Request for Proposal (RFP)


February, 2020

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Background Information

Net-metering or Net Energy Metering (NEM) is an enabling policy mechanism which is designed to promote investment in Renewable Energy. NEM usually uses a single, bi-directional meter and can measure current flowing in both directions. NEM policies can vary significantly by country and by state or province. Most NEM financial laws involve monthly roll over of kWh credits, a monthly connection fee, monthly payment of electricity used from grid and surplus electricity sold by generator.

NEM schemes have proven successful in attracting demand-side investment in Distributed Generation (DG) due to their simple and understandable form. However, these schemes also pose business and technical challenge to utilities and regulators. Some Electric Utilities complain about loss of revenue with NEM in their jurisdiction. Utilities state that the NEM customers do not pay the full cost of service to use the grid; which remains available to them to get electricity from utilities any time when their systems cannot generate enough power to meet their own demand. To compensate for this loss, if utilities charge more from non-NEM customers; it will be unfair to them. On the contrary NEM customers argue that the benefits of NEM outweigh the revenue loss to the utility, as NEM reduces strain on the grid, lowers its O&M costs and reduces future investments in expanding generation / transmission / distribution infrastructure. On technical front, any fault in NEM equipment may cause issues with grid and/or distribution system of the utilities.

Introduction

In SAARC Region, several countries such as India, Pakistan and Sri Lanka have already introduced and experienced NEM schemes, while others such as Bangladesh and Nepal are now at the final stages of introducing these in their countries. SAARC Energy Centre (SEC) intends to undertake this study to determine the viability of NEM schemes for Distribution Utilities of the SAARC countries.

The study shall be outsourced to a short-term Expert(s) / party selected and hired by SEC. The Expert(s) / party shall be required to thoroughly explore / analyse / address post-NEM financial and technical challenges faced by distribution utilities, grid operators and other relevant stakeholders of respective countries. The Expert(s) / party shall conduct the study in line with given TORs and shall build his / her research while taking in account the minimum contents proposed by the SEC for the study.

Objectives of the Study

The overall objective of this research study is to increase the deployment of the renewable energy technologies in SAARC countries through the use of NEM mechanisms. The study will assess and provide solutions to all technical and financial challenges faced by the Distribution Utilities while
implementing NEM technology. The aim is to facilitate the distribution utilities for speedy adoption of NEM mechanisms.

Terms of Reference (TORs) of Study
The major aspects of this research study are as under:

a) The research study is expected to cover the areas suggested in Proposed Minimum Contents (given at ANNEXURE–IV) in light of the objectives defined earlier in this document.

b) The overall approach of the research should be to provide solution of the difficulties faced by the Distribution Utilities in respect of NEM technologies.

c) In the study, an in-depth and precise research (to the extent of individual Distribution Utilities) shall be preferred over generic or broad natured appraisal. Similarly, the quantified results shall be preferred over the qualitative assessments / estimations.

d) The primary beneficiaries of this research study are Distribution Utilities. Though, authors are expected to investigate the research subject for all downstream stakeholders in the value chain; but should do so only from the perspective of Distribution Utilities.

e) The research report should be a useful tool for Distribution Utilities; rather than a generic and broad-based high-level appraisal.

f) The research is expected to be based on commercially matured NEM technologies and the technologies in nascent stage may be avoided.

g) The style of the study report should be factual; and suitable for professionals / experts of the field as well as technical audience.

h) As far as possible primary sources should be preferred over secondary sources. All sources should be properly documented. Un-sourced information or secondary sources like newspapers should not be used in the report. Authentic scholarly internet sources can be used for this research.

i) No interviews, or human-stories or case-studies should be made part of research report. However, conclusions / results drawn from these can be used.

j) The pictures / exhibits taken from other sources for incorporation in this study report should be of good quality and of high resolution.

k) The viable and proven solutions / examples / best practices of countries or regions which have similar or near-similar condition as of South Asian countries can be used in this research. Likewise, the comparison (if any) should be drawn on similar lines.

l) Regional level assessments or recommendations for South Asia are not desirable.
**General Terms & Conditions**

Following terms and conditions will apply for the purpose of this study:

a) The selected and hired Expert(s) / party will enter into a service agreement with SAARC Energy Centre to conduct the study.

