

**Alternative Energy Promotion Centre (AEPC)  
Renewable Energy for Rural Livelihood (RERL)**

**REQUEST FOR PROPOSAL FOR CONSULTING SERVICES**

**Title of Consulting Services**

**Performance Assessment of Solar Mini Grid Projects**

**Project Name** : Renewable Energy for Rural Livelihood (RERL)

**Office Name** : Alternative Energy Promotion Centre (AEPC)

**Office Address** : Khumaltar , Lalitpur, Nepal

**Financing Agency** : RERL

Date of RFP Issue: 28 June 2023

Deadline for Submission of RFP: 16 July 2023

**Date.....**

Dear Sir/Madam

**Subject: Performance Assessment of Solar Mini Grid Projects**

Please study the evaluation criteria and provide the relevant information to

enable you to submit a proposal, attached are:

- |   |           |
|---|-----------|
| i. Instruction to Offeror                                 | Annex I   |
| ii. General Terms and Conditions of the Contract          | Annex II  |
| iii. Proposal Submission Form                             | Annex III |
| iv. Financial Proposal Submission Form                    | Annex IV  |
| v. Terms of Reference (TOR)                               | Annex V   |
| vi. List of Solar and Solar Wind Hybrid Mini Grid Project | Annex VI  |

Your offer comprising of both technical proposal and financial proposal, in a separate sealed envelope, should reach the following address no later than 16 July 2023

The National Programme Manager  
Renewable Energy for Rural Livelihood (RERL)  
Khumaltar, Lalitpur, Nepal  
Phone: 01-5523775/5523785

Website: <http://www.aepc.gov.np/rerl/> Email:  
[rerl@aepc.gov.np](mailto:rerl@aepc.gov.np)

If you require additional information, we are ready to provide information, but any delay in providing such information will not be considered a reason for extending the submission date of your proposal.

Yours sincerely,

Mr. Satish Gautam  
National Programme Manager (NPM)

**A. Introduction**

**1. General**

The purpose of this RFP is to invite technical and financial proposals from the potential consulting firms who have skill, knowledge and expertise for "**Performance Assessment of Solar Mini Grid Projects**".

**2. Cost of Proposal**

The offeror shall bear all costs incurred during submitting the proposal. The offeror shall bear all costs associated with the preparation and submission of the proposal. RERL will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the evaluation of this proposal.

**B. Solicitation Documents**

**3. Contents of solicitation documents**

Proposals must offer services for total requirement. The Offeror is expected to examine all corresponding instructions; forms, terms and specifications contained in the solicitation Documents. Failure to comply with these documents will be at the offeror's risk and may affect the evaluation of the Proposal.

**4. Clarification of solicitation documents**

The offerors requiring any clarification of the Solicitation Documents can forward their queries in the following email address

Email: [jiwan.mallik@aepec.gov.np](mailto:jiwan.mallik@aepec.gov.np)

**5. Amendment of solicitation documents**

At any time prior to the deadline for submission of proposals, the RERL may, for any reason, whether at its own initiative or in response to a clarification requested by a shortlisted Offeror, modify the Solicitation Documents by amendment.

All offerors that have received the Solicitation Documents will be notified in writing of all amendments to the Solicitation Documents. In order to afford prospective Offerors reasonable time in which to take the amendments into account in preparing their offers, RERL will notify in time.

## **c. Preparation of Proposals**

### **6. Applying for providing services**

The Offerors need to read the RFP including the ToR and prepare a proposal accordingly. The proposal must address all the requirements of the proposal including required documents.

### **7. Language of the proposal**

The proposal prepared by the Offeror and all correspondence and documents relating to the proposal exchanged by the Offeror and the RERL shall be written in the English language.

