

**Terms of Reference (ToR):
Renewable Energy (Micro/Mini Hydro) Expert (Full Time) for Nepal:
Private Sector Led Mini Grid Energy Access Project (MGEAP)**

1. Introduction:

Alternative Energy Promotion Centre (AEPC) is an apex government body under the Ministry of Energy, Water Resources and Irrigation (MoEWRI), established to promote the use of alternative/renewable energy technology to meet the energy needs in Nepal. The Business Model for Private Sector-Led Mini-Grid Energy Access Project, supported by the World Bank (WB), will be implemented by AEPC from February, 2019 (tentative). The objective of the project is to increase electricity access and delivery from renewable energy mini-grids (solar, wind, micro hydro, mini hydro and hybrid) by mobilizing private Energy Service Companies (ESCOs). The project is designed to support RE mini-grids market by introducing conditions to gradually shift from heavily subsidized to commercial model. The project will support mobilization of credit from participating Banks (PBs) to ESCOs for the development of mini grid subprojects.

Nepal is one of the six countries identified for assistance under the Scaling up Renewable Energy Program (SREP) in Low Income Countries. As one of the three programs under the Strategic Climate Fund, SREP aims to demonstrate the social, economic and environmental viability of low carbon development pathways in the energy sector. In particular, the objectives of SREP in Nepal are to: (i) leverage complementary credit and grant co-financing, (ii) bring about transformational impacts through scaling up energy access using renewable energy technologies (RETs), poverty reduction, gender and social inclusiveness and climate change mitigation, and (iii) ensure sustainable operations through technical assistance and capacity building. MoEWRI has designated the Alternative Energy Promotion Centre (AEPC) as the lead agency for SREP-related mini grids renewable energy initiatives and activities. SREP will support this project to fulfill its objectives and target.

2. Background:

Prior to the construction of mini grid subprojects in Nepal, it is required that each and every subproject goes through pre feasibility, a detailed feasibility study and detail engineering design. There are ESCOs for the development and management of mini grid subprojects. In this backdrop, the subprojects of mini grid need to maintain certain technical standard and quality in different stages of the project cycle. For these activities, there is necessity for Micro and Mini Hydro technical standards/specifications to be followed. Hence, the project is looking for Renewable Energy (Micro and Mini) Expert to aid in Micro and Mini Hydro Energy related activities.

3. Objective:

The Renewable Energy (Micro and Mini Hydro) Expert takes key responsibility for implementation support to reach the targets of implementing the Solar and Wind or Hybrid Mini Grid subprojects of optimized design with better quality, comprising various new and innovative technologies, to

<p style="text-align: center;">Terms of Reference (ToR): Renewable Energy (Micro/Mini Hydro) Expert (Full Time) for Nepal: Private Sector Led Mini Grid Energy Access Project (MGEAP)</p>
--

benefit remote rural households, enterprises, communities and ESCOs particularly focusing on women, disadvantaged and marginalized group people leading to more equitable economic growth. Project aspires to step up the rate of implementation of Micro and Mini Hydro mini grid, to optimize the size of mini grid to meet the demand and to improve sustainability and financial viability of schemes by taking a business approach. Each of these subprojects shall be linked with end use promotion; utilize the capacity available in a profitable and sustainable manner; improve the load factors and increase income from electricity sales for sustainable operation and maintenance. S/he will follow the rules and regulations of the AEPC/Project and reports to the Project Manager. S/he ensures that the AEPC is recognized as an effective, efficient and gender proactive institution for the promotion and development of the renewable energy sector in Nepal.

4. Scope of Service (Activities):

The expert will assist PIU for the implementation of Micro and Mini Hydro mini grid subprojects through ESCOs under business model. The expert will support PIU, ESCOs and PBs in survey, preparation of pre-feasibility and detail feasibility studies, the bidding documents, proposals evaluations and supervision of subproject construction. The expert will also assist in the project management, administration and disbursement, providing guidance and training of staff members of AEPC, ESCOs and PBs on mini grid Micro and Mini Hydro systems. The expert will support the PIU to conduct, including but not limited to, the following tasks for Micro and Mini Hydro subprojects:

- Support AEPC and its outreach networks in identifying potential sites for Micro and Mini Hydro mini grid subprojects.
- Prepare guidelines, technical standards/specifications, forms, formats, check lists and other required documents for the Project.
- Support to AEPC and concerned stakeholders for PFS, DFS and DED of potential subprojects
- Review the PFS, DFS and DED reports including implementation schedule, bill of quantity, technical specifications and cost estimates, submitted by ESCOs
- Review detailed engineering design, including the power generation system, technical specifications, distribution system, detailed cost estimates, including the field visits
- Review the proposals/bidding documents prepared by ESCOs for Micro and Mini Hydro subprojects with support from procurement expert.
- Support PIU and ESCOs (for mini grid systems) in evaluation of proposals/bids/quotations by turnkey contractors/ESCOs and preparation of proposal/bid/quotation evaluation reports (technical and financial),
- Support in the review of project detailed design and project implementation schedule proposed by turnkey contractors/ESCOs for Micro and Mini Hydro systems and mini-grid systems,
- Assist PIU for subsidy disbursements process,
- Undertake site visits as necessary for site supervision and monitor progress of individual subprojects,

Terms of Reference (ToR):
Renewable Energy (Micro/Mini Hydro) Expert (Full Time) for Nepal:
Private Sector Led Mini Grid Energy Access Project (MGEAP)

- Support PIU in construction supervision and monitoring of the subprojects and prepare mini-grid Micro and Mini Hydro part of the quarterly progress reports to be submitted to AEPC /MGEAP and World Bank. (a) a narrative description of progress made during the period, (b) changes in the implementation schedule, (c) problems or difficulties encountered, (d) work to be carried out in the next period,
- Support to formulation of the policy, and plan in Micro and Mini Hydro systems and Support PIU staff in other activities related to the development of Micro and Mini Hydro systems as required and capacity building in AEPC.

5. Performance and Reporting Requirement (Deliverables):

The RE Expert shall prepare monthly, quarterly, semiannual and annual report that should incorporate the Specific Technical Assessment monitoring and capacity building activities.

6. Duration of Service:

The Expert will be assigned for full project period with a provision of renew of contract each year and possibilities of further extension, in case of satisfactory performance. The expert is expected to work full time during office hours within Kathmandu valley with required travels outside Kathmandu valley within Nepal on project related matters. The contract will be effective only after the effective date of the Project. The contract will be effective only after the effective date of the Project.

7. RE (Micro/Mini Hydro) Expert's required Qualification and Experience:

- Minimum Bachelor's Degree in Engineering (Civil/Electrical/Mechanical) and at least 7 years of professional experience in the field of Micro and Mini Hydro Energy with completion of Master's Degree in Energy or Engineering.
- Proven knowledge and experience of working in detailed feasibility study, design and evaluation of Micro and Mini Hydro energy systems
- Proven experience in design of technical specifications/technical standards and should have adequate knowledge of applicable standards of Micro & Mini Hydro system components.
- Proven experience of project design, implementation and supervision
- Excellent communication skill, leadership quality and report writing skill
- Working experience in projects funded by the World Bank, ADB or other similar multilateral development partners will be an added advantage
- Knowledge in power systems, preferably in the area of grid integration of distributed energy resources will be an added advantage.

8. Facilities and logistics to the expert by the Client:

The Expert shall be provided with the office space, computer with internet facilities and office furniture. Necessary stationery, printing and copying facilities shall also be provided by the Client.