b) The Expert(s) / party will report to the Director SAARC Energy Centre and will remain in close contact with SEC Programme Coordinator deputed for this particular study.

c) E-mail/ Skype / Video Link will be the preferred mode of communication between Expert(s) / party and SEC.

d) To facilitate the Expert(s) / party in the conduct of the study, SEC will give free access to all relevant data available with it. This shall include all SEC publications, reports / data / information held in SEC library and data bank. Other than this, collection of all additional data/information, for the purpose of this study, will be the sole responsibility of the Expert(s) / party.

e) Expert(s) / party will design and structure the study by taking into account, but not limited to the TORs and Proposed Minimum Contents of the study, as suggested by SEC. Expert(s) / party is/are strongly encouraged to add or improve the contents of study in consultation with SEC.

f) Expert(s) / party will submit the broad Table of Contents along with any further additional information about the study within three weeks of the signing of the service agreement.

g) The expert(s) / party will regularly submit the draft of the study (electronic copy) conducted / completed till date, on monthly basis to SEC for mutual coordination and timely feedback from the Program Coordinator.

**Duration of the Assignment**

a) The expert(s) / party will submit first draft report of the study (completed in all respects) within four months of the signing of the service agreement. SEC shall review the draft and notify the expert(s) / party of its evaluation. Any weaknesses / shortcomings / improvements pointed out by SEC shall be addressed by the expert(s) / party in the draft study report accordingly.

b) SEC will send the improved draft study report to the selected reviewer(s) for peer-review and comments. The Expert(s) / party will incorporate the comments / suggestions of the reviewer to finalize the study report.

**Deliverables**

After finalization of the study, the Expert(s) / party will submit the following:

a) Soft copy of Final Study Report (editable version)

b) A comprehensive Power Point presentation covering the important features and the outcome of the study.
Payment Terms
SEC will pay modest honorarium (all-inclusive and after deduction of tax/duty) to the Expert(s) / party after completion, peer review and acceptance of the final study report by the Centre.

Hiring Process of Expert(s) / Party
All interested Expert(s) / party are encouraged to submit their technical & financial proposals to undertake this study. The Expert(s) / party may be an individual or individuals teamed up to strengthen their expertise for addressing technical, commercial, financial aspect of the study. Hiring process will be as following:

a) Submission of technical & financial Proposals by Expert(s) / party by the set deadline.

b) Screening of technical & financial proposals by SEC.

c) Technical evaluation of screened proposals by Evaluation Committee for shortlisting of suitable Expert(s) / party.

d) Shortlisted Expert(s) / party shall be interviewed on Skype / Video Link.

e) Financial evaluation of the proposals of shortlisted Experts(s) / party.

f) Final selection will be based on combined score of technical evaluation (70% weightage) and financial proposal (30% weightage).

g) The successful Expert(s) / party will be intimated and offered to enter into an agreement with SEC to undertake the study. In case he / she declines, next highest Expert(s) / party will be offered to proceed with service agreement.

Format of Proposal
All proposals should be accompanied by a covering letter indicating ability and availability to undertake the study within the stipulated timeframe. The proposal shall comprise of two separate parts: Technical Proposal and Financial Proposal. The Technical Proposal should have following major components:

a) Methodology and Work Plan to conduct the study (guidelines given in Annexure – I)

b) Curriculum Vitae (CVs) of the Expert(s) / party as per template in Annexure – II. Scanned copies of testimonials / degrees / certificates should be attached with the CV.

c) Relevant experience for conducting the above study.

Financial proposal should stipulate a lump-sum amount in US Dollars to undertake the assignment as per format at Annexure – III.
Methodology and Work Plan for Performing the Assignment

The outline of Technical Proposal (maximum three pages, including charts and diagrams if any) inter-alia covering the following:

a) **Methodology**: You are expected to briefly specify your understanding of the objectives and TORs of the study/assignment. Please describe your methodology for achieving the objectives, the TORs and meeting the expected outcomes within time frame specified for the study. Also, please highlight potential difficulties in carrying out the study and how you will address these.

b) **Work Plan**: The work plan should transform your methodology into clearly distinguished activities along with their timelines. Please specify the nature and duration of each activity, phasing and inter-relations, milestones and delivery dates of the report (*take 1 March 2020 as reference date to start*).
# Standard Template for Curriculum Vitae

