

NEA Engineering Company Limited (NEAEC) Call for: Application for Roster/Register of Specialists/Experts/Team Leader (National/International)

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NEA ENGINEERING COMPANY LIMITED (NEAEC)

NEA Engineering Company Limited (NEAEC) is looking forward to carry out Feasibility Study and Detail Engineering of Various Hydroelectric projects and Transmission Line Project. The NEAEC intends to retain the services of as International Experts/Specialists as International Support Team (IST) and National Experts/Specialists as a Technical Support Group (TSG), experienced in the design of large hydraulic infrastructure and high voltage transmission line to provide independent advice and guidance to the project. The objective of the IST and TSG is to review and guide the NEAEC team following national and international standards and practice.

Following experts are expected to provide their services during feasibility study, but not necessarily be limited.

International Support Team-IST International Expert (Foreign National or Non-resident Nepalese)

SN	Job Title	Scope of duties	Qualification
1.	Dam Engineer/Designer	<ul style="list-style-type: none"> Review on type of dam selected, disposition of associated structures (spillways, intake, toe powerhouse, cofferdams, gates.)Based on ground conditions Review on design criteria & loadings Review on stability analysis, method, approach Review on Dam Design Comments/suggestions on construction method, flood handling during construction Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> Master's in Civil/Structural Engineering or Equivalent. Extensive experience with Dam design and construction in all aspects Minimum of 15 years of relevant experience working in Engineering projects, especially hydropower of capacity more than 200 MW during Detailed Engineering Design. Must have experience in design & construction of hydropower/multipurpose Dam height 150 m or more Bachelor Degree with more than 25 years specific experience.
2.	Tunnel and underground Structure Specialist	<ul style="list-style-type: none"> Review investigation report pertinent to underground structures Review/comment on planning of underground structures Review design approach, methods and analysis Apply quick analysis and check the support systems adopted for underground structure Review specifications and construction plans Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> Minimum of an M.Sc. in Tunnel/Geotechnical Engineering or equivalent Minimum of 15 years of working experience in design of tunnel and underground structures during Detailed Engineering Design and construction supervision preferably in hydropower projects of capacity exceeding 300 MW

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3.	Structural Engineer	<ul style="list-style-type: none"> • Review the design approach and methods, loadings and their combinations applied based on the ground conditions • Review the structural analysis and design of super structure and foundation of project components such as intake, surge tank, Powerhouse • Comments on gaps if any on analysis/design and suggest measures for improvement • Review comments on detailing, phasing of construction • Review and guide in 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/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> • Minimum Master's Degree in Civil/Structural Engineering or equivalent. • Minimum of 15 years of working experience in structural design of components of hydropower projects during Detailed Engineering Design and construction supervision
4.	Headworks & Sediment Engineering Specialist	<ul style="list-style-type: none"> • Review planning of headwork's and disposition of component structures • Review the sediment data and sediment load assessed • Review the compliance of performance standard of headwork's, particularly on safety, sediment handling and sustainability of peaking reservoir • Review/suggest measures (if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> • Minimum of an MSc in Water Resource/ Hydropower with specialization in Sediment Engineering/Handling • Minimum of 15 years of relevant working experience as Sediment management/Handling Expert in PROR projects during Detailed Engineering Design preferably in hydropower projects. • Bachelor Degree with more than 25 years specific experience

