Terms of Reference

1. Objective of theServices

The Services aim at providing high quality professional services to assist NEA in supervising and implementing the Project and to ensure that the Project will be completed according the schedule and that the completed Project will deliver the quality, capacity, performance, reliability and economic life as required by the Employer's requirement defined in the turn key contracts with theContractors.

2. Scope of the Services

The PSC is expected to deliver the Servicesfor:

a) Review designs and drawings submittals of the Contractor under the Contract packages and recommend for optimized designs;

b) Administer Construction supervision and Code of Conduct for Contractors, and assist in Contract management and administration under Contract packages;

c) Implementation of Environmental and Social requirements for all subprojects in accordance with ESMPF;

d) Capacity building of NEA staff.

3. Detailed Tasks

The PSC's detailed tasks are asfollows:

a) Project supervision

(i) For all contracts of the Project, the PSC shall review of procurement documents and assist PIU in procurement process.

(ii) For all contracts of the Project, the PSC shall review and advise the NEA on approval of Contractor's detailed design in accordance with the Employer's requirements and technical specifications in the Contract. The design optimization shall be of prime focus during such review.

(iii) For all contracts of the Project, the PSC shall provide oversight of all aspects of the constructionin order to assure that it is conducted properly in accordance with the Contract. The PSC shall produce progress reports of the construction works as per the Reporting Requirements.

(iv) To ensure quality in project implementation, the PSC shall develop and implement a Quality Assurance Program (QAP) as mentioned in the bid-documents. The QAP shall ensure that the plants and equipment supplied and installed meet the performance standards and technical characteristics of the technical specifications. The QAP shall cover all aspects of the project implementation including review and approval of design; quality of works during construction; monitoring schedule; inspection of materials before shipment(including type tests, and acceptance tests), upon arrival and upon erection; review of documents to assure quality of delivered goods and comparison of as-built drawings to design. Furthermore, shortcomings in any of the aforementioned areas shall be addressed adequately byQAP.

(v) The PSC shall assist DSUEP to implement and manage the overall contract of the Project including but not limited to recommendation on Bill Verification, Extension of Time, Variation, etc.

(vi) The PSC shall ensure if the Contract execution is in accordance with the Contract Schedule, NEA's requirements and technical specifications as specified in the Contract Agreement, and advise NEA to take necessary steps in due course.

(vii) For all contracts for the Project, the PSC shall supervise the testing and commissioning. All components of the lines, substations, SCADA, communications and protection will be subject to an acceptance test to demonstrate their capability to meet warranted design criteria. For each component subject to test, the Consultant will review the Contractor's test procedures for compliance with manufacturers' requirements and design criteria. The Consultant shall witness the tests and review the test results. If test results are not satisfactory, the consultant shall ensure that any lack of compliance is addressed and that the equipment and overall systems shall be re-tested until compliant results are achieved. During the commissioning phase, the Consultant shall provide training on the testing and commissioning of all aspects of the project. The Consultant shall assist NEA in this phase of the project and coordinate with the Contractor in addressing any issues with the project components that are unsatisfactory. At the end of this period, and when all acceptance tests have been completed to the Consultant's satisfaction, the Consultant will advise NEA that the construction is complete and all the project components are ready to be declared fully operational. The Consultant shall also prepare and recommend a provisional taking over certificate whenever due for the works or part of the works and alert NEA of work deficiencies and outstanding items, if any. The Consultant shall also confirm the remedial measures taken by the Contractor, and recommend a final taking over certificate after expiry of the warrantyperiod.

(viii) The PSC shall hand over the completed Project including issuance of completion certificates, provisional acceptance and final acceptance certificates toNEA.

b) Implementation of Environmental and Social Safeguards

The PSC shall carefully study all the Environment and Social Management Plan (ESMP), Initial Environment Examination (IEE), Indigenous People Development Plan (IPDP), Resettlement Action Plan (RAP), and other relevant E&S documents prepared for all the subprojects, and assure the implementation of all the prevention/remedial measures proposed in those reports. A summary of the requirements is given in the table below:

