditions of consents & permissions) and measures taken to restore compliance

(s) Assist AEGCL in identifying training needs for PMU/PIU and corporate staff and identify suitable trainings on environmental issues including on-site trainings in other similar on-going projects. In doing so assist AEGCL on capacity building.

(t) Conduct on the job or site based practical training for the contractors’ environmental and safety staff while implementing the ESMP during each and every site visit.

(u) Maintain a copy of all environment related statutory clearances required for implementation ESIAs/ESMPs for all sub projects

(v) Preparation of mid-term evaluation & completion report at the end of the project on the implementation activities of the ESIAs/ESMPs. The reports shall document with photographs all good practices adopted in the sub projects (so that such practices can be incorporated in future projects), trainings and workshops conducted, and the improvements noticed after training, consultations and analysis of grievances addressal.

(w) Facilitate consultations between the contractor and local people or other relevant agencies where necessary and assist AEGCL in conflict resolution on environmental issues during executing stage of the project. Maintain proper records of all environment related grievances & consultations and details on how they were addressed

(x) Sr. Environmental Safeguard Expert shall adhere to the provisions provided in the approved Generic ESMP for this Project. The overall implementation of ESMP will be with the Sr. Environment Safeguard Expert.

(iv) Sr. Social Safeguard Expert (Key Expert, Position-K4):

The Expert shall have a Master's degree in Social Science / Social Work / Social Management or similar field with 10 years of demonstrated experience in preparation and implementation of social assessments and management plans, resettlement action plan/Tribal Development Plan, Livelihood assessment and restoration plan etc. in linear Infrastructure projects. The expert should also be conversant with the social policies of GoI and Multilateral Development Banks (MDBs). Regional Experience and experience in overseeing Energy Infrastructure projects will be an added advantage. He/she must have experience of working in at least two Externally Aided Projects for overall period of minimum **5** years. Moreover, the expert must have experience of working under PMC services/consultant for a period of minimum **5** years.

The Expert will assist in the following, but not limited to:

(a) Review the ESMPF and prepare the necessary social documents for each sub-project in accordance with the ESMPF, including but not limited to, ESIAs and/or site specific ESMPs, Resettlement Plans (RPs) and Tribal Peoples Plans (TPPs) wherever required prior to contractors' mobilization

(b) Visit each sub-project area and consult AEGCL and other line departments to establish the baseline conditions in terms of socio-economic in the sub-project area.

(c) Ensure that the social, resettlement and stakeholder engagement issues are properly addressed as per the guidelines given in ESMPF and in compliance with AIIB's ESP and ESSs

(d) Assist AEGCL in implementation of the mitigation measures and monitoring program as detailed in the ESIA/ESMP, RP and TPP if applicable for each sub-project

(e) Report the progress of implementation of the ESIA/ESMP, RP and TPP if applicable for each sub-project to AEGCL twice a year. Report any violation of standard social safeguards and measures taken to restore compliance twice a year to AEGCL

(f) Prepare monitoring checklists for weekly, fortnightly and monthly checklists (as necessary) for monitoring & implementation of the ESIAs/ESMPs by the contractor

(g) Prepare or review (if already existing) reporting formats for monthly, quarterly, biannual and annual monitoring reports. Also develop specific monitoring indicators and templates for undertaking monitoring of RP. Provide limited support for their introduction in the Project.

(h) Analyze siting of transmission lines and substations in terms of their social impacts and benefits. The analyses should include the siting process, based on the description of the selected route

(i) The consultant will identify project stakeholders and hold consultations with them as per the public consultation framework of the ESMPF, to delineate the appropriate boundaries of the potential adverse social issues; Special arrangements shall be made to accommodate for gender-inclusive engagements and participation of vulnerable people. He/she shall also ensure implementation of the social development and gender relevant features included in the design of the project, including monitoring of occupational and community health and safety, community awareness activities, compliance of core labour standards by the civil works contractors (if any), prevention of Gender-based violence (GBV) and Sexual exploitation (SE) risks.

(j) The Consultants will identify potential social issues of transmission lines in terms of their nature, magnitude, extent and location, and timing and duration. These impacts may relate to the project design stage, construction stage and/or the project operation and decommissioning stage. Based on impact prediction methods and as the result of public consultations, the consultant will screen adverse social impacts for inclusion in mitigation measures and social management plan

(k) The consultant will propose appropriate mitigation measures for the adverse and enhancement of positive social impacts

(l) Facilitate consultations between the contractor and local people or other relevant agencies where necessary in conflict resolution for social issues during executing stage. Maintain proper records of all social related grievances & consultations and details on how they were addressed.

