

NEA ENGINEERING COMPANY LIMITED



Trade Tower, Thapathali, Kathmandu

NEA Engineering Company Limited (NEAEC) Call for Application for Roster/Register of Experts (National)

First publication date: 26th August 2020

TERMS OF REFERENCE

1. Background

NEA Engineering Company Ltd (NEAEC) was established on July 13, 2017 to provide complete engineering services and solutions to hydropowers and infrastructures. NEAEC services include feasibility study, hydropower planning, hydrology and hydraulic analyses, energy analyses, efficiency testing, assessment of equipment and facility condition, automation design, dam engineering, dam safety inspections, hydro mechanical engineering/ civil /structural/ electrical design, transmission and distribution system design operation/maintenance, rehabilitation and specialized services, project management and construction services.

The company intends to build national engineering capability for large hydro-projects, extra high voltage engineering and similar techno-intensive areas and provide a resource pool of competent man-power for the private sector to draw upon it aspires to be a renowned regional consulting institution in power sector.

NEA Engineering Company Limited (NEAEC), Nepal is working on Detailed Feasibility / Engineering Study of few large hydro power projects including Phukot Karnali (480MW) Hydroelectric Project, Betan Karnali (439MW) Hydroelectric Project, Jagadulla (106 MW) hydroelectric Project Kimathanka Arun (450 MW) Hydroelectric Project, Mugu Karnali (1902 MW) Hydroelectric Project, Transmission Line/ EHV Substation Projects, Environmental Assessment and related studies of energy sectorial development projects and other similar projects for different developers (Clients). The NEAEC intends to retain the services of Experts/Specialists as Technical Support Group (TSG), experienced in the design of large hydraulic infrastructure to provide independent advice and guidance to the various projects. This call for application is intended to establish a Roster of Experts/ individual consultant to provide Consulting Service in various projects subjects to mutually agreed terms and conditions.

2. Composition of the Experts for the Roster.

Roster is expected to contain specialists for the NEAEC as well as other assignments. It is envisaged that the Roster will comprise following experts:

1. Dam Engineer /Experts
2. Geotechnical /Tunnel & Underground structures Experts
3. Structural Engineer/Experts
4. Sedimentological/ Hydrology Experts
5. Hydropower Engineers/Hydraulics Experts
6. Seismological Experts
7. Engineering Geologist/Experts
8. Hydro-Mechanical Engineers/Experts
9. Mechanical Engineers/Experts

10. Electro-mechanical Experts/Power System Analyst
11. Transmission line / EHV Substation Experts
12. Construction Planner / Experts
13. Contract Experts
14. Financial/Economic Analyst/Economist Experts
15. Hydropower Planning/Cost Estimator
16. Report Editor Experts
17. Architect Specialist

Environment, Health, Safety and Social Division (EHSSD), TECHNICAL SUPPORT GROUP (TSG)

1. Environment Specialist
2. Resettlement Expert
3. Indigenous People (IP) Experts/Anthropologist
4. Botanist/Forest Ecosystems Expert
5. Wildlife Experts /Zoologist
6. Fish Expert
7. Nepali Language Expert

3. Experts/Positions Required:

Experts/Positions and their number required for each position is based on preliminary estimation as per existing and expected projects and existing in-house manpower of NEAEC. So, the requirement might change as per changes in projects, existing in-house manpower, time and manpower schedule of project implementation, and any unforeseen events which may cause changes in project implementation but are beyond the control of NEAEC.

4. Qualification, Scope of duties and Experiences of Experts.

The qualifications, experiences and scope of works shall be, and not limited to, as given below.

(Technical Support Groups - TSG)

SN	Job Title	Scope of duties	Qualification
1.	Dam Engineer /Experts	<ul style="list-style-type: none"> • Review and develop, oversee and interpret the geotechnical investigations primarily focused on hydro projects with dam/reservoir options. • Preparation of design basis memo for dam (RCC, CFRD, Arch Dam etc. based on site condition). • Extensive exercise for the optimization of dam height and reservoir regulation and reservoir simulations. • Must have demonstrable skill in the evaluation of technical performance, identifying potential improvements. 	<ul style="list-style-type: none"> • Minimum Master’s or higher degree in Civil Engineering or Equivalent. • Extensive experience with dam design. • Understanding of international dam regulations. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum 15 years of working experience with International experience in design of dam, out of those 10 years as dam engineer in hydropower projects of capacity more than 50 MW.