S.N.	Name of sub-project	Resettlement Plan	Free Prior and Informed Consent	Indigenous Peoples Development Plan	Environmental and Social Management Plan	Initial Environmental Examination (Nepal Gov. Req.)	Brief Environmental Study (Nepal Gov. Req.)
1	Gadhawa, Dang	Not Req.	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
2	Laxmana, Bardia	**Req.**	Not Req.	Not Req.	**Req.**	Not Req.	**Req.**
3	Khajura, Banke	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	Not Req.
4	Nagma, Kalikot	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	Not Req.
5	Badki, Jumla	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	Not Req.
6	Raskot, Kalikot	Not Req.	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
7	Odaltal, Surkhet	Not Req.	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
8	Budhebhapar, Surkhet	Not Req.	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
9	Pipledanda, Salyan	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	**Req.**
10	Badaban, Jajarkot	Not Req.	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
11	Samaila, Jajarkot	**Req.**	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
12	Vampuchaur, Rukum West	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	**Req.**
13	Ghartigaun, Rolpa	**Req.**	Not Req.	Not Req.	**Req.**	Not Req.	Not Req.
14	Makaundanda, Dang	Not Req.	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
15	Hapur, Dang	Not Req.	Not Req.	Not Req.	**Req.**	**Req.**	Not Req.
16	Mangri, Mugu	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	**Req.**
17	Simikot, Humla	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	**Req.**
18	Khatyad, Mugu	Not Req.	Not Req.	Not Req.	**Req.**	Not Req.	**Req.**
* The E&S criteria for all the above sub-projects are subjected to change until Request for Proposal (RfP) is issued.							

c) Capacity Building of NEAstaff

The PSC shall perform a needs assessment and develop a training program for NEA staff working on the Project as PSC's counterpart staff. The training program shall include poles and tower foundation design, 33 kV and higher voltage class substation design, protection system coordination and distribution system planning and loss reduction techniques. The NEA counterpart staff will assist the consultant to the extent possible during all phases of the project. All international experts of PSC are expected to work closely with the NEA staff and shall ensure that the NEA staff persons achieve higher skill levels as a result of their involvement.Additional Details of capacity building work will be as per section 7 of the Terms of Reference.

4. Implementation Arrangement

4.1. ThePSC shall report to the Project Manager of Distribution System Upgrade and Expansion Project (DSUEP), who reports to the Deputy Managing Director (DMD) of Distribution and Consumer Services Directorate (DCSD), who then reports directly to the Managing Director (MD) of NEA. The PSC shall work closely with counterpart staffs of DCSD and NEA's specialized departments if necessary.

4.2. The Client work in closed coordination with the funding agency of the project. The funding agency for this project is Asian Infrastructure Investment Bank (AIIB).

4.3. The PSC is expected to commence the service in December 2021, and the duration of the expected service will be twenty-four (24) months from December 2021 – November 2023. The selection process will be Quality and Cost Based (QCB) Selection.

5. Expertise and Man-Month Requirements

S.N.	Position	Man-Months		
		Home	Field	Total
A.	INTERNATIONAL EXPERTS			
	Team Leader and Transmission/Distribution Line Engineer (Electrical)	1.00	11.00	12.00
	Line and Substation Engineer (Civil Structure)	1.00	6.00	7.00
	Substation Engineer (Electrical)	0.60	1.00	1.60
	Distribution System Engineer	1.00	8.00	9.00
	Environmental Safeguard Specialist	1.00	4.00	5.00
	Social Safeguard Specialist	1.00	4.00	5.00
A.	INTERNATIONAL EXPERTS TOTAL	**5.6**	**34.0**	**39.60**
B.	NATIONAL EXPERTS			
	Tr./Dr. Line and Substation Engineer (Civil Structure)	2.50	6.50	9.00
	Substation Engineer (Electrical)	0.90	1.00	1.90
	Distribution System Engineer (2 Nos.)	5.32	18.98	24.30
	Environmental Safeguard Specialist	1.70	8.00	9.70
	Social Safeguard Specialist	1.70	8.00	9.70
	Technical Supervisors (2 Nos.) (Electrical)	1.30	37.00	38.30
	Civil Supervisor (18 Nos.) (Civil)	-	216.50	216.50
	Community Relations Manager (2 Nos.)	1.30	35.70	37.00
B.	NATIONAL EXPERTS TOTAL	**14.7**	**331.7**	**346.40**
	TOTAL (A+B)	**20.4**	**365.7**	**386.00**

Note:

- Both National Experts, and International Experts are considered **"Key Experts"**.
- For International Experts: **"Home"** refers to home country of the experts, **"Field"** refers to office or sites in Nepal.
- For National Experts: **"Home"** refers to Office of the experts, **"Field"** refers to sites in Nepal.