(m) Facilitate the functioning of the Grievance Redress mechanism and maintain proper records of all social related grievances & consultations and details on how they were addressed

(n) Assist AEGCL with social issues that may arise during the construction stage, such as labour influx.

(o) Provide monthly, quarterly, semi-annual and annual reports on resettlement implementation including close monitoring of resettlement implementation of Indigenous Peoples (if necessary), and provide updates on the schedule and financial aspects of resettlement to the team based on site visits and completed checklists for submission to the AEGCL and AIIB in compliance with AIIB's ESP during project construction, using the template in ESMPF. The monthly report submitted to AEGCL shall include all violations of social matters

(p) Prepare the due diligence reports on resettlement implementation and livelihood restoration as needed for processing of subsequent loans

(q) Provide training on AIIB's ESP,ESSs and E&S instruments as necessary

(r) Preparation of mid-term evaluation & completion report at the end of the project on the implementation activities of the ESIAs/ESMPs, RAPs and TPPs if applicable. The reports shall document with photographs all good practices adopted in the sub projects (so that such practices can be incorporated in future projects), trainings and workshops conducted, and the improvements noticed after training, consultations and analysis of grievances redressal.

(r) Sr. Social Safeguard Expert shall adhere to the provisions provided in the approved Generic ESMP provided as an attachment to this TOR for this Project. The overall implementation of ESMP will be with the Sr. Social Safeguard Expert.

v) Occupational, Health, Safety Officer (OHSO) (Non-Key Expert):

The OHSO Expert shall hold Degree / P.G. Diploma in Electrical / Occupational Health and Safety/ Industrial safety or equivalent from any recognized University/Institution with minimum 5 years of relevant experience in OHS management. The officer should be well conversant with the safety policies and regulations adopted by the MDB funded linear infrastructure projects and should have minimum 3 years' experience. Moreover, the expert having experience as consultant will be an added advantage.

The OHS Officer will assist in the following, but not limited to:

a) Prepare OHS documentation, including policies, procedures, and incident reports.
b) Conduct on-site inspections to identify potential hazards and assess the effectiveness of current safety measures.
c) Provide recommendations for improvements in OHS practices, including the introduction of new safety protocols and the enhancement of existing ones.
d) Collaborate with relevant departments to ensure the integration of OHS measures into daily operations.
e) Design and deliver training programs on OHS awareness and emergency response for employees and management.
f) Assist in the development of emergency evacuation plans and procedures.
g) Establish a robust system for incident reporting and investigation.
h) To ensure the safety and well-being of all personnel involved in the project by implementing robust occupational health and safety measures.
i) Conducting thorough risk assessments at project sites.
j) The Occupational Health and Safety Officer will provide regular reports on safety performance, incidents, and compliance status.

vi) OPGW / SCADA Engineer (Non Key Expert,):

The OPGW Engineer shall hold an engineering degree (preferably in electronics and communication field) and shall have professional work record of not less than 10 years in planning, designing, managing, quality assurance and supervising OPGW network. Moreover, the expert must have experience of working under under PMC services/consultant for a period of minimum 3 years.

The OPGW Engineer shall have experience of installing the OPGW in "Live Line Condition". Experience of stringing OPGW in **river crossing** is mandatory.

The OPGW Engineer will undertake the following, but not limited to, in coordination with the Team Leader:

(a) Assist Team Leader in review of design and drawings related to OPGW and SCADA;

(b) Assist Team Leader, in construction supervision and progress monitoring, of the OPGW and SCADA works;

(c) Assist Team Leader in all other activities as entrusted by Team Leader.

(d) Ensure adherence of all safety norms as per the safety regulation during stringing of OPGW in live line condition.

(e) Assist AEGCL for factory inspection of OPGW / SCADA and associated accessories and provide recommendation for issuance of dispatch clearance.

vii) Substation Engineer (Non Key Expert):

The Substation Engineers shall be an electrical engineer having minimum of bachelor degree and shall have an professional work record of not less than 10 years in planning, designing, managing, quality assurance and supervising substations works with voltage levels of minimum 220kV. Moreover, the expert must have experience of working under PMC services/consultant for a period of minimum 3 years.

The Substation Engineers shall possess experience in both Air Insulated Substation and Gas Insulated Substation of minimum 220kV.

The Substation Engineers will undertake, but not limited to, the following:

(a) Assist Substation Expert (Key Expert) in review of design and drawings related to Substations;

(b) Assist Substation Expert (Key Expert), in construction supervision and progress monitoring, of the Substation works;

(c) Assist Team Leader in all other activities as entrusted by Team Leader.

(d) Ensure adherence of all safety norms as per the safety regulation of construction of Substation during the whole construction cycle.