SN	Job Title	Scope of duties	Qualification
		<ul style="list-style-type: none"> • Work together with hydrologist and reservoir simulation expert for floods and routing effects. • Guidance in costing of work items related to dam construction 	
2.	Geotechnical /Tunnel & Underground structures /Experts	<ul style="list-style-type: none"> • Review of geotechnical standards and criteria to guide in the implementation and performance of the various structures of the Project. • Review the tunnel design and managing all engineering tasks. • Review the regional and local geological characteristics and seismic conditions for all hydraulic infrastructures to be built under the project; • Review the analytical results of construction material sources including results of borehole investigation, laboratory testing, in-situ tests for infrastructures under the project; • Review of the rock support system designed for all types of underground structures with respect to structural sufficiency, optimization of time and cost. • Review testing results, design recommendations and documents detailing the studies conducted. • Review of the potential landslide areas along the project. • Review geotechnical investigation reports carried out by the consultant. • Review of the laboratory tasks including scheduling, performing analysis, quality control/quality assurance, reporting, ordering supplies, and equipment maintenance. • Review of field observations, data, maps, and calculations in geology, geotechnical, and environmental reports. • Review of project and site management of geotechnical and environmental projects to ensure worksite and project safety. 	<ul style="list-style-type: none"> • Minimum of Master’s or higher degree in Geotechnical or Equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience having International experience in design of tunnel and underground structures during Detailed Engineering study, out of those 10 years as geotechnical engineer in hydropower / similar projects of capacity more than 50 MW.

SN	Job Title	Scope of duties	Qualification
		<ul style="list-style-type: none"> • Review of geotechnical laboratory tests. • Review the report of investigation design, cost estimates, scope-of-work, contracts, and coordination for geotechnical investigations and soils laboratory analysis. • Review and analyses the report/ design drawings assumptions of tunnel structures. • Review the tunnel design criteria. • Summarize key findings and recommendations including additional investigations if required. • Review and write design reports, specifications and plans, provides input for the preparation of geotechnical baseline reports • Provide guidance for geotechnical investigation work in the project • Provide guidance for laboratory testings as per required for geotechnical design • Provide critical analysis and suggestion on geotechnical issues in the project • Guidance in costing of work items related to dam construction 	
3.	Structural Engineer/Experts	<ul style="list-style-type: none"> • Review and guide to prepare specifications, design criteria, and other available data preparation to accomplish the structural design and the preparation of design analyses • Participates in pre-design conferences/meeting with NEAEC team to validate requirements, identify project constraints, define the problem, and determine applicable design criteria. • Review the structural and foundation requirements and coordinate with all other design disciplines to provide a comprehensive design product conferring the site condition, and phasing of construction, etc. • Review and prepare design reports for the structural design 	<ul style="list-style-type: none"> • Minimum Master’s degree or Higher Degree in Civil / Structural Engineering or Equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience having International experience in structural design including 3D finite element analysis (FEA) linear and non-linear modelling and earthquake engineering analysis during Detailed Engineering study, out of which, 10 of those years have been worked as structural design engineer in hydropower / similar projects of capacity more than 50 MW.

SN	Job Title	Scope of duties	Qualification
		<p>of hydropower project components.</p> <ul style="list-style-type: none"> • Review design criteria and project constraints and other available data used for structural design and analysis of various hydropower components. • Review and compare the results of geotechnical and geological studies with those used in foundation design and other structural design. • Critically review and suggest about design methodologies and design basis adopted. • Review critically the structural design calculations, technical and practical aspects of various structural components including Dams, Cofferdams, Spillways, under sluice, Vertical shaft, Sediment Flushing systems etc. • Analyze the inputs and outputs of 3D software Model used for Structural Analysis and design. • Review calculations and analyses related to underground structure design and various support systems and check their adequacy in preventing landslide and other hazards. • Evaluate whether the results of seismic hazard analysis are incorporated in design of major Structural components to reduce the associated seismic risk. • Review and comment on Drawings of various abovementioned components and suggest whether these can be readily converted into tender drawings at the later detailed design phase of various abovementioned components. 	<ul style="list-style-type: none"> • Fluency in programs like, ETABS, SAP 2000, Staad Pro, PROKON etc.
4.	Sedimentological/ Hydrology Experts	<ul style="list-style-type: none"> • Review the surface water and hydro-geologic study and develop site conceptual models. • Establish, review, and evaluate water resource, analyze collected 	<ul style="list-style-type: none"> • Minimum of a M.Sc. or higher degree in Hydrology/Water resource engineering / Hydropower or equivalent with