**Assignment / Study / Task Applied for**

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## Languages

(Proficiency in speaking, reading & writing of each language by Excellent, Good, Fair or Poor)

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## References

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### Academic Qualification / Education *(College/ University & other higher educational institutions)*

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### Professional Courses, Trainings etc *(professional courses / short courses (other than academic courses) attended)*

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## Work / Job Experience (All positions held since graduation)

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## Experience Specifically Related to This Assignment / Study / Task

(Related projects, research work and other (local/ SAARC region/ international))

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<th>Brief Description of Project / Research / Field Work Undertaken</th>
<th>Organization and Country / Location</th>
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## Format for Financial Proposal

<table>
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<tr>
<td>Study on &quot;Technical Issues and Financial Viability of Net-Metering Mechanisms from the Perspective of Distribution Utilities&quot;</td>
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It is certified that the given RFP has been thoroughly read, understood and agreed upon. The Expert / party undertakes to complete the assignment within stipulated time at the total cost (inclusive of all taxes/deduction) quoted above.

**Expert / Team Leader:** ________________________________

**Signature with date:** ________________________________
Proposed Minimum Contents

for


These are the minimum contents propose by SEC for this study, and Expert(s) is strongly encouraged to include (or exclude) all topics / data / information as per his / her experience and approach to make this study comprehensive. Major areas to be covered under this study are (but not limited to):

- Foreword
- Acknowledgement
- Table of Contents
- List of Abbreviations
- List of Tables
- List of Figures
- Executive Summary

1. Introduction
   1.1 Background and Introduction
   1.2 Objectives of the study
   1.3 Scope of the study
   1.4 Methodology of the study
   1.5 Limitations of the study

2. Review of Net Energy Metering in SAARC Countries
   (This chapter should provide detailed review of different NEM technologies / mechanisms / Systems / deployment in each Distribution Utility and in each country of SAARC, with current status and forecasted deployment (next 5 years), and other related / associated technologies.)
   2.1 NEM Technologies (both existing and new in market) for all scales / sizes (small, medium and large)
      2.1.1 Solar PV
      2.1.2 Wind
      2.1.3 Biomass
      2.1.4 Technology 4
      2.1.5 Technology 5
2.1.6 All other technologies

2.2 Other related / associated technologies, areas and systems (w.r.t NEM)

2.3 NEM Technology 1 (e.g. Solar PV). *(Please do it for each country and for each scales / size (small, medium and large)).*

2.3.1 NEM System and other requirements for the technology

2.3.2 Capital and Operational costs and other important parameters w.r.t NEM deployment

2.3.3 Prevailing NEM mechanisms associated with technology

2.3.4 Strengths, advantages, weaknesses, issues and etc. etc.

2.3.5 Footprint of this technology (with NEM and without NEM)

2.3.6 Discussion on Net-metered systems for each utility of each member states

2.3.7 All other important aspects of NEM necessary for this study

2.4 Forecasted NEM deployment for next five year; *(for each country as well as each Distribution Utility in that country (taking in account their conditions / settings/ circumstances)).*

2.4.1 Discussion on all parameter to be taken in account for calculation of forecasted deployment.

2.4.2 Development of a model to calculate year wise increase in deployment *(preferably Excel based)*

2.4.3 Calculate the deployment (each country and each electric utility)

2.4.4 Discussion on calculated results *(w.r.t increasing deployment of NEM technology with the Distribution Utility)*

2.5 NEM in other countries *(best examples; preferably of countries with near-similar conditions as in SAARC as far as possible)*

3. **NEM Related / Associated Technical Challenges** faced by Distribution Utility and downstream value chain stakeholders only. *(Evaluate the technical challenges and other interrelated challenges faced by the Distribution Utility with various levels of deployment of Net-metered systems in its jurisdictions)*.