5.1. It is estimated that in total 386 man-months of Services are required with 39.60man-months from international experts and 346.40 man-months by national experts. Details on expertise and man-monthrequirements are in the above table. The international expertise should be provided by a consulting firm specializing in designing and supervising the construction of transmission/sub-transmission lines, and substations in partnership with national firm(s) and/or individual national consultants inNepal.

6. Responsibilities of the Experts

All national and international experts indicated in the above table are considered as Key experts. National consultants play important role in the PSC team with local knowledge of dealing with social, technical and geographical issues arising from the Project. Each national expert will perform the same or similar duties as his/her counterpart in the international team in his/her respective field.

The main responsibilities of each expert are highlighted, but not limited to, asfollows:

I. Team Leader and Transmission/Distribution Line Engineer (Electrical)

(i) As the Team Leader, the expert is responsiblefor:

- Leading and managing the entire team including both international and national experts and act as the team's point of contact with NEA andAIIB.
- Preparing or leading the team to prepare all the reports as listed in the Reporting Requirements.
- Handling contract administration matters related to the PSCcontract.
- Assisting DSUEP/NEA in administration of all the Contracts for the Project.
- Reviewing the Contractors' Health and SafetyPlans, Code of Conduct, and Gender Based Violence (GBV).
- Monitoring project progress against plan, report on progress, and propose remedial measures asnecessary.
- Reviewing the Contractor's claims for extension of time or additional costs; and preparing variation instructions and cost review; certifying invoices/volume of works completed and recommend forpayment.
- Providing technical support to NEA in settlement of claims and disputes arising from the Contracts.

(ii) The Team Leader must also be an expert of distribution/transmission electrical engineering. As a distribution/transmission electrical engineer, he/she is responsiblefor:

- Providing inputs and advice to the project team and to NEA on sub-transmission & distribution line and substation technicalmatters.
- Developing and maintaining a project quality assurance plan for NEA; and ensuring that works are executed in line with the plan and project requirements.
- Checking the drawings and technical designs submitted by the Contractors and recommending them to NEA forapproval.
- Reviewing, checking and certifying suppliers' equipment design, and approve the technicaldocuments.
- Witness and certifying main equipment shopinspections.
- Assisting NEA with inspections and certifications of manufactured items prior to shipmentand uponreceipt.
- Recommending the acceptability of designs and works carried out by the Contractors and suggest corrective measures to beundertaken.
- Supervising the installation, testing and commissioning of the sub-transmission & distribution line andsubstations.

- Review and certify the Contractor's testing and commissioningplans.
- Supervising, testing and commissioning in conjunction with NEA and other team members.
- Certifying substantial completion and/or completion of main project components as defined in the Contract documents.

(iii) The Team Leader will lead the capacity building and be responsiblefor:

- Performing a training needs assessment for NEA staff and preparing a training program with the assistance of the consultantteam.
- Contributing to capacity building of NEA counterpartstaff.

II. Line and Substation Engineer (Civil Structure)

(i) Review the design parameters to be used for design of sub-transmission poles/towers, pole/tower foundations, and substation structures. Check the pole/tower, pole/tower foundation, and substation structure designs submitted by the Contractors and assist in approval of Contractor's designs, drawings and technical information.

(ii) Make necessary inputs and advice to the project team and to NEA on sub-transmission & distribution line, and substation structural matters.

(iii) Witness and certify pole/tower prototype tests prior to manufacturing and shipment.

(iv) Assist the consultant team to perform a training needs assessment for counterpart staff and prepare a training program and contribute to capacity building of NEA counterpart staffs.

(v) Perform other functions as may be assigned or delegated by Team Leader from time to time during the time of assignment.

III. Substation Engineer (Electrical)

(i) Make necessary inputs and advice to the project team and to NEA on substation's technical matters.

(ii) Assist NEA in review and approval of Contractor's substation's drawings and technical information.

(iii) Witness and certify substation's main equipment shop inspections and assist NEA with inspections and certifications of manufactured items prior to shipment and upon receipt.