### **8. Documents comprising the proposal**

The proposal shall comprise the following **mandatory documents**:

- a. Proposal submission form
- b. Organizational Profile/Brochure—describing the nature of business, field of experience, licenses, certification and accreditations
- c. Valid registration and renewal certificate
- d. VAT certificate
- e. Tax Clearance Certificate of 2078/79
- f. Track records of Human resource- with list of similar services relevant to objective and scope of works included in this RFP.
- g. CVs of proposed human resources signed by concern individual
- h. The proposal must provide clear methodology to meet the activities proposed for completing this task

### **9. Proposal form**

The Offeror shall structure the operational and technical part of its proposal as follows:

#### **A. Institutional capacity**

The Offeror will describe its institutional capacity in brief including year of incorporation, facility and equipment, organizational structure, human resources, completed major study in similar field and financial position.

#### **B. In case of Joint Venture, Consortium or Association**

- If the Proposer is a group of legal entities that will form or have formed a joint venture, consortium or association at the time of the submission of the Proposal, they shall confirm in their Proposal that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the joint venture jointly and severally, and this shall be duly evidenced by a duly notarized Agreement among the legal entities, which shall be submitted along with the Proposal; and (ii) if they are awarded the contract, the contract shall be entered into, by and between RERL and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture.

- After the Proposal has been submitted to RERL, the lead entity identified to represent the joint venture shall not be altered without the prior written consent of RERL. Furthermore, neither the lead entity nor the member entities of the joint venture can:
  - a) Submit another proposal, either in its own capacity; nor
  - b) As a lead entity or a member entity for another joint venture submitting another Proposal.
  
- The description of the organization of the joint venture/consortium/association must clearly define the expected role of each of the entities in the joint venture in delivering the requirements of the RFP, both in the Proposal and the Joint Venture Agreement. All entities that comprise the joint venture shall be subject to the eligibility and qualification assessment by RERL.
  
- Where a joint venture is presenting its track record and experience in a similar undertaking as those required in the RFP, it should present such information in the following manner:
  - a) Those that were undertaken together by the joint venture; and
  - b) Those that were undertaken by the individual entities of the joint venture expected to be involved in the performance of the services defined in the RFP.
  
- Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the joint venture or those of its members but should only be claimed by the individual experts themselves in their presentation of their individual credentials.
  
- If a joint venture's Proposal is determined by RERL as the most responsive Proposal that offers the best value for money, RERL shall award the contract to the joint venture, in the name of its designated lead entity. The lead entity shall sign the contract for and on behalf of all other member entities.

They can be described in following headings:

### **i. Management plan**

This section should provide corporate orientation to include the year and state/country of incorporation and brief description of the Offeror's present activities related to program/project evaluation sector. It should focus on services related to the proposal.

This section should also describe the organization unit(s) that will become responsible for the contract, and the general management approach towards a project of this kind. The Offeror should comment on its experience conducting similar programs and identify the person(s) representing the Offeror in any future dealing with the RERL.

### **ii. Resource plan**

This should fully explain the Offeror's resources in terms of personnel and facilities necessary for the performance of this requirement. It should describe the Offeror's current capabilities/facilities and any plans for their expansion.

**i. Proposed methodology**

This section should demonstrate the Offeror's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point, providing a detailed description of the essential performance characteristics of the proposed warranty, and demonstrating how the proposed methodology meets or exceeds the specifications. **This section should explain clearly how the required information as mentioned in the scope of work in the attached ToR will be collected and analyzed.**

Pricing information shall be separated and only contained in the appropriate Price Schedules.

It is mandatory that the Offeror's Proposal numbering system corresponds with the numbering system used in the body of this RFP. All the references to descriptive material and brochures should be included in the appropriate response paragraph, though material/documents themselves may be provided as annexes to the Proposal/response.

Information which the Offeror considers proprietary, if any, should be clearly marked "proprietary" next to the relevant part of the text and it will then be treated as such accordingly.

**ii. Summary Sheet**

The Offeror is required to prepare a summary sheet (Table 1) with information related to Energy Planning.

Table 1 Summary sheet

SN	Name of the program/project	Contract agency	Duration	Amount of contract

**iii. Qualification of the Service Provider**

As per attached ToR

#### **iv. Human Resource Requirement**

As per the attached ToR

#### **10. Proposal prices**

The Offeror shall indicate on an appropriate Price Schedules, the price of a service it proposes to supply under the contract. The VAT should be included in the offer, if applicable. The tax will be deducted at source as per prevailing tax rules of the government.