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5.	Hydropower Engineers/Planner	<ul style="list-style-type: none"> • Review on conceptual layout of the given project • Location of Headwork's, conveyance and powerhouse w.r.t topography, geology & hydrology • Review/comments on planning & optimization of components and suggest measures to optimize project cost • 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 • Reflect the optimal design in the cost estimates and tender documents. • Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> • Minimum of an MSc in Water Resources/ Hydropower Engineering or equivalent. • Minimum of 15 years of relevant working experience in design of hydropower projects of capacity more than 300MW during Detailed Engineering Design and construction supervision • Bachelor Degree with more than 25 years specific experience.
6.	Hydraulic Engineer	<ul style="list-style-type: none"> • Review the layout of structures w.r.t to hydraulics • Review the hydraulics of headwork's, such as spillways, intake and energy dissipaters • Review/comments on hydraulics of conveyance including hydraulic transients and surge analysis • Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> • M.Sc. or higher Degree in Hydraulic Engineering/ Hydropower Engineering or equivalent. • Minimum of 15 years of relevant working experience in design of hydropower projects of capacity more than 300MW during Detailed Engineering Design and construction supervision • Bachelor Degree with more than 25 years and specific experience.
7.	Hydro-mechanical Engineer	<ul style="list-style-type: none"> • Review design and quality assurance of hydro-mechanical components in Interim Design Report • Review and prepare guidelines for design development and assist in providing technical aspects • Review design of Penstock, Gate and valve • Review of steel liner and similar components • Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> • Minimum Master's Degree in Mechanical Engineering or equivalent. • Minimum of 15 years of working experience in engineering project as hydro-mechanical Engineering/expert in design and supervision of projects of capacity $\geq 100\text{MW}$ and $\geq 200\text{-meter}$ head. • Bachelor Degree with more than 25 years specific experience.

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8.	Electro-mechanical Engineer	<ul style="list-style-type: none"> • Review the sizes and dimensions assumed for the EM equipment in view of the physical restrictions of project site • Review of 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 give suggestions in all design criteria, parameters and standards, all major calculations and analysis including all the drawings prepared. • 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 interfacing modality between EM and other Contractors in case of multi-contract construction model. • Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> • Master Degree in Electrical Engineering, or other relevant subject. • Minimum of 15 years of experience in hydropower project out of which 5 years Int'l experience as electro-mechanical Engineering/expert in projects of minimum capacity ≥ 100 MW and unit size, more than 50 MW. • Bachelor Degree with more than 25 years specific experience
9.	Contract Specialist	<ul style="list-style-type: none"> • 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 conforming to the Contractual requirements. • Review and guide 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. • Review/suggest measures (if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> • Minimum Master's Degree in Engineering/contract management or equivalent • Experienced as contract expert in large scale hydropower projects managed by the FIDIC system of contract regulation. • Minimum 15 years of experience in mediation, claim settlement, arbitration of claims. • Bachelor Degree with more than 25 years specific experience

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10.	Construction Planner	<ul style="list-style-type: none"> Review overall planning of project components Assess and recommend construction methodology Assess the rate of progress of construction works Review and guide to optimize the overall Construction Schedule/time and optimize the overall cost Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> Minimum Master's Degree in Engineering/contract management/Construction Planning or equivalent Experience as contract expert in large scale projects managed by the FIDIC system of contract regulation. Minimum 15 years of experience in planning and supervision of hydropower projects Bachelor Degree with more than 25 years specific experience
11.	Powerhouse Planner	<ul style="list-style-type: none"> Review the layout of powerhouse for given topography and geological settings Review/suggest layout/disposition of powerhouse components and associated accessories minimizing powerhouse size/cost Review/ suggest construction planning Review/suggest measures to minimize cost of the specific components Review/suggest measures(if any) to minimize cost of the specific components 	<ul style="list-style-type: none"> Master's in Civil/Mechanical/Electrical Engineering or Equivalent Extensive experience with underground and surface Powerhouse planning/design in all aspects. Minimum of 15 years of working experience in hydropower projects of capacity more than 300 MW with involvement during Detailed Engineering Design and construction supervision Bachelor Degree with more than 25 years specific experience.
12.	Transmission line Engineer/Expert	<ul style="list-style-type: none"> Review the selection of tower, conductor insulators, hardware, earthing materials and accessories for transmission line up to 400 kV. Review the sub-station location and the switchyard design for up to 400 kV 	<ul style="list-style-type: none"> Master's degree in Electrical Engineering, or other relevant subject. Minimum of 15 years of experience in transmission line and substations and at least 5 years of experience as transmission engineer/ expert. The expert must have experience in up to 400KV transmission line and substation projects.
13.	Geotechnical Engineer	<ul style="list-style-type: none"> Develop, and review design calculations, drawings, specifications related to geotechnical analysis prepared by NEAEC team Guide and support the NEAEC team member for geo investigation, instrumentation, and dam foundation design activities based on international dam regulations. Review and provide necessary input related to tunnel and underground structure design Provide input for the preparation of design basis memorandum/ geotechnical baseline report. 	<ul style="list-style-type: none"> Minimum of a M.Sc in Geotechnical Engineering or equivalent. At least 15 years of experience working on project where the geotechnical works dominate the huge chunk of the detailed design at least 5 of those years having experience in geotechnical engineering works on hydropower projects abroad capacity more than 300MW with tunnel option.
14.	Hydrologist/ Hydrology Experts	<ul style="list-style-type: none"> Review the surface water and hydro-geologic study and develop site 	<ul style="list-style-type: none"> Minimum of a M.Sc in Hydrology/Water Resource