(iv) Supervise substation construction and installation works in conjunction with NEA and other team members.

(v) Review and certify the Contractor's testing and commissioning plans.

(vi) Supervise testing and commissioning of substations in conjunction with NEA and other team members.

(vii) Review, check and certify suppliers' substation equipment design, and approve the technical documents.

(viii) Assist with the review of Contractor's claims for extension of time or additional costs; and prepare variation instructions and cost review; certify volume of works completed withdrawal applications and issue of monthly and final payment certificates.

(ix) Assist with the certification of substantial completion and/or completion of substation works as defined in the Contract documents.

(x) Assist the consultant team to perform a training needs assessment for counterpart staff and prepare a training program.
(xi) Contribute to capacity building of NEA counterpart staff.
(xii) Perform other functions as may be assigned or delegated by Team Leader from time to time during the time of assignment.

IV. Distribution SystemEngineer

(i) Make necessary inputs and advice to the project team and to NEA on distribution networks and distribution substation technical matters.
(ii) Assist NEA in review and approval of Contractor's drawings and technical information.
(iii) Witness and certify main equipment shop inspections and assist NEA with inspections and certifications of manufactured main equipment prior to shipment and upon receipt.
(iv) Supervise site construction and installation works in conjunction with NEA and other team members.
(v) Review and certify the Contractor's testing and commissioning plans.
(vi) Supervise testing and commissioning of substations in conjunction with NEA and other team members.
(vii) Review, check and certify suppliers' equipment design, and approve the technical documents.
(viii) Assist with the review of Contractor's claims for extension of time or additional costs; and prepare variation instructions and cost review; certify volume of works completed withdrawal applications and issue of monthly and final payment certificates.
(ix) Assist with the certification of substantial completion and/or completion of main project components as defined in the Contract documents.
(x) Assist the consultant team to perform a training needs assessment for counterpart staff and prepare a training program.
(xi) Contribute to capacity building of NEA counterpart staff.
(xii) Perform other functions as may be assigned or delegated by Team Leader from time to time during the time of assignment.

V. Technical Supervisor (Electrical)

(i) Upon the instruction of Distribution System Engineer, inspect and report the quality of construction and installation works of Contractors.
(ii) Help Distribution System Engineer in reviewing Contractor’s volume of works completed.
(iii) Collect the data of works and equipment from project sites, and report it to Distribution System Engineer.
(iv) Assist Distribution System Engineer in preparation of various reports as per the reporting requirements.
(v) Perform other functions as per the instruction of Distribution System Engineer, and the Team Leader.

VI. Civil Supervisor

(i) Upon the instruction of Civil Engineer, inspect and report the quality of construction and installation works of Contractors.
(ii) Help Civil Engineer in reviewing Contractor's volume of works completed.
(iii) Collect the data of works and equipment from project sites, and report it to Civil Engineer.
(iv) Assist Civil Engineer in preparation of various reports as per the reporting requirements.
(v) Perform other functions as per the instruction of Civil Engineer, and the Team Leader.

VII. Environmental SafeguardSpecialist

(i) Provide guidance to the Project Team and Contractors on the environmental categorization and mitigation measures for each substation sites as guided by IEEs, ESMPs, and other relevant documents during the construction.
(ii) Inform the PIU and the Contractors on the anticipated changes to the baseline to determine the direct, indirect, induced and cumulative impacts of the project in construction phase. These impacts may include, but not limited to, loss of habitat and ecosystems, loss of flora and fauna, impacts on wildlife, food supply chain and migration patterns of wildlife, water quality, emission of greenhouse gases, erosion and sedimentation, loss of physical and cultural resources, impacts associated with construction etc.
(iii) Make necessary inputs and advice to the project team and to NEA on environmental matters related to distribution networks and distribution substation technical matters if there are any anticipated changes to the baseline.
(iv) Notify and present detailed illustrations to NEA on any unforeseen adverse environmental impacts because of construction activities by the Contractors, and ways to mitigate them. Plan necessary mitigation measures with the participation of NEA as soon as possible, and initiate such activities with the approval of NEA.
(v) Update/Review construction Contractors' environmental health and safety plan (EHS) and recommend revisions as necessary.
(vi) Monitor the implementation of the subprojects environmental instruments (ESMPs) are conducted properly by the Contractor and conduct routine inspections of construction/installation activities including visual survey of ROW clearance, construction equipment storage areas, waste disposal areas and construction camps.
(vii) Prepare reports as per Reporting Requirements on environmental safeguard activities for each project component and sub-component requiring environmental safeguard activities.
(viii) Perform other functions as may be assigned or delegated by Team Leader

from time to time.