SN	Job Title	Scope of duties	Qualification
		<p>data, prepare hydrological /hydro geological model</p> <ul style="list-style-type: none"> • Review and cross check analysis of hydro-geologic data /information, prepare written reports of study findings, and presents oral and/or written briefings of findings and others as needed • Review and guide to calculate the flood hydrographs and routing effects due to the rainfall pattern and catchment conditions • Evaluate the impact of the expected sediments on the choice of intake structures and desilting facilities • Review the hydrological analysis for daily, monthly, yearly flow calculated by NEAEC team. • Review the analysis of the flow duration curve used for power generation. • The criteria and methods by which the data were used to estimate Maximum Probable Flood, Design Flood • Review of GLOF and its impact in Project Structures • Review the sediment logical study reports carried out by Consultant. • Review the energy calculation. • Review and provide necessary input for the preparation of Hydrological and Sedimentological Project report 	<p>specialization in Sediment Engineering.</p> <ul style="list-style-type: none"> • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience having International experience in related field out of which, 10 of those years having strictly been worked as Sedimentological/ Hydrology engineer in hydropower / similar projects of capacity more than 50 MW.
5.	Hydropower Engineers/Hydraulics Experts	<ul style="list-style-type: none"> • Guide NEAEC team on civil, structural and hydraulic calculation done by NEAEC team • Review and comments on civil drawings and specifications, feasibility studies, alternative analysis, design criteria and other overall engineering aspects in accordance with international best practices. • Review the reservoir sedimentation study carried out by the hydrological engineer to identify the least cost solution with minimum environmental 	<ul style="list-style-type: none"> • Minimum M.Sc. or higher degree in Civil/Water Resources/Hydropower Engineering or equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum 15 years or working experience having International experience as Hydropower / hydraulic Engineer out of which, 10 of those years having

SN	Job Title	Scope of duties	Qualification
		<p>impacts. Reflect the optimal design in the cost estimates and tender documents.</p> <ul style="list-style-type: none"> • Help to plan a hydraulic model test on sediment flushing facilities • Review and prepare any disaster risk management plan including local flood control and early warning systems, with the hydrological engineer. • Review the General layout of diversion dam, cofferdams and appurtenances. • Review Spillway configuration and its adequacy (from a structural viewpoint only) to handle the design flood. • Review the Optimization of Hydraulics Structure. • Review the Transient analysis. • Review the simulation of Peaking reservoir. • Review of Spillway and barrage design. • Review the Dynamic and Static Analysis of Dam. • Review the dam break analysis. • Review the Hydraulic analysis of semi pressurized Settling Basin. • Provide input for the preparation of design report 	<p>experience in hydropower / similar projects of capacity more than 50 MW in hydraulic design including computational flow dynamics (CFD) analysis of hydropower, Hydraulic design of spillways, gates, bottom outlets, energy dissipater, PH sizing and optimization etc. and other related major civil infrastructure projects in hydropower sector.</p>
6.	Seismological Experts	<ul style="list-style-type: none"> • Review of pertinent and establish database of historical earthquakes data near the project site with epicenter(s) and date(s) of occurrence, etc., based on details of seismological data collected from the seismic centers and other available sources. • Study and evaluate seismic activity in the project area e.g., seismic status of faults, thrusts and other weak features in the vicinity of the dam sites and within the region, etc. • Review and derive seismic design parameters, to ensure earthquake safety of the major hydropower structures based on the available geological and 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in Seismology or Equivalent • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum 15 years or working experience having International experience in relevant professional works, out of which 10 of those years having experience in hydropower / similar projects of capacity more than 50 MW as Seismological Expert.

SN	Job Title	Scope of duties	Qualification
		<p>seismological records and reports.</p> <ul style="list-style-type: none"> • Analyze seismic hazard with both probabilistic and deterministic approaches • Determine the design basis earthquake parameters • Develop vertical design spectra using different approaches • Analyze seismic hazard due to the selected design and the failure of the completed structure 	
7.	Engineering Geologist/Experts	<ul style="list-style-type: none"> • Field study of the surface geology of the project site (composition, structure, and history of the earth's crust; examine rocks, minerals) based on the regional geological framework. • Review over all geological condition of the project site and guide the NEAEC team to prepare investigation plan e.g., mapping, geophysical survey, and sub-surface drilling. • Analyze on adequacy of sub-surface exploration and recommend for additional exploration requirements both in different geophysical investigations and drilling • Review and analyze the prepared geo map, geological sections, geophysical survey and drilling reports and recommends parameters for geotechnical/ geological design/ tunnel/ dam foundation design. • Guide and support the NEAEC team member to prepare geotechnical baseline report. • Review the regional and local geological characteristics and seismic conditions for all hydraulic infrastructures to be built under the projects • Evaluate all Field Investigation/s and Laboratory Test/s to review the geological conditions at the various hydraulic structures as well as construction materials of quarries/borrow areas in order to 	<ul style="list-style-type: none"> • Minimum of M.Sc. or higher degree in Geological Engineering or equivalent • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience with International experience in Geological investigations engineering projects, out of which 10 of those years having experience in geological mapping, construction materials, seismic analysis, tunnel design and underground structures, geological engineering of hydropower / similar projects of capacity more than 50 MW .