#### **11. Proposal currencies**

All prices shall be quoted in the Nepalese Rupees (NRs)

#### **12. Period of validity of proposals**

Proposals shall remain valid for One Hundred And twenty (120) days after the date of the Proposal submission prescribed by the RERL, pursuant to the deadline clause. A Proposal valid for a shorter period may be rejected by RERL on the grounds that it is non-responsive.

In exceptional circumstances, the RERL may solicit the Offeror's consent to an extension of the period of validity. The request and the responses therefore shall be made in writing. An Offeror granting the request will not be required or permitted to modify its proposal.

#### **13. Format and signing of Proposals**

The Offeror shall prepare the Proposal. The Proposal shall be in typed or written in indelible ink and shall be signed by the Offeror or a person or persons duly authorized to bind the Offeror to the contract. The latter authorization shall be indicated by written power-of-attorney accompanying the proposal.

The Proposal shall contain no interlineation, erasures, or overwriting except, as necessary to correct errors made by the Offeror, in which case such corrections shall be initiated by the person or persons signing the proposal.

#### **14. Estimated Completion Date**

The desired delivery date for completion of this task is 5 **months** from signing of contract.

#### **15. Payment**

The RERL shall make payments to the Contractor/Offeror after acceptance by the RERL of the invoices submitted by the Contractor/Offeror. The payments will be made on an installment basis based on deliverables.

The payments shall be made in two parts as shown below

(i)	20% of the total cost	Upon Acceptance of Inception Report.
(ii)	50% of the total cost of detailed feasibility study	After Submission of Draft Report
(iii)	30% of the total cost after submission of detailed Feasibility study final report	Upon Approval of Final Report

## D. Submission of Proposals

### 16. Sealing and marking of Proposals

The Offeror shall seal (lahachhap) the proposal in one outer and two inner envelopes, as detailed below.

- (i) The outer envelope shall be  
 Addressed to:  
 The National Project Manager  
 Renewable Energy for Rural Livelihood (RERL)  
 Khumaltar, Lalitpur, Nepal  
 Phone: 01 5444146  
 Website: <http://www.aepc.gov.np/rerl/>  
 Email: rerl@aepc.gov.np

And,

Marked with:

#### " Performance Assessment of Solar Mini Grid Projects "

- (ii) Both inner envelopes shall indicate the name and address of the Offeror. The first inner envelope shall contain the information specified in clause 8 (Proposal Form) above. The second inner envelope shall include the price schedule and price schedule of individual Offeror duly identified as such.

**NOTE**, if the inner envelopes are not sealed and marked as per the instructions in this clause, the RERL will not assume responsibility for the Proposal's misplacement or premature opening.

### 17. Deadline for the submission of Proposals

Proposals must be received by the RERL at the address specified under clause *Sealing and Marking of Proposals* no later than **17:00 hrs, 16 July 2023**.

RERL may, at its own discretion extend this deadline for the submission of Proposals by amending the solicitation documents in accordance with clause *Amendments of Solicitation Documents*, in which case all right and obligations of the RERL and Offerors previously subject to the deadline will thereafter be subject to the deadline as extended.



## **18. Late Proposals**

Any Proposals received by RERL after the deadline for the submission of Proposals, pursuant to clause *Deadline for the submission of Proposals*, will be rejected.

## **19. Modification and withdrawal of the Proposals**

The Offeror may withdraw its proposal after the Proposal's submission, provided that written notice of the withdrawal is received by the RERL prior to the deadline prescribed for the submission of the Proposals.

The Offeror's withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of the Clause Deadline for Submission of Proposals. The withdrawal notice may also be sent by telex or fax but followed by a signed confirmation copy.

No proposal may be modified subsequent to the deadline for the submission of the Proposals.

No Proposal may be withdrawn in the interval between the deadline for submission of proposals and the expiration of the period of the Proposal validity specified by the Offeror on the Proposals Submission Form.

## **E. Opening and evaluation of the Proposals**

### **20. Opening of proposals**

The RERL will open the Proposals in the presence of RERL officers at RERL office.