VIII. Social SafeguardSpecialist

(i) Provide guidance to Project Team/NEA on the social categorization of each subproject

(ii) Supervise preparation of applicable subproject ES documents (IPDP, RAP, CDP, etc.) and provide guidance to Project Team/NEA on the adequacy of such documents to address, minimize, mitigate social risks arising from project activities.

(iii) Initiate and conduct necessary activities required to minimize the social impacts of construction as guided by ESMPF and subproject IEE, ESMP, IPDPs, RAPs, and other relevant documents.

(iv) Make necessary inputs and advice to NEA on social safeguard issues as required by the national laws, regulations and AIIB's environmental and social policies.

(v) Notify and present detailed illustrations to NEA on any unforeseen adverse social impacts because of construction activities by the Contractors, and ways to mitigate them, including risk on sexual exploitation and abuse, and sexual harassment. Plan necessary mitigation measures with the participation of NEA as soon as possible, and initiate such activities with the approval of NEA.

(vi) Update the implementation schedule consistent with all the resettlement plan requirements, making sure that major components are carried out before the civil works.

(vii) Provide guidance to the national social safeguard specialist and NEA's concerned staff responsible for social safeguard in data collection and census surveys of affected persons.

(viii) Monitor implementation of subproject social instruments (RAP, IPDP).

(ix) Prepare reports as per Reporting Requirements on related social activities and instruments for each project component and sub-component.

(x) Ensure functional Grievance Redress Mechanism (GRM).

(xi) Conduct information dissemination activities/perioding consultations to Project-Affected Persons/Communities and other key stakeholders.

(xii) Perform other functions as assigned or delegated by Team Leader from time to time during the time of assignment

IX. Community Relations (CR) Manager

(i) Create and implement a community outreach plan to educate people about the importance of the project and positive impacts that it could bring to the community.

(ii) Organize, attend and represent NEA in local group meetings regarding the project, and its impacts.

(iii) Facilitate solution of complex issues, build strategic relationships with stakeholders and develop consensus for the project.

(iv) Give formal and informal group presentations, maintain good relationships

with community leaders and medial representatives.

(v) Respond to public inquiries. Organize meetings with Contractors, and make them understand and mitigate the concerns of public.

(vi) Perform other functions as assigned or delegated by Team Leader.

7. Capacity Building

I. One of the basic objectives of the consulting services is the transfer of technology in this field to the NEA's engineers. This will be achieved by involving the NEA engineers with the PSC experts as much as possible in various activities of the project implementation during field works as well as in the home office of theConsultant.

II. NEA's all Electrical Engineers working in DSUEP (max. of six) will visit the Consultant's home country's office for at least one month each to gain valuable experience and familiarity with the working and procedures of Consultant's design particularly with regard to the detailed design review and the drawing approvals.The cost of such training including the cost of travel, food, and lodging of participants shall be borne by the Consultant. NEA shall provide pocket money to the engineers as per the existing NEA rules.

III. In additionto above, the Consultant shall arrange four (4) training sessions in its Nepal office for all the Electrical Engineersworking in DSUEP (max. of six). The duration of each session shall be one week. The cost of such training shall be borne by the Consultant.

IV. The training under (II) and (III) shall be conducted in the following disciplines:

(i) Design of 33 kV, 132 kV, and higher voltage transmission lines (Selection of voltage level and conductor size, insulation coordination, tower earthing, conductor vibration damping, corona, sag and tension, communication,etc.)

(ii) Design of 33 kV, 132 kV, and higher voltage tower structure and foundation (Load calculation and analysis, tower member and connection design, foundation design, design drawings, testing procedures,etc.) as well as pole design for distribution lines (230 V, 400 V, 11 kV, 33 kV) and monopoles for 66 kV and 132 kV suitable for use in Nepal.