SN	Job Title	Scope of duties	Qualification
		<p>ascertain their properties. Evaluate the adequacy both in quality and quantity of all construction materials.</p> <ul style="list-style-type: none"> • Evaluate all Field and Laboratory Investigations to describe the geological conditions and design parameters at and along the extent of the project structures. Review the design of the project structures in so far as they adequately satisfy the engineering geological requirements. • Review of quality and sufficiency of the geological investigations and the interpretation thereof; correctness of the geological interpretation of the project area, engineering implications with respect to support system, stability of natural and excavated slopes; and support for surface and underground excavations. • Recommend type of tests on core samples and construction materials • Review the analytical results of construction material sources including results of borehole excavation, laboratory testing, in-situ tests for infrastructures under the project; • Review the tested results of borrow materials for concrete aggregates for hydraulic infrastructures under the project • Review in-situ, rock mechanical and laboratory tests results and recommend on the documents detailing the studies conducted. • Review of the potential landslide areas along the project. • Review of the seismic analysis and recommended coefficient. 	
8.	Hydro-mechanical Engineer/Experts	<ul style="list-style-type: none"> • Provides support for design review and quality assurance. • Works closely with other disciplines 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in Mechanical engineering or equivalent. • Experience with International consulting company or project.

SN	Job Title	Scope of duties	Qualification
		<ul style="list-style-type: none"> • Review and prepare guidelines for design development and assists in providing technical aspects • Design and review of Penstock, different types of Gates and valves, stop logs, trash racks, hoisting mechanisms and similar other components • Review study report and prepare document of actual design including all design criteria, parameters and standards, all major calculations and analysis including all the drawings prepared by the NEAEC team. • Review cost estimates for mechanical/hydro mechanical equipment based on the construction schedule. • Provide input for the preparation of Hydro mechanical design report of projects. 	<ul style="list-style-type: none"> • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience with International experience in hydropower projects in relevant professional works, out of which 10 of those years having experience of hydropower / similar projects of capacity more than 50 MW as Hydro-mechanical Expert .
9.	Mechanical Engineer/ Experts	<ul style="list-style-type: none"> • Examine methods of mechanical components of electro-mechanical equipment installation works, considering the site conditions. • Review cost estimates for mechanical components in electro-mechanical equipment based on the construction schedule. • Review study report and prepare document of actual design including all design criteria, parameters and standards, all major calculations and analysis including all the drawings prepared by the NEAEC team. • Review the implementation schedule for installation works of electric equipment. • Review the technical section for the mechanical equipment in the tender documents. • Review the Designing, maintaining, implementing, or improving mechanical components, equipment products, or systems for 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in Mechanical engineering or equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience with International experience in hydropower projects in relevant professional works, out of which 10 of those years having experience of hydropower / similar projects of capacity more than 50 MW as Mechanical Expert in preparation of specifications and installation of powerhouse mechanical equipment •

SN	Job Title	Scope of duties	Qualification
		<p>industrial, commercial or domestic purposes.</p> <ul style="list-style-type: none"> • Review construction, manufacturing or installation standards or specifications of electro-mechanical machines by performing a wide range of detailed calculations. • Review and ensure the code used for the design mechanical components of electromechanical equipment. • Review and evaluate mechanical systems, products, components, and applications by designing and conducting research programs; applying knowledge of electricity and materials. • Review and Confirms mechanical system's and components' capabilities by designing testing methods; testing properties. • Review of the optimal number of turbines. <p>Provide input for the preparation of electromechanical design report of projects.</p>	
10.	Electro-mechanical Experts/Power System Analyst	<ul style="list-style-type: none"> • Examine methods of electrical/electro-mechanical equipment installation works, considering the site conditions. • Review cost estimates for electrical/electro-mechanical equipment based on the construction schedule. • Review study report and prepare document of actual design including all design criteria, parameters and standards, all major calculations and analysis including all the drawings prepared by the NEAEC team. • Review the implementation schedule for installation works of electric equipment. • Review the technical section for the electrical equipment and transmission lines in the tender documents. • Review the Designing, maintaining, implementing, or 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in Electrical engineering /Power System or equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience with International experience in hydropower projects in relevant professional works as electrical engineer/power system analyst, out of which 10 of those years having experience of hydropower / similar projects of capacity more than 50 MW as extensive experience in power system analyst / preparation of specifications and installation of powerhouse electrical equipment.

SN	Job Title	Scope of duties	Qualification
		<p>improving electrical instruments, facilities, components, equipment products, or systems for industrial, commercial or domestic purposes.</p> <ul style="list-style-type: none"> ● Review construction, manufacturing or installation standards or specifications of electrical machines by performing a wide range of detailed calculations. ● Review and ensure the code used for the design electrical machines and equipment. ● Review and evaluate electrical systems, products, components, and applications by designing and conducting research program; applying knowledge of electricity and materials. ● Review and Confirms electrical system's and components' capabilities by designing testing method; testing properties. ● Review of the optimal number of generating, units consistent with the system profile, domestic and export load demands. ● Review power study in Nepal, seasonal variation of energy and capacity demand, the system load curves, seasonal variation of energy and capacity demand, and load forecast ● Review the seasonal variation of energy and capacity demand and ability of the two power systems to meet the energy and capacity demand ● Review the existing and planned additions and alternative supply options in Nepal. Establish the capital and operating costs for the alternative generation options. ● Review Load flow analysis at local and regional level. ● Review short circuit analysis and transient analysis 	