(e) Assist AEGCL for factory inspection of Substation Equipment and provide recommendation for issuance of dispatch clearance of Substation Equipment.

viii) Procurement and Contract Expert (Non Key Expert) :

The Procurement and Contract Expert shall hold a post graduate degree in Engineering and shall have an professional work record of not less than 10 years in managing procurement and contract management for works of similar nature with voltage levels covering 132kV upward including 400kV. Moreover, the expert must have experience of working under under PMC services/consultant for a period of minimum 3 years

The Procurement and Contract expert shall assist the Team Leader in preparation of Bid Documents, Contract Documents and Contract Management.

ix) Civil Foundation and Building Expert (Non Key Expert):

The engineer should preferably have a bachelor or higher degree in civil engineering and preferably minimum 10 years of relevant experience in designing, quality monitoring and supervising of transmission line and Substations civil foundation works. with voltage levels covering 132kV and upward up to 220kV. Moreover, the expert must have experience of working under PMC services/consultant for a period of minimum 3 years.

The expert shall have an understanding of High Voltage Transmission line clearances and safety considerations and knowledge on AutoCAD or similar software. He/she should be well conversant with methods and tools involved in the construction or repair of buildings or other structures and specially the different types of foundation involves in transmission lines.

Civil Foundation and Building Expert will undertake the following, but not limited to:

(a) Planning, review of design and overseeing the construction and maintenance of building structures facilities for the substations, transmission line tower foundations & substation

equipment foundations taking into consideration, but not limited to, seismic factors and other prevailing safety norms;

(b) Conduct site visits during construction phase to verify quality of civil works, identify any problems during project implementation, propose remedial actions and promptly report any outstanding issues to AEGCL

(c) Advisee AEGCL on any contractual or technical disputes that may arise between the contractor and AEGCL related to civil construction during the implementation phase.

(d) Assist AEGCL to form policies, procedures to promote effective local security operations for the protection of people, data, property and institutions.

x) **Structural Engineer *(Non Key Expert):***

The engineer should preferably have a bachelor or higher degree in civil or structural engineering. He/she should have minimum 10 years of relevant experience in designing, quality monitoring and supervising of structures used in transmission line and Substations of voltage levels covering 132kV and up to 400kV. Moreover, the expert must have experience of working under under PMC services/consultant for a period of minimum 3 years.

Steel Structural Engineer will undertake the following, but not limited to:

(a) Planning, review of design and overseeing the construction and maintenance of structural works for the substations, transmission line tower & substation equipment taking into consideration, but not limited to, seismic factors and other prevailing safety norms;

(b) Conduct site visits during construction phase to verify quality of structural works, identify any problems during project implementation, propose remedial actions and promptly report any outstanding issues to AEGCL

(c) Assist AEGCL for factory inspection of steel structures and provide recommendation for issuance of dispatch clearance of steel structure.

xi) Financial Expert (Non Key Expert):

He/ She shall possess minimum Master degree in finance / Commerce or ICWA degree or MBA degree or equivalent in Finance. He/ She must have a minimum of 10 Years of Experience and at least 5 years in the financial analysis field. He/ She shall be conversant on project finance and able to carry out financial modelling and analysis. He/ She shall have sound previous experience in performing financial analysis and planning functions and activities in India's public sector, preferably in relation to Power project and/or asset management financing matters. Experience in EAP funded project will be preferable. Moreover, the expert must have experience of working under under PMC services/consultant for a period of minimum 3 years

The Financial Expert shall perform the following but not limited to:

a) The Financial Expert will liaise with AEGCL finance / accounts department and Bank to ensure that the audit reports as well as financial progress report are submitted in time.

b) He/ She should assist AEGCL in preparation and submission of quarterly disbursement report.

c) He/she shall support AEGCL in the financial contractual closure and in the finalization of the Project Completion Report.

4.3 Reporting Requirements and Time Schedule for Deliverables:

Report/Document	Number of Copies	Delivery Schedule
Inception Report	2	Within 1 month after mobilization
Monthly Progress Report	3	Within 10 working days after end of each month
Quarterly Progress Report	3	Within 30 working days after end of each quarter.
• Social and Environmental Documents for each sub-project (Separately for Substation and Transmission Line) as outlined in the ESMPF and other E&S documents • Subproject Specific ESIA's • RP – subproject Specific • Stakeholder Engagement Plan • GRM • Gender Action Plan and Gender Based Violence prevention plan • Labor management plan • Indigenous people development plan • Subproject Specific Health and Safety Management Plan	3	Prior to Contractors' Mobilization and get cleared by AIIB
Training Need Assessment Report and Capacity Development Plan	2	Within 3 Weeks from commencement of Project
E&S: Final route survey report with coordinates and pictures.	2	Within 8 weeks from the date of completion of survey.
E&S: Draft socioeconomic census, and environmental screening survey report.	2	Within 8 weeks from finalization of route for each subproject/transmission line
E&S: Stakeholders/focus group meetings report (quarterly). The report shall contain list of participants along with venue, date, time, topics of discussion and outcome of the meeting	2	Within 10 days after end of Each Quarter
E&S: Safeguard, GAP training to AEGCL and contractors.	-	Within 10 days after end of Each Quarter