(iii) Design of 220/132/33 kV Substations (Selection of voltage level and switchgear (including GIS) equipment rating, insulation coordination, protection and relaying scheme, substation earthing, communication,etc.).

(iv) Design and Equipment Selection for distribution level voltages, 230 V, 400 V and 11 kV, including but not limited to transformer, insulators, isolators, automatic isolators, ACSR conductors, earthing arrangements.

(v) Planning and Design of distribution networks and loss reduction of distributionsystems.

(vi) SCADA and Distribution System Management

(vii) The PSC shall provide hands on training on the latest version of internationally recognized transmission line design, transmission line tower/ substation design and transmission system planning software (PLS CADD line design, PLS Tower, SAPS are recommended).

V. The consultant shall also provide information and assist in procurement of latest issues of IEC and other Standards related to design, operation and maintenance of

transmission and sub-stationsystems.

8. Reporting requirements

I. The Consultant shall prepare the various reports and maintainrecords documenting decisions made at meetings, progress on project implementation, financial records and changes to the Contract plans. All documents and reportswould be made available on electronic format to AIIB. The reporting shall, in general, comprise of thefollowing:

(i) Technical reports as necessary on designs and drawings submitted by the Contractor

(ii) Design report on standard sub-transmission line poles/towers

(iii) Manual for checking drawings of poles/towers and foundations

(iv) Report on shop inspection and test witnessing

(v) Formats (e.g., earthing measurement, concrete pouring, tower erection etc.) for site supervision

(vi) Site supervision reports

(vii) At NEA's request, all necessary reports concerning special matters related to the project (installation, work methodology, safety, claims, checklist for equipment testing and commissioning etc.)

(viii) Monthly reports concerning physical progress/status of works, expenditures, delivery of materials etc. in the formats acceptable to NEA and AIIB.

(ix) Quarterly progress report giving the progress status, schedules, costs, budgets etc. in the formats acceptable to NEA and AIIB.

(x) Trimester environmental and social monitoring report during construction period and annual environmental and social monitoring report for post construction period. This refers to the progress on the implementation of ES instruments as given in IEEs, ESMPs, RAPs, IPDPs and other relevant documents.

(xi) Project Completion Report (PCR) as per requirement of NEA and AIIB.

II. All documents and reports would be made available,separate for each line, substation, and joint report, on electronic format to AIIB. All reports will be in Englishlanguage.

9. Counterpart Support and Inputs Provided by NEA

I. NEA Project Team or Project Implementation Unit (PIU):DSUEP shall have its own contract management team comprising of project manager, engineers and other support staffs. The team shall provide contract documents, survey and other reports available to the Consultant. The subproject team shall work in close collaboration with the Consultant's team and be fully involved in all aspects of the consulting services. Both NEA and Consultant's teams shall work together as one single team in all matters related to theProject.

II. Construction Supervision: NEA engineers and technicians will carry out the day-to-day construction supervision at different site locations of the subprojects along with the Consultant, and the Consultant shall report to the Project Manager of each subproject who is deputed on behalf of the NEA. Besides, the NEA Project team shall help expedite in resolving the local problems, land acquisition, compensation and forest clearance.

III. Administrative support for Consultant Team: If required by local regulations, NEA will provide Consultant with necessary support letters for obtaining visas and permits for its

experts. The cost and timing of obtaining the above is entirely the responsibility of the consultants.

10. Qualification/Experience of Experts

International Experts

I. **Team Leader and Transmission/Distribution Line Electrical Engineer** shall have preferably Master's Degree in Electrical Engineering and preferably more than 15 years' experience in transmission line projects and substantial experiences in developing countries other than his/her own country. The expert shall have previous team leader experience in detail design and construction supervision of 33 kV and above voltage level transmission line projects. Experience shall cover 33 kV or higher voltage class transmission line design, specification, construction, testing and commissioning. It is expected that the amount of time spent by the Team Leader in the field (at the office in Kathmandu or project sites) will not be less than 60 percent of the required total man-month inputs from the Team Leader during the execution of the project.

II. **Line and Substation Engineer (Civil Structure)** shall have preferably master's degree in Structural Engineering, with preferably more than 10 years of experience in design and construction of 33 kV and above voltage level transmission line poles/towers and substation structures. The expert shall have previous experience in design and construction supervision of transmission line and substation projects of 33 kV and above voltage level.