SN	Job Title	Scope of duties	Qualification
		<ul style="list-style-type: none"> • Provide input for the preparation of electromechanical design report of projects. 	
11.	Transmission line/ EHV Substation Experts	<ul style="list-style-type: none"> • Review the transmission line routing and alternatives and the tower types and locations • Review the design of the tower types, the models used and their optimum design • Review and guide the Conductor type, schemes, specifications selection, and accessories and insulators selection and design • Review and guide the sub-station location and the switchyard design • The Transmission lines will be of 132 kV, 220 kV, 400 kV and similar voltages • Inputs for design basis memorandum preparations • Able to work independently in remote are if required. • Review and guide the equipment selection and switchyard design for EHV (220/400 kV and higher) • Review and design the lightning and switching surges protection calculations for the towers and switchyard • Review and guide the Insulation coordination of the equipment in the substation • Review and guide the design calculations for EHV effects such as Corona and travelling waves and the transient stability due to such phenomenon as switching, power swing etc. • Review and design the Protection coordination and protection schemes 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in Electrical engineering or equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience with International experience in hydropower projects in relevant professional works as transmission engineering/ power system analyst or HV Engineer, out of which 10 of those years having experience of hydropower / similar projects of capacity more than 50 MW as Transmission line Expert/ expert in utilities .
12.	Construction Planner	<ul style="list-style-type: none"> • Assist in establishing and maintaining the project schedule in Primavera P6 or similar software • Monitor the critical path and report any issues impacting the critical path 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in Construction Management/Construction Planning/ Civil Engineering or equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with

SN	Job Title	Scope of duties	Qualification
		<ul style="list-style-type: none"> • Work with the project team to ensure that schedule activities are accurately updated • Provide progress reports in accordance with the project reporting calendar, including resource histograms, progress curves and current versus baseline comparisons • Assist in identifying schedule slippage mitigation strategies • Review and finalize construction schedule for civil works prepared by the NEAEC team. • Coordinate with other experts concerned to prepare all the tender documents. • Review of project construction schedule, methodology and technology to be adopted. • Review, Design and maintain all construction technical catalogues and prepare supplier data and interpret all contract plans and specification. • Review and evaluate projects and recommend various cost savings methods for construction of the project. • Review the construction planning of Main Civil, Hydro mechanical, Electromechanical, Switchyard and Transmission Line works, Access Road and Transportation Method, Construction Power, Camp Facilities etc. • Review the contract packages and planning. • Review the man, material, machine and other data used for the making of construction schedule. • Review the construction planning of Main civil structures such as Diversion Tunnel, Cofferdam, The Sediment Bypass Tunnel, Main Dam with Spillway, Plunge Pool, Intake Structure, and Powerhouse for Environment Release D/S of Dam, The Valve Chamber, Surge Tunnels, Adit Tunnel, Upper 	<p>International Consulting / Contractor firms.</p> <ul style="list-style-type: none"> • Minimum of 15 years of working experience with International experience in hydropower projects in relevant professional works, out of which 10 of those years having experience of hydropower/ similar projects of capacity more than 50 MW as Construction Planner • Knowledge of creating and developing baseline schedules; prior working experience with scheduling software (Primavera P6 or MS Project or similar). • Experience in planning schedule software, Primavera, MS Project, or similar and having key understanding of schedule & cost interfaces.

SN	Job Title	Scope of duties	Qualification
		Horizontal Penstock Tunnel, Vertical Shaft, Lower Horizontal Penstock Tunnel, Manifold, Powerhouse, The Gate Chamber, and Bus bar Tunnel. The Tailrace Tunnel after D/S Surge Chamber, The Tailrace Tunnel Outlets and appurtenances structures, etc.	
13	Contract Experts	<ul style="list-style-type: none"> • Review and guide on contractual records and documentation such as receipt and control of all contract correspondence • Responsible for review all the contractual analysis required in the light of FIDIC clauses and technical specification. • Review and comments on progress and performance to ensure goods and services confirming to the Contractual requirements. • Facilitating and negotiating contract variations and amendments in line with approved delegations. • Facilitating to identify and resolve disputes including claim settlement with contractor in a timely manner. • Review and guidance to work with accuracy of invoices and authorize payments consistent with the contract terms. • Reviews/guides in drafting contract conditions, provide guidance to develop bid evaluation formats • Review and guides the study reports as EPC level design documents with respect to FIDIC clauses and technical specification. • Fluent in PPA 2063 with latest amendments and the PPR 2064. 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in engineering discipline/Contract management or equivalent. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • At least 15 years of experience with International Experience, out of which 10 of those years having experience in FIDIC contract system and arbitration of claims or dispute resolution. Well Exposed with insurance policy and general context of contract system in Nepal. Well versed in PPA and PPR.
14.	Financial/Economic Analyst/Economist Experts	<ul style="list-style-type: none"> • Review and finalize all indicators such as Net Present Value (NPV), Benefit Cost ratio, Internal Rate of return, Debit Service Coverage prepared by the NEAEC team. 	<ul style="list-style-type: none"> • Minimum Master or higher degree in Finance or Economics /Engineering Economics / Chartered Accountant or other relevant majors.