### **21. Clarification of the proposals**

To assist in the evaluation and comparison of Proposals, the Purchaser may at its discretion, ask the Offeror for clarification of its Proposal. The request for clarification and the response shall be written form and no change in price or substance of the Proposals shall be sought, offered or permitted.

### **22. Preliminary examination**

The Procurer will examine the Proposals to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed, and whether the Proposals are generally in order.

Arithmetical errors will be rectified on the following basis: If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price errors, its proposal will be rejected. If there is a discrepancy between the words and figures the amount in words will prevail.

Prior to the detailed evaluation, the Procurer will determine the substantial responsiveness of each Proposal to the request for Proposals (RFP). For the purposes of these clauses, a substantially responsive Proposal is one which confirms to all the terms and conditions of RFP without material deviations. The producer's determination of a proposal's responsiveness is based on the contents of the proposal itself without recourse to extrinsic evidence.

**23. Evaluation and comparison**

**Method of Selection: Quality and Cost Based Selection**

The following will be the marking of the technical and financial proposals.

Technical Proposal	80%
Financial Proposal	20%

**A. Technical Evaluation**

A score of 800 marks is considered as a total mark for the Technical Proposal. The basis for the evaluation of the technical proposals will be as mentioned below.

<b>1. Relevant experience of firm</b>	<b>100</b>
1.1 General Experience of firm	50
1.2 Experience of firms particularly on proposed task	50
<b>2. Approach and Methodology to carry out the proposed tasks</b>	<b>500</b>
2.1 Approach/Methodology to carry out the task	350
2.2 Innovative approaches for the task	100
2.3 Manning and work schedule	50
<b>3. Composition of team proposed for the task</b>	<b>200</b>
3.1 Qualification of the personnel	50
3.2 Experiences of the personnel in similar tasks	150
<b>Total marks</b>	<b>800</b>

**B. Financial Evaluation**

Only those firms who have secured at least 70% marks in the technical evaluation will be considered for evaluation of their financial proposal.

The Financial Proposal carries a total score of 30 points. The points for the financial proposal will be allocated as per the following formula:

$$\frac{\text{Lowest Bid Offered}^*}{\text{Bid of the Firm/Offeror}} \times 20$$

\* “Lowest Bid Offered” refers to the lowest aggregate price offered by proposers scoring at least 70% points in Technical Evaluation.

**C. Selection**

The technical and financial marks are added and the firm obtaining the highest combined score would

be awarded the contract.

**Total Combined Score**= Technical Score + Financial Score = Max 80 + Max 20

## **B. Award of contract**

### **24. Award criteria, award of contract**

The RERL reserves the right to accept the proposal or reject all proposals at any time prior to award of the contract, without thereby any liability to the affected Offeror or any obligation to inform the affected Offeror or Offerors of the grounds for the Purchaser's action prior to the expiration of the period of proposal validity, the RERL will award the contract to the qualified Offeror whose proposal after being evaluated is considered to be the most responsive to the needs of the organization and activity concerned.

### **25. Purchaser's right to vary requirements**

The purchaser reserves the right at the time of award of the contract to vary the quantity of services and goods specified in the RFP without any change in price or other terms and conditions.

### **26. Signing of the conditions**

After the evaluation of the proposals, **a selected Offeror will be asked to enter into a contract.** Within 15 days of the receipt of the contract, the successful Offeror shall sign and date the contract and return it to the purchaser.

## General Terms and Conditions of the Contract

### 1. Independent Relationship

Nothing contained in the contract shall be construed as establishing or creating between Government and the Organization the relationship of a master and a servant or principal and agent, it being understood that the Organization is an independent person vis-à-vis Government.

### 2. Organization /Expert/Consultant's General Responsibilities

- The organization shall carry out services under this contract with due diligence and efficiency and in conformity with the highest standards of professionals and ethical competence and integrity.
- The Organization shall act at all times so as to protect, and not be in conflict with the interests of Government.
- The organization shall be responsible for the professional and technical services provided by him/her in the implementation of this contract.