III. **Substation Engineer (Electrical)** shall have preferably Master's Degree in Electrical/High Voltage Engineering, preferably with 10 years of experience in design, construction, testing and commissioning of 33 kV or above voltage levelsubstations.

IV. **Distribution System Engineer** shall have preferably master's degree in Electrical Engineering/High Voltage Engineering/Power Engineering with more than 10 years of experience in system reinforcement, distribution system expansion and loss optimization of 33 kV, 11 kV and 400 V distribution systems. In addition to that, the expert should have experience in designing/planning/commissioning of SCADA/communication system for interconnected/integrated power grid system.

V. **Environmental Safeguard Specialist** shall have preferably Master's Degree in Environmental Science, Environment Management, Environmental Engineering or closely related discipline with more than 15 years of professional experience. Theexpert shall have experience in conducting environmental impact analysis (EIA), initial environmental examinations (IEE) of 33 kV or above voltage class transmission line projects as per international standard and practice as well as well as latest AIIB or other donor agencies guidelines with regard to environmental protection and resettlement. The specialist should be conversant with national laws relating to Initial Environment Examination (IEE)/Environmental Impact Assessment (EIA) and AIIB's environmental and social policies.

VI. **Social Safeguard Specialist** shall have preferably Master's Degree in Sociology/Social Science/Anthropological Science with more than 15 years of professional experience. The Specialist shall have experience in preparation of resettlement action plan and indigenous peoples plan (IPP) etc., in 33 kV or above voltage class transmission line projects in accordance with the international practices as well as latest donor agencies' guidelines, preferably AIIB Guidelines with regard to environmental protection and resettlement. The Specialist should be conversant with national laws relating to land acquisition and resettlement and AIIB's environmental and social policies.

National Experts

I. Line and Substation Engineer (Civil Structure) shall have preferably Master's Degree in Structure/Civil Engineering with preferably 10 years of experience in the design of foundations for transmission line towers and substation structures for 33 kV and above voltage level. The expert shall have previous experience in design and construction supervision of transmission line and substation projects of 33 kV and above voltage level.

II. Substation Engineer (Electrical) shall have preferably Master's Degree in Electrical/High Voltage Engineering, preferably with 10 years of experience in design, construction, testing and commissioning of 33 kV or above voltage level substations.

III. Distribution System Engineer shall have preferably Master's Degree in Electrical Engineering/High Voltage Engineering with more than 10 years of experience in system reinforcement, distribution system expansion and loss optimization of distribution system.

IV. Technical Supervisor (Electrical) shall have preferably Bachelor's Degree in Electrical Engineering or at least diploma in Electrical Engineering. The work experience shall be more than 6 years for personnel having Bachelor's Degree and more than 10 years for personnel having Diploma Degree.

V. Civil Supervisor shall have preferably Bachelor's Degree in Civil Engineering or at least diploma in Civil Engineering. The work experience shall be more than 1 year for personnel having Bachelor's Degree and more than 2 years for personnel having Diploma Degree.

VI. Environmental Safeguard Specialist shall have preferably Master's Degree in Environmental Science, Environment Management, Environmental Engineering or closely related discipline with more than ten (10) years of professional experience. The expert shall have experience in conducting environmental impact analysis (EIA), initial environmental examinations (IEE) of transmission line projects or hydropower projects as per international standard and practice as well as well as latest AIIB or other funding agencies guidelines with regard to environmental protection and resettlement. The specialistshouldbeconversantwithnationallawsrelatingtoInitialEnvironment
Examination (IEE)/Environmental Impact Assessment (EIA) and AIIB's environmental and social policies.

VII. Social Safeguard Specialist shall have preferably Master's Degree in Sociology/Social Science/ Anthropological Science with more than ten (10) years of professional experience. The Specialist shall have experience in preparation of resettlement plan; indigenous peoples plan (IPP) etc. of transmission line projects or hydropower projects in accordance with the international practices as well as latest funding agencies' guidelines, preferably AIIB Guidelines with regard to environmental protection and resettlement. The Specialist should be conversant with national laws relating to land acquisition and resettlement and AIIB's environmental and social policies.