SN	Job Title	Scope of duties	Qualification
		<ul style="list-style-type: none"> • Review and finalize financial analysis of the projects and the project entity such as, commercial merits of the projects under alternative power market conditions (electricity market and demand), financial packages and fiscal regimes prepared by the NEAEC team. • Review and identify risks associated with the project and allocated to the party that is assumed to cover the risk in the most cost efficient way in order to minimize financial costs of the venture, prepared by the NEAEC team. • Identify and assess various financial sources including public funds from Nepal and other countries that may benefit from the projects, multilateral/ bilateral organizations, and commercial financial institutions prepared by the NEAEC team. • Review sensitivity Analysis prepared by the NEAEC team. 	<ul style="list-style-type: none"> • Minimum 15 years of experience in relevant professional filed. • Having worked as a Financial/Economic Analyst for minimum of 10 years, producing indices from various data collection and analysis for at least one large Hydropower Projects (>50 MW). • Experience in Financial/Economic Analysis with international consultant or contracting company inside the country or abroad. • Experience (current) with International consulting company or project is a plus.
15.	Hydropower Planning/Cost Estimator	<ul style="list-style-type: none"> • Analyze documentation to prepare time, cost, materials, and labor estimates. • Assess cost effectiveness of projects or services, tracking actual costs relative to bids as the project develops. • Consult with clients, vendors, personnel in other departments or construction professionals to discuss and formulate estimates and resolve issues. • Confer with engineers, architects, contractors and subcontractors on changes and adjustments to cost estimates. • Prepare estimates used by management for purposes such as planning, organizing, and scheduling work. • Prepare estimates for use in selecting vendors or subcontractors. 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in engineering. • A sound knowledge of building materials, construction methods and customs prevailing in the trade. • Minimum 15 years of experience in hydropower development, relating to materials required, overhead expenses and costs of all kinds. • An understanding of a good method of preparing an estimate. • Experienced to collect, classify and evaluate data that would be useful in estimating and rate analysis. • Experience in bid preparation for contractor or consultant is a plus. •

SN	Job Title	Scope of duties	Qualification
		<ul style="list-style-type: none"> • Prepare cost and expenditure statements and other necessary documentation at regular intervals for the duration of the project. • Prepare and maintain a directory of suppliers, contractors and subcontractors. • Set up cost monitoring and reporting systems and procedures. • Establish and maintain tendering process, and conduct negotiations. • Calculate, analyze, and adjust estimates • Recommend ways to reduce costs 	
16.	Report Editor Experts	<ul style="list-style-type: none"> • Review all types of technical reports • Review tender documents • Reframing and remodeling as per DOED guidelines of all reports • Analyze and make consistency in different chapters in the report • Critical analysis on project cost and financial indicators 	<ul style="list-style-type: none"> • Minimum Master's or higher degree in engineering. • A sound knowledge of Hydropower projects • Minimum 15 years of experience in hydropower development, relating to materials required, overhead expenses and costs of all kinds. • An understanding of a good method of preparing an estimate. • Experienced to collect, classify and evaluate data that would be useful in estimating and rate analysis. • Experience in bid preparation for contractor or consultant is a plus.
17.	Architect Specialist	<ul style="list-style-type: none"> • Review and guide to prepare specifications, design criteria, and other available data preparation to accomplish the Architectural design and the preparation of design analyses • Participates in pre-design conferences/meeting with NEAEC team to validate requirements, identify project constraints, define the problem, and determine applicable design criteria. • Review the Architectural design requirements and coordinate with 	<ul style="list-style-type: none"> • Minimum Master's degree or Higher Degree in Civil / Urban planning specially Architecture stream. • Experience with International consulting company or project. • Involvement in large project inside the country with International Consulting / Contractor firms. • Minimum of 15 years of working experience having International experience in Architectural planning.

SN	Job Title	Scope of duties	Qualification
		<p>all other design disciplines to provide a comprehensive design product conferring the site condition, and phasing of construction, etc.</p> <ul style="list-style-type: none"> • Review and prepare design reports for the Architectural design of project. • Review design criteria and project constraints and other available data used for Architectural design and analysis. • Prepare the master plan of the overall project of building and project areas. • Overall planning of the component. 	<ul style="list-style-type: none"> • Fluency in programs like, Auto CAD, Sketch up, Revit, 3D Studio Max, InDesign etc.