### 3. Workmen's compensation and other insurance

The organization shall make his/her own arrangements regarding insurance for the medical expenses and for an accident, death and permanent disability for the period of this contract. All costs involved will be borne by the Organization.

### 4. Source of Instruction

The organization shall neither seek nor accept instructions from any authority other than RERL's authorized agent in connection with the performance of services under this contract.

### 5. Prohibition on conflicting activities

The Organization shall ensure that he/she will not directly/indirectly engage in any activity that would conflict with those of RERL in respect of this evaluation.

### 6. Officials no to benefit

The Organization warrants that no RERL has been or will be admitted by him/her to any direct/indirect benefit arising from this contract or award thereof.

### 7. Assignment

The Organization shall not assign, transfer, pledge or make other disposition of this contract or any other parts thereof rights, claims or obligations under this contract, without prior written approval of RERL.

### 8. Records, Accounts, Information and Audit

- The organization shall maintain accurate and systematic records and accounts in respect of the services to be performed under this contract.
- The Organization shall furnish, compile or make available at all times to RERL any records or information, oral or written, which RERL may reasonably request for in respect of the services to be performed under this contract.

- The Organization shall allow RERL or its authorized agents to inspect and audit all such records or information upon reasonable notice.

### **9. Language**

Unless otherwise specified in this contract, English language shall be used by the Organization in all written communications to RERL with respect to the services rendered and with respect to all documents procured or prepared pertaining to such services.

### **10. Equipment of property**

Equipment or property furnished to the organization with funds supplied or reimbursed by the RERL or its agent shall be the property of the RERL and such equipment shall be returned to the duly authorized official of RERL upon completion of the services, conclusion of this contract or upon completion of the services, conclusion of this contract or upon termination thereof or when no longer required by the Organization. Such equipment or property when returned to RERL shall be in the same conditions as when delivered to the Organization, subject to the normal wear and tear. The organization shall in any event, be liable to RERL for the loss of or damage to such equipment or property through his/her fault or negligence.

### **11. Confidential Nature of Documents**

All maps, drawings, photographs, mosaics and plans.

### **12. Amendments**

The terms and conditions of this contract may be amended only in writing signed by both parties to this contract or their duly authorized representatives.

### **13. Obligation to Inform RERL of change in condition**

The organization shall promptly and fully notify RERL in writing of any conditions, which interferes, or threatens to interfere, with successful carrying out of the services under this contract. Such notice shall not however relieve the Organization of his/her obligations to continue to provide services under this contract. Upon receipt of such notice, RERL shall take such action as in its sole discretion it considers to be appropriate or necessary under the circumstances.

### **14. Taxation**

The Organization shall be liable for any tax levied on the remuneration and allowances paid as per this contract. Income tax on the remuneration and allowances paid to the organization will be deducted at source.

**Proposal Submission Form (Company Letterhead)**

The National Programme Manager  
Renewable Energy for Rural Livelihood (RERL)  
Kupondole, Lalitpur, Nepal  
Phone: 01-5523775/5523785  
Website: <http://www.aepc.gov.np/rerl/>  
Email: [rerl@aepc.gov.np](mailto:rerl@aepc.gov.np)

Dear Sir,

Having examined the Solicitation Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to provide services to conduct evaluation of the "Orientation on Localizing SDG and Preparation Municipal Energy Plans" for the sum as may be ascertained in accordance with the Price Schedule attached herewith and made part of this proposal.

We undertake, if our proposal is accepted, commence and complete delivery of all services specified in the contract within the time frame stipulated.

We agree to abide by this Proposal for a period of 120 days from the date fixed for opening of Proposals in the invitation for proposal, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

We understand that you are not bound to accept any proposal –whole or part –you may receive.

Dated this day/Month of year  
Signature  
Name Position  
Stamp

Duly authorized to sign Proposal for and on behalf of

**Financial Proposal Submission Form**  
**PRICE SCHEDULE**

The Consulting Firm/Contractor is asked to prepare the Price Schedule along with the cost breakdown (as provided in this annex IV below) in a separate envelope. All prices/rates quoted must be inclusive of all taxes. The Price Schedule must provide a detailed cost breakdown. Provide separate figures for each functional grouping or category. The format shown on the following pages should be used in preparing the Price Schedule. The format includes specific expenditures, which may or may not be required or applicable but are indicated to serve as the examples. Therefore, it should be considered as broad guidelines for Price Schedule (s).