VIII. Community Relations Manager shall have at least Master's degree in Sociology or similar field and at least 10 years professional experience in community engagement and public relation activities in infrastructure project specially in power sector. The Manager should be proficient in preparation of engagement plan and executing in complex project location and challenging situation. He / She should aware best

practices of stakeholder engagement in the project financed by ADB, WB, JICA, etc.

CODE OF CONDUCT FOR EXPERTS (to be submitted by the Consultant)

We are the Consultant, [*enter name of Consultant*]. We have signed a contract with [*enter name of Client*] for [*enter description of the Services*]. These Services will be carried out at [*enter the Site and other locations as appropriate*]. Our contract requires us to implement measures to address environmental and social risks related to the Services, including the risks of sexual exploitation, sexual abuse and sexual harassment.

This Code of Conduct is part of our measures to deal with environmental and social risks related to the Services. It applies to all Experts at the Site or other places where the Services are being carried out.

This Code of Conduct identifies the behavior that we require from all Experts.

Our workplace is an environment where unsafe, offensive, abusive or violent behavior will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

Experts shall:

1. carry out his/her duties competently and diligently;
2. comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Experts and any other person;
3. maintain a safe working environment including by:
    a. ensuring that workplaces, equipment and processes under each person's control are safe and without risk to health;
    b. wearing required personal protective equipment; and
    c. following applicable emergency operating procedures.
4. report work situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. not engaging Sexual Harassment, which means unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature with other Experts, Contractor's Personnel or Client's Personnel;
7. not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another ;

8. not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions;
9. not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
10. report violations of this Code of Conduct; and
11. not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Client, or who makes use of grievance mechanism for Experts or the project's Grievance Redress Mechanism.

RAISING CONCERNS

If any person observes behavior that he/she believes may represent a violation of this Code of Conduct, or that otherwise concerns him/her, he/she should raise the issue promptly. This can be done in either of the following ways:

1. Contact [*enter name of the Consultant's social expert with relevant experience in handling sexual exploitation, sexual abuse and sexual harassment cases, or if such person is not required under the Contract, another individual designated by the Consultant to handle these matters*] in writing at this address [ ] or by telephone at [ ] or in person at [ ]; or
2. Call [ ] to reach the Consultant's hotline *(if any)* and leave a message.

The person's identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. We take seriously all reports of possible misconduct and will investigate and take appropriate action. We will provide warm referrals to service providers that may help support the person who experienced the alleged incident, as appropriate.
There will be no retaliation against any person who raises a concern in good faith about any behavior prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct by Experts may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR EXPERT:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Consultant's contact person(s) with relevant experience*] requesting an explanation.

Name of Expert: [insert name]

Signature: _____

Date: (day month year): _____

Countersignature of authorized representative of the Consultant:

Signature: _____

Date: (day month year): _____

ATTACHMENT 1: Behaviors constituting Sexual Exploitation and Abuse (SEA) and behaviors constituting Sexual Harassment (SH)

ATTACHMENT 1 TO THE CODE OF CONDUCT FORM

BEHAVIORS CONSTITUTING SEXUAL EXPLOITATION AND ABUSE (SEA) AND BEHAVIORS CONSTITUTING SEXUAL HARASSMENT (SH)

The following non-exhaustive list is intended to illustrate types of prohibited behaviors:

(1) Examples of sexual exploitation and abuse include, but are not limited to:

- An Expert tells a member of the community that he/she can get them jobs related to the work site (e.g. cooking and cleaning) in exchange for sex.
- An Expert that is connecting electricity input to households says that he can connect women headed households to the grid in exchange for sex.
- An Expert rapes, or otherwise sexually assaults a member of the community.
- An Expert denies a person access to the Site unless he/she performs a sexual favor.
- An Expert tells a person applying for employment under the Contract that he/she will only hire him/her if he/she has sex with him/her.

(2) Examples of sexual harassmentin a work context

- An Expert comment on the appearance of another Expert (either positive or negative) and sexual desirability.
- When An Expert complains about comments made by another Expert on his/her appearance, the other Expert comment that he/she is “asking for it” because of how he/she dresses.
- Unwelcome touching of an Expert or Employer’s Personnel by another Expert.
- An Expert tells another Expert that he/she will get him/her a salary raise, or promotion if he/she sends him/her naked photographs of himself/herself.