Environment, Health, Safety and Social Division (Technical Expert Group):

SN	Position / Job Title	Scope of Duties	Qualification
1	Environment Specialist	<ul style="list-style-type: none"> • Lead/Guide large and medium size Environmental Assessment (EA – EIA/IEE/SEA) programs; • Lead/Guide the preparation and approval of reports related to Environmental and Social Assessment Studies, Implementation and Monitoring (including Scoping Document, Terms of Reference, Environmental and Social Management Plan and related EA reports) following national and international standards as required; • All activities required to perform the above-mentioned tasks. 	<ul style="list-style-type: none"> • University degree in Environmental Science / Management / Engineering; Other closely related disciplines may also apply; • 11+ years of proven professional experience in the field of environmental and social management of energy projects, particularly in hydropower generation, transmission and distribution; • 7 years of proven professional experience ensuring the compliance of projects with the Environmental and Social (E&S) requirements of International Financing Institutions (IFIs). • 5 years of demonstrated experience in projects with E&S of electricity transmission and distribution or hydropower generation including the preparation of E&S documents

			<p>for IFIs specially prior to loan effectivity;</p> <ul style="list-style-type: none"> • Excellent knowledge and understanding of E&S requirements of IFIs (such as World Bank, Asian Development Bank, European Investment Bank and Asian Infrastructure Investment Bank) and Government of Nepal; • Ability to establish and maintain productive partnerships with government executive officers, and other national and international partners and stakeholder, and ability to understand technical challenges of electricity transmission and distribution projects, hydropower generation projects, identify the related E&S risks and match them with appropriate solutions; • Excellent organizational and analytical skills and ability to deal openly, honestly and transparently with issues, resources and people; • Excellent communication skills, including the ability to convey complex concepts and recommendations, both orally and in writing, in a clear and persuasive, yet culturally appropriate style tailored to match different audiences; • Fluent in English and Nepali language; • Willing to work in the projects in remote places of Nepal.
2	Resettlement Expert	<ul style="list-style-type: none"> • Lead/Guide preparation of Resettlement Action Plans, implementation and monitoring of Resettlement programs; • Prepare stakeholder / community engagement plan, conduct public hearing / consultation for resettlement planning, implementation and monitoring; 	<ul style="list-style-type: none"> • Master's degree in social sciences or equivalent field; • 11+ years of demonstrated experience in preparation, implementation and monitoring of Resettlement Action Plan/Strategies/Framework; • 7 years of demonstrated experience in IFIs Involuntary Resettlement Requirements of

		<ul style="list-style-type: none"> • Contribute to the preparation and approval of reports related to Environmental and Social Assessment Studies, Implementation and Monitoring (including Scoping Document, Terms of Reference, Environmental and Social Management Plan and related EA reports) following national and international standards as required. 	<ul style="list-style-type: none"> • electricity transmission and distribution projects and/ or hydropower generation projects in Nepal; • Excellent communication and community facilitation skills; • Fluent in English and Nepali language; • Willing to work in the projects in remote places of Nepal.
3	Indigenous People (IP) Expert / Anthropologist	<ul style="list-style-type: none"> • Lead/Guide preparation of Indigenous/Vulnerable community Development Plan, its implementation and monitoring; • Prepare stakeholder/community engagement plan, conduct public hearing/consultation for Indigenous/Vulnerable community Development planning, implementation and monitoring; • Contribute to the preparation and approval of reports related to Environmental and Social Assessment Studies, Implementation and Monitoring (including Scoping Document, Terms of Reference, Environmental and Social Management Plan and related EA reports) following national and international standards as required. 	<ul style="list-style-type: none"> • Master's degree in Anthropology/Sociology or closely related field; • 11+ years of demonstrated experience in preparation, implementation and monitoring of IP strategies/ plans/ framework in Nepal; • 7 years of demonstrated experience in IFIs Indigenous Peoples Requirements; • Excellent communication and community facilitation skills; • Fluent in English and Nepali language; • Willing to work in the projects in remote places of Nepal.
4	Botanist/Forest Ecosystems Expert	<ul style="list-style-type: none"> • Lead/Guide survey of plants/forests/ecosystems (trees, shrubs, herbs, phytoplankton etc.); • Lead/Guide the preparation of botany/forests/ecology part of environmental baseline report; • Contribute to the preparation and approval of reports related 	<ul style="list-style-type: none"> • Masters in Botany/ Ecology • 11+ years of experience in botanical/ ecological research • Fluent in English and Nepali language; • Willing to work in the projects in remote places of Nepal.