**Cost Breakdown by Cost Component**

**Financial Proposal**  
**Performance Assessment of Solar Mini Grid Projects**

S.N.	Particulars	Man-days					Rate in NPR (II)	Total Amount in NPR (III=IxII)	
		Inception	Field Study	Analysis	Reporting	Total Man-days (I)			
A.	Human Resources								
1	Team Leader	14	6	12	11	43			
2	RE Expert	15	25	12	7	59			
3	Socio-Economist	4	20	8	4	36			
4	Field Engineers	6	154	3	13	176			
B.	<b>Travel cost and DSA</b>								
C.	<b>Total (A +B)</b>								
D.	<b>VAT (13%)</b>								
	<b>Total (C+D)</b>								

Total in words .....

.....

...

## **Terms of Reference (ToR)**

### **for**

## **Performance Assessment of Solar Mini Grid Projects**

### **1. Background**

Energy services play a key role in meeting basic needs and enabling productive activities. Access to affordable, reliable, sustainable and modern energy to deliver these services is therefore seen as an essential requirement. Despite having huge potential for energy generation by harnessing its immense hydro and also other renewable resources (Solar, Wind etc.), Nepal is still overwhelming dependent on firewood and other biomass sources for its primary energy. Among the electrified households, 90% of the population has access to electricity, among whom 4% are from isolated off grid micro hydropower and solar PV systems. Grid electricity is provided by Nepal Electricity Authority (NEA) through either retail or bulk sales through Community Rural Electrification schemes. Alternative Energy Promotion Centre (AEPC) through its various programmes promotes off-grid renewable energy systems targeting rural population.

Alternative Energy Promotion Centre (AEPC): The AEPC is the governmental nodal agency for promotion of renewable energy in the country. It is an autonomous governmental agency governed by a Board. AEPC is implementing several programmes and projects with the objective of promoting off-grid isolated systems with both financial and technical assistance. Since beginning, AEPC is promoting Solar Home System (SHS) along with other off-grid technologies. In 2010, AEPC started promoting Solar and Solar-Wind Mini Grid (SMG) technology because of the benefits it offers. It is understood that SMG offers a better economy of scale, more reliable supply, quality electricity, manage consumption among beneficiaries, possibility to run productive end-use loads among several other benefits over SHS. So far more than 37 SMG projects have been developed in Nepal with financial and technical assistance from AEPC and its programmes.

Regional/International experience shows that such RE-based off-grid mini-grids, which have brought good results and success in reaching the neediest people, have contributed significantly to livelihood enhancements and greenhouse gas reduction. However, the functionality of such ventures in Nepal is a major concern, as many of them are found to be unsustainable in terms of performance, service delivery and revenue generation. On the other hand, the last mile electrification scheme of AEPC/NEA suggests that out of approx. 215,000 HHs without electricity, 97000 HH are being connected through off-grid solutions. Solar mini-grid can be the most suitable option for meeting the immediate needs of those living in the most remote villages of Nepal.

Thus, AEPC intends to undertake an extensive study to evaluate the multidimensional impacts it has made in rural electrification. This TOR has been prepared to select a consulting firm to carry out sustainability assessment of existing solar mini-grids constructed in Nepal. The assessment include quality of electricity services in the electrified areas, analysis of various institutional structures, revenue generation, social dimensions and economic viability. The study findings and recommendations can be widely used to amend subsidy policy and delivery mechanism of AEPC-supported SMGs and revision of implementation modalities of various other projects to be developed with support from various development partners.