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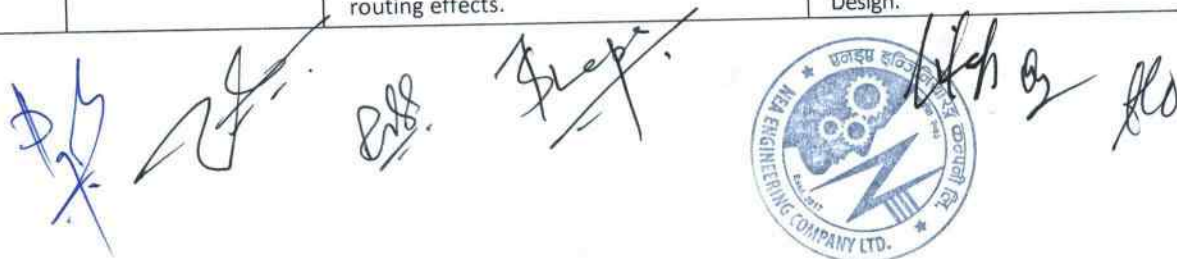
		<p>conceptual models.</p> <ul style="list-style-type: none"> Establish, review, and evaluate water resource, analyze collected data, prepare hydrological /hydro geological model Review and cross check analysis of hydro-geologic data /information, prepare written reports of study findings, and presents 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 	<p>Engineering.</p> <ul style="list-style-type: none"> Minimum of 15 years of working experience out of which, 5 of those years having experience as hydrologist abroad during detailed engineering preferably in hydropower projects.
15.	Seismological Expert	<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 seismological records and reports. Analyze seismic hazard due to the selected design and the failure of the completed structure 	<ul style="list-style-type: none"> Minimum master's degree in Seismology, Earth Quake Engineering or geotechnical earthquake engineering or equivalent. At minimum 15 years of experience in relevant professional works, especially minimum of 5 years which shall be in mapping the parameters required by earthquake resistant design for the structural engineer, preferably with experience in Nepal or lower Himalayan region.
16.	Engineering Geologist/Geologist	<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 frame work. Review over all geological condition of the project site, and guide the NEAEC team to prepare investigation plan egg, mapping, geophysical survey, and sub-surface drilling. Review and analyze the prepared geo map, 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 and design base memorandum of ground structures. 	<ul style="list-style-type: none"> Minimum of a M.Sc. in Geological Engineering with preference given to advanced degrees and training At minimum 15 years of experience out of which, 5 of those years having experience as geologist abroad on projects capacity more than 300MW, preferably with experience in Nepal or lower Himalayan region.
17.	EHV Substation Engineer	<ul style="list-style-type: none"> Review the equipment selection and switchyard design for EHV (220/400 kv 	<ul style="list-style-type: none"> Master's degree in power system engineering or equivalent.