		to Environmental and Social Assessment Studies, Implementation and Monitoring (including Scoping Document, Terms of Reference, Environmental and Social Management Plan and related EA reports) following national and international standards as required.	
5	Wildlife Expert /Zoologist	<ul style="list-style-type: none"> • Lead/Guide survey of wildlife (mammals, birds, reptiles etc.); • Lead/Guide the preparation of wildlife part of environmental baseline report; • Contribute to the preparation and approval of reports related to Environmental and Social Assessment Studies, Implementation and Monitoring (including Scoping Document, Terms of Reference, Environmental and Social Management Plan and related EA reports) following national and international standards as required. 	<ul style="list-style-type: none"> • Master’s Degree in Wildlife Biology/Zoology or closely related field; • 11+ years of experience in wildlife field research; • Fluent in English and Nepali language; <p>Willing to work in the projects in remote places of Nepal.</p>
6	Fish Expert	<ul style="list-style-type: none"> • Lead/Guide survey of fish fauna • Lead/Guide the preparation of fish (including abundance, migration, spawning etc.) part of environmental baseline report • Contribute to the preparation and approval of reports related to Environmental and Social Assessment Studies, Implementation and Monitoring (including Scoping Document, Terms of Reference, Environmental and Social Management Plan and related EA reports) following national and international standards as required. 	<ul style="list-style-type: none"> • Master’s Degree in Zoology/Fishery or closely related field; • 11+ years of experience in fish research; • Fluent in English and Nepali language; <p>Willing to work in the projects in remote places of Nepal.</p>

7	Nepali Language Expert	<ul style="list-style-type: none"> Review EA reports prepared in Nepali language and correct / improve spelling, grammar and writing as per standard rules and practices 	<ul style="list-style-type: none"> Master's Degree in Nepali Language/Literature 11+ years of experience as a Nepali Language/ Literature/ Grammar expert/editor or instructor/teacher in recognized university and/or affiliated colleges
---	------------------------	---	--

Note: For Environmental Impact Assessment (EIA) and Initial Environmental Examination (IEE) Studies, applicants meeting criteria of experts as defined by Rule 7(6) of Environment Protection Regulation 2077, will be given preference.

Interested eligible and competent individuals applicants who wishes to be included in NEAEC roster to indicate his/her interest in providing services in the above mentioned fields are requested to submit their attached application forms and documents in hard copy at NEAEC Office, Trade Tower (Second Floor), Thapathali, Kathmandu or sent by e-mail to hr@neaec.com.np with scan attached application forms and related documents to perform the services within 15 days from the first day of publication of this notice in national newspaper. NEAEC will contact the Experts, who have not submitted the required documents, to submit other documents as deemed necessary. In case if applicants fail to submit those documents on time, NEAEC reserves the right to accept or reject for registration as Expert list of any applications, without assigning any reason whatsoever. The deadline may be rolled over automatically as per company need.

Form 1: Application Letter

Date:

To,

The Managing Director

NEA Engineering Company Limited

Trade Tower, Thapathali, Kathmandu.

Sir,

1. Being duly responsible.....hereinafter "the Applicant"), and having reviewed and fully understood all the required information provided in the Roaster of Experts, the undersigned hereby apply to be included in Roaster of Experts in the field of.....(to be filled by applicant) by NEA Engineering Company Limited (NEAEC) as Expert to carry out the above mentioned assessments and studies in various projects (Hydropower, Transmission/Distribution, Environmental Assessment and related studies of energy sectorial development projects.)
2. Attached to application are photocopies of original documents defining:
 - a. Applicant's eligibility includes registered number from the Nepal Engineering Council (mandatory for Engineers), PAN/VAT certificate/number, Nepali Citizenship, Academic Qualification(s) (higher degree), training(s),previous work experience(s) National and International projects, one passport size photo (digital or original)
 - b. Expected remuneration including Tax (per hour/day/week/month) and terms and conditions including logistic support, accommodation, transportation at site, home and office.
 - c. Experiences status in format given in table 3A.
3. NEA Engineering Company Ltd. and its authorized representatives are hereby authorized to verify the statements, documents, and information submitted in connection with this application. This Application will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information, to provide such information deemed necessary and requested by yourselves to verify statements and information provided in this application, or with regard to the experience and competence of the Applicant.
4. I declare that, I have no conflict of interest in the proposed proceedings and I have not been punished for an offense relating to the concerned profession or business and I have not been declared ineligible.

- 5. I further confirm that, if I would found engaged to prepare the TOR for any ensuing assignment resulting from our work product under this assignment, I myself will be disqualified from the Roaster of Experts and participation in the assignment.
- 6. I, the undersigned, declare that the statements made and the information provided in the duly completed application are complete, true and correct in every detail.

Signature:.....

Name:.....

Mail Add:.....

Mobile No.:.....

Form 2: Curriculum Vitae (including signature)

Form 3A: General Experience in Relevant work.

List of experiences in relevant job.

S. No.	Name of Project	Location	Capacity	Year started	Year Completed	Client	Name of the Responsibilities
1							
2							
3							
4							

Signature of Applicant:

Date:

Note: the experience of the applicant shall be supported with evidence/proof in the form of experience certificates.