### **2. Rationale of the study**

The outcome of the study will provide basis for devising suitable policies and strategies for the AEPC to clearly spell out the tiered energy access concept and provide support to rural communities and households to engage in economic activities and help uplift their livelihood. Various studies have revealed the shortcomings in the governance and management of off-grid small-scale systems managed by the rural people, lack of reliability is one of the major factors for very low productivity and thus economic returns. The institutional analysis would



provide details on existing management practices with suggestions for future improvements taking into consideration various attributes of the contexts in which projects are operating. The government has spent a lot in terms of subsidy, technical assistance and institutional arrangements to ensure the sustainability of these systems as well as the economic development of rural areas. This requires a detailed investigation of the existing Solar PV Mini Grids and determining the actions required for ensuring its economic viability of it. This will provide a basis for related agencies to focus on the type of support system required for the wider promotion of Solar Mini Grid in Nepal.

### **3 Objective**

Overall objective of the study is to assess quality and quantity of electricity services with Solar and Solar-Wind Hybrid Mini Grid (SMG) under different institutional structures and propose suitable measures for ensuring economic viability of these options. Thus, the study will specifically focus on the followings;

- I. Assessment of quality and quantity of electricity services provided in rural Nepal by SMG.
- II. The tiers of energy/electricity access and cost estimation for energy services in different tiers of electricity access as per the Multi Tier Framework of Universal Energy Access.
- III. Assessment of Technical Robustness of designed system and provide the shortcoming in the design and installation including power generation components, T&D line and protection systems.
- IV. Analysis of governance and management practices and institutional structures in SMG through appropriate framework and a thorough assessment of the financial and economic viability and key factors for ensuring such viability.
- V. Policy recommendations and future course of actions to provide reliable and affordable energy/electricity for all.

### **4. Scope of the work**

The consulting firm shall design appropriate questionnaire and devise methodology in capturing the data **of at least 12 Solar/Solar-Wind Mini Grid** sites from the list given in Annex VI in consultation with AEPC. The scope of works under this particular assignment includes;

#### **4.1 Literature review:**

- i) Review of project specific document available in the AEPC
- ii) International practices, academic publications, publications of WB and other development partners
- iii) Literature review on institutional mechanism and economic viability of the energy services needs to be carried out through interaction and available secondary information documents.
- iv) The consulting firm will also review literature on financial and economic viability of rural energy systems in the developing countries and compare it SMG of Nepalese contexts.

#### **4.2 Field Visit (at least in 10 solar mini grid sites)**

- Develop the questionnaire and get review from AEPC/RERL officials. AEPC shall provide input while preparing field survey questionnaire. The consultant needs to prepare proper tabulation in excel/SPSS or other appropriate format to present the information from the questionnaire.
- The questionnaires should cater all the objectives mentioned above.
- During field visit the consultant has to also carry out at least;
  - 1) Focal group discussions
  - 2) Meeting with users' committee, business groups, project operator and installer company

3) Meeting with representatives of local government, schools, health posts

#### 4.3 Data Analysis and Reporting:

The initial analysis of the survey data will be carried out by the consultant in close coordination with AEPC. Report will be prepared and submitted by the consultant with analysis and recommendations, in close coordination with the AEPC team. Expected outputs are:

- Inception report
- E-version of survey data uploaded in excel or any suitable format and copy of relevant information from the sites.
- A final report including
  - 1) Technical performance of each SMG and SWMG. This should be analyzed with various parameters including power quality, availability, affordability, reliability etc.
  - 2) Timely and quality of after sales services provided by installer company. It should be triangulated with installer company, users, mini grid officials.
  - 3) Timely and quality of support provided by installer company and capacity of operator/users for sustainable operation. It should be triangulated with installer company, users, mini grid officials
  - 4) Social and environmental influences of the mini grid projects
  - 5) To review the appropriateness and clarity of roles and responsibilities of stakeholders and their level of satisfaction with the project achievements.
  - 6) Institutional analysis including structures in place in different SMG and their effectiveness in reliable and quality electricity supply to households and businesses. And suggest most suitable implementation modality.
  - 7) Productive End Uses (PEU) and their performance - adequacy of technical knowledge to promote PEU
  - 8) Financial and economic viability of Solar Mini Grid plants supported by AEPC. Detailed discussion on under what/which conditions does a financially unfeasible project becomes attractive for private investment, the amount of subsidy required. A recommendation on how subsidy should be designed and targeted.