		<ul style="list-style-type: none"> substation). Review and design the lightning and switching surges protection for the switchyard/substation Review the Insulation coordination of the equipment in the substation Review the design calculations for EHV effects such as Corona and travelling waves and the transient stability due to phenomena like switching, power swing etc. Review and design the protection coordination and protection schemes 	<ul style="list-style-type: none"> Minimum 15 years of experience in engineering and at least 5 years of experience as power system engineer in EHV substation (400 kV or higher), preferably in GIS substations or underground. Must have experience in testing and commissioning of substations up to 400 kV.
18.	Tower Design Expert	<ul style="list-style-type: none"> Review the transmission line routing and alternatives and the tower types and locations Carryout the design of different tower types suitable for 132 kV, 220 kV, 400kV. Provide inputs for design basis memorandum preparations. Able to work independently in remote area if required. Design towers suitable for altitude up to 1000m and above 1000m. Prepare the foundation design for different towers. Prepare bill of materials for transmission lines. 	<ul style="list-style-type: none"> Master's degree in Civil/Mechanical Engineering. Minimum of 15 years of experience in transmission line, tower design and at least 5 years of experience in transmission line tower designs suitable for 132 kV, 220 kV and 400 kV voltages up to altitude of 1000m and above 1000m.

Technical Support Group-TSG National Expert with International Experience.

SN	Job Title	Scope of duties	Qualification
1.	Dam Engineer	<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. Work together with hydrologist and reservoir simulation expert for floods and routing effects. 	<ul style="list-style-type: none"> Minimum Bachelor 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 experience for Master's degree and 18 years for Bachelor degree in engineering with 10 of those years having experience in hydropower projects of capacity more than 50 MW in Feasibility / Detail Design.


 The bottom section of the page contains several handwritten signatures in blue ink. On the right side, there is a circular official stamp of NEA Engineering Company Ltd. The stamp features a gear and a lightning bolt, with the text 'NEA ENGINEERING COMPANY LTD.' around the perimeter and '1977' at the bottom. The Nepali text 'नेपाल विद्युत प्राधिकरण' is also visible at the top of the stamp.

SN	Job Title	Scope of duties	Qualification
2.	Geotechnical Engineer	<ul style="list-style-type: none"> Develop, and review design calculations, drawings, specifications related to geotechnical analysis prepared by NEAEC team Guide and support the NEAEC team member for geo investigation, instrumentation, and dam foundation design activities based on international dam regulations. Review and provide necessary input related to tunnel and underground structure design Provide input for the preparation of design basis memorandum/ geotechnical baseline report. 	<ul style="list-style-type: none"> Minimum of M.Sc. degree in Geotechnical or Equivalent. Minimum of 15 years of experience working on engineering projects out of those 10 years as geotechnical engineer in hydropower / similar projects of capacity more than 50 MW. Involvement in large project inside the country with International Consulting / Contractor firms. Involvement in large project inside the country with International Consulting / Contractor firms.
3.	Tunnel Engineer/Expert	<ul style="list-style-type: none"> Review and performs calculations and analyze related to tunnel and underground structure design, excavation, excavation support system. Review and write design reports, specifications and plans, Provide Inputs for design basis memorandum preparation 	<ul style="list-style-type: none"> Minimum of a M.Sc. degree in Geotechnical/Engineering Geologist/Tunnel Engineering. Minimum of 15 years of working experience on tunnel design works for hydropower projects. Have experience with Phase II or similar design software for tunnel and Involvement in large project inside the country with International Consulting / Contractor firm.
4.	Structural Engineer	<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 basis memorandum for the structural design of hydropower project components. 	<ul style="list-style-type: none"> Minimum Bachelor or Higher Degree in Civil / Structural Engineering or Equivalent. Minimum of 15 years' experience for Master and 18 years of experience for Bachelor in large scale engineering projects. Out of which, 10 of those years having strictly been worked as structural design engineer. Fluency in programs like, ETABS, SAP 2000, Staad Pro, PROKON etc. Involvement in large project inside the country with International Consulting firms during design stage. Worked as expert or panel of experts for hydro projects preferably more than 50MW
5.	Hydrologist/ Hydrology Expert	<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 data, prepare hydrological /hydro geological model 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. 	<ul style="list-style-type: none"> Minimum of a M.Sc. in hydrology/water resource engineering or equivalent. Preference with PHD. In hydrology/water resources. minimum of 12 years of experience working as hydrologist Worked as expert or panel of experts for hydro projects preferably more than 50 MW. Involvement in large project inside the country with International Consulting / Contractor firms.

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