Quarterly and Bi-annual Social & Environmental Monitoring Reports and Health & Safety Report	3	Quarterly – Within 10 days after end of each quarter. Biannual - Within 15 working days after end of each 6 months.
Reviews of Design & Drawings		Within 14 days for each design & drawings.
Any Other reports required for the execution of the Project		As and when required by the Client.
Draft Completion Report	2	Within 6 weeks after completion of final package.
Final Completion Report	2	Upon completion of last project, within 4 weeks after receiving and addressing comments by AEGCL on draft Completion Report.

The above number of copies shown is indicative and illustrates the number of hard copies. The exact number of hard copies needed will be defined at a later stage. All these reports will have to be sent by email to AEGCL and the financing agency.

4.4 Clients Input:

(i) Consultant shall have to arrange their own Office accommodation for the Team Leader and other project staff. The office accommodation shall be located in Guwahati within a radius of not more than 2 km from AEGCL's HQ.

(ii) The Consultant should make their own arrangement for office furniture, equipment, stationeries, photocopier, printer communication facilities like telephone, internet connection etc. including its maintenance thereof. Vehicle for transportation to Project site and to & from AEGCL's HQ shall be arrange by the consultant of its own.

(iii) Monthly rent for the Office Accommodation, furniture, equipment, stationeries, photocopier, printer communication facilities like telephone, internet connection etc. including its maintenance there to and vehicle shall be the responsibility of the Consultant Firm.

4.5 Team Composition: The consulting firm (PMC) will be provide consulting services for Project Implementation Support, to develop AEGCL's institutional capacity as required for project planning and management and to develop and implement a comprehensive project management plan to ensure the most efficient, timely and economical implementation of each project. The plan should take into account the engineering technology required, the resources and costs involved, and the critical time frame for the completion of each project. The PMC will be recruited using the quality and cost based selection (QCBS) method. The proposal will be full technical proposal. The team composition of the experts along with their estimated person months is shown in the table below:

The following will be the key personnel that the Consultant shall provide[1]:

Position	Expert Type	No. of Expert	Person Month	Total Person Month
1. Team Leader – K1	Key Expert	1	60	60
2. Substation Expert – K2	Key Expert	1	60	60
3. Sr. Environmental Safeguard Expert – K3	Key Expert	1	60	60
4. Sr Social Safeguard Expert – K4	Key Expert	1	60	60
Total person month of Key Expert				**240**
5. Transmission Line Engineer	Non Key	2	60	120
6. Substation Engineer	Non Key	2	60	120
7. Occupational, Health, Safety Officer	Non Key	1	60	60
8. OPGW / SCADA Engineer	Non Key	1	36	36
9. Procurement and Contract Specialist	Non Key	1	60	60
10. Civil Expert	Non Key	2	60	120
11. Structural Expert	Non Key	1	50	50
12. Financial expert	Non Key	1	36	36
	Key Expert	**4**		**602**
Total:	**Non Key**	**11**		**852**

In addition to above, the following **support staff** shall be provided by the Consultant for a period of **60 months.**

Position	Type	No.	Person Month	Total Person Month
1. Electrical Engineer	Support Staff	7	60	420
2. Civil Engineer/Structural Engineer	Support Staff	7	60	420
3. Communication Engineer	Support Staff	3	60	180
4. Social Investigation Officer	Support Staff	3	60	180
5. Environmental Investigation Officer	Support Staff	3	60	180
6. Project Accountant	Support Staff	1	60	60
7. Office Manager	Support Staff	1	60	60
8. Office Assistant	Support Staff	1	60	60
Total:		24		1560

Note:

The CV's of the Non Key Experts will have to be submitted by the Consultant in its Technical Proposal. The CV's of the Non Key Experts shall demonstrate the minimum qualifying criteria mentioned in their respective positions. During evaluation if it is observed that the minimum criteria of Non Key Expert is not met as specified in the respective position, the proposal of Consultant may be considered non-responsive.

The Support Staff CVs will not be evaluated during the Technical evaluation. However, the cost of the Support Staff shall be evaluated during the financial evaluation. The payment will be based on the actual man-month used for the Expert staff and the support staff.

v. Duration and Location of the Services

Duration of the Project : **60 months**

Location of the Services : **Assam, India**