#### 5. Qualifications and Experience

The human resource required for the assignment needs to be proposed by the consulting firm with Signed CV of key professionals involved. The team comprises of Team leader, Renewable Energy Expert, Socio-Economist and Field Enumerators. A summary of expert qualifications and key expertise is listed below.

	Academic qualification	Experience (Min)	Key Expertise
Team Leader	Master's Degree with minimum 15 years of proven experience in Renewable Energy Policy, Applied Economics, Finance or any other relevant sector	15 years	RE-based off-grid solutions, Econometrics Modelling, Sustainability Assessment
Socio-Economist	Master's Degree in Sociology, Business,	15 years	Energy and economics, sustainability, Business Development, Entrepreneurship

	Economics or any other relevant		
RE Expert	Master's degree in Renewable Energy/Electrical/Electronic or any other relevant	10 years	Renewable energy, Off-grid solutions, Solar Mini-Grids
Field Enumerators (2)	Bachelor's degree (1 engineer and 1 sociologist or business)	2 years	Solar Mini-Grids, Field Study, Interviews/FDGs, social/business expert

The consultant team will be responsible for designing the study, conducting the fieldwork, analyzing data/results and writing reports.

## 6 Deliverables

The followings are the suggested deliverables of the assignment. All reports have to be in English language.

- a. Inception report detailing out the methodology and action plan within 3 weeks of signing of contract
- b. Draft report within 4 months after signing of contract
- c. Final report incorporating comments and suggestions from AEPC -3hard copies and soft copy

## 7 Period

The duration of this task shall be maximum up to 5 months from the date of signing of contract agreement.

## 8 Duties and Taxes

The consultant firm shall pay all tariffs, duties, other taxes or charges levied by the GoN at any stage during the execution of the work.

## 9 Documents to be submitted by the Firm (Eligibility Criteria)

S.No.	List of Documents
1	Copy of Company/Firm Registration Certificate with updated renewal
2	Copy of VAT Registration Certificate
3	Copy of TAX Clearance Certificate of FY 2078/79
4	Latest Signed Resume of resource persons (as per ToR)
5	Financial Proposal with signed cover letter including VAT (as per given format)
6	Experience of Firm and individual that signifies the working knowledge in lift irrigation system.

## 8. Acceptance of Proposal

All rights are reserved with AEPC/RERL either to approve or disapprove any proposal without giving any reasons whatsoever. If needed, the consultant will be asked for modifications and presentations of the proposal before approval.

### List of potential projects for performance assessments

S.No	Name of Project	Province	District	RM/Municipality	Ward No.	Installed Capacity(kWp)	Households	Year of Installation
1	Bhorleni Solar Wind Mini Grid	Bagmati	Makawanpur			25	115	2013
2	Tatopani Solar Wind Mini Grid	Karnali	Jumla			26	120	2014
3	Narakot Solar Wind Mini Grid	Karnali	Jumla			80	341	2017
4	Dubung Solar Mini Grid	Gandaki	Tanahu			18	85	2015
5	Harkapur Solar Mini Grid	Koshi	Okhaldhunga			31	150	2016
6	Sugarkhal Solar Mini Grid	Sudurpashchim	Kailali	Mohanyal RM	6	75	216	2019
7	Malladehi Solar Mini Grid	Sudurpashchim	Baitadi	Purchaudi Mun.	8	30	110	2019
8	Susta Solar Mini Grid	Gandaki	Nawalparasi	Susta RM	5	100	266	2020
9	Thabang Solar Mini Grid	Lumbini	Rolpa	Thabang RM	1&2	150	382	2021
10	Psheypoksundo Solar Mini Grid	Karnali	Dolpa	Psheypoksundo Rural Municipality	4	50	176	2022
11	Barekot Solar Mini Grid	Karnali	Jajarkot	Barekot Rural Municipality	5	170	404	2022
12	Kabilashi DC Solar Mini Grid	Madhesh	Sarlahi	Kabilashi Rural Municipality		6	48	2018