3.1 Safety Standards and Operating Environment Challenges

3.1.1 Transmission of unwanted current in the distribution grid / local grid

3.1.2 Reverse Power Flow to transmission lines

3.1.3 Islanding mode

3.1.4 All other equipment / system / operation related challenges
3.2 Interconnection Challenges
   3.2.1 Equipment Standards and other associated challenges
   3.2.2 National Certification and Labelling and associated challenges
   3.2.3 International IEC and/or other standards and associated challenges
   3.2.4 Interconnection Challenges
   3.2.5 All other interconnection, grid and other associated challenges

3.3 Quality Assurance and Quality Control Challenges
   3.3.1 Net-Meter equipment specifications, testing and calibration
   3.3.2 System Design and Installation challenges
   3.3.3 Quality of work-related issues
   3.3.4 Commissioning and Operations related issues / challenges
   3.3.5 All other quality control / assurance challenges and issues

3.4 Grid operation, safety and reliability challenges
   3.4.1 Fluctuation and Imbalance in the voltage
   3.4.2 Electrical disturbance by loads
   3.4.3 All other distribution grid related challenges and issues

3.5 Other related technical issues of Distribution Utilities

3.6 Other associated issues and difficulties
   3.6.1 Legislation, policy, rules and regulations related challenges
   3.6.2 Human resource and Capacity issues
   3.6.3 Institutional capacity within all involved stakeholders
   3.6.4 Administrative Challenges like, approval processes, on-site inspections, etc. etc.
   3.6.5 Any other(s)

3.7 Discuss Solutions to counter each above discussed challenge / issue / shortcoming / etc.

3.8 Best Practices from other countries with similar or near-similar conditions to South Asia
   3.8.1 How to intelligently apply the best practices in SAARC countries

4. Financial and Commercial Challenges and Issues faced by Distribution Utility and downstream value
   chain stakeholders only. (Evaluate the financial and commercial challenges and other related challenges faced by the distribution utility with various levels of deployment of Net-metered systems in its jurisdictions.)

4.1 Energy Accounting, Financial and Commercial Challenges
   4.1.1 Energy Accounting methods
   4.1.2 Various business models between utility and consumer
4.1.3 Billing challenges / issues
4.1.4 Revenue recovery challenges / issues
4.1.5 Settlement means between utility and consumer
4.1.6 Unaccounted costs to utilities
4.1.7 Operation and Maintenance challenges / issues for Utility equipment related to NEM
4.1.8 NEM related Issues faced by or due to any other stakeholders
4.1.9 Tariff burden on non-metered consumers / users
4.1.10 All other accounting and commercial related challenges / issues and implications

4.2 Financial environment for NEM in each country
4.2.1 Financial challenges faced by utilities as a result of deployment of NEM
4.2.2 Any special conditions for some utilities
4.2.3 Financial support available to utilities and downstream stakeholders
4.2.4 Risk mitigation strategies for adverse effects of NEM
4.2.5 Penalties, subsidies, loans, etc. etc.

4.3 Challenges to current NEM business model between Distribution Utility and Producer

4.4 New and Successful Business Models
4.4.1 Cash payment
4.4.2 Lease to own model
4.4.3 Sale/Purchase agreement
4.4.4 All other(s) business models

4.5 Discuss Solutions to counter each above challenge / issue / shortcoming / etc

4.6 Best Practices from other countries (with similar or near-similar conditions to South Asia)
4.6.1 How to intelligently apply the best practices in SAARC countries

5. Financial Viability of NEM (for Distribution Utility and downstream value chain stakeholders only.
(Estimate / gauge and analyse the financial viability of NEM for the distribution utility with various levels of deployment of Net-metered systems in its jurisdictions.)

5.1 Short, medium and long-term financial Implications of NEM on Distribution Utilities

5.2 Financial analysis for Distribution Utilities
5.2.1 Parameters for assessment of financial viability
5.2.2 Formulate Generic MS-Excel based model for NEM financial viability (for Distribution Utilities)
5.2.3 Details of model and variables used with assumptions / conditions made
5.2.4 Results of the financial model for each Distribution Utility
5.2.5 Discussions and analysis of the results for each Distribution Utility and each SAARC country

5.2.6 Any other aspect for comprehensive financial analysis

6. **Economic Viability of NEM** (for Distribution Utility and downstream value chain stakeholders only. 

*(Determine and gauge the economic viability of NEM for the Distribution Utility with various levels of deployment of Net-metered systems in its jurisdictions.)*

6.1 Short, medium and long-term economic Implications of NEM on utilities

6.1.1 Opportunities and Challenges; Strength and Weaknesses for each utility

6.2 SWOT analysis of NEM for each utility

6.2.1 Discussions on SWOT results for each utility and each SAARC country

6.3 Cost-benefit-Analysis (CBA) of NEM for each country *(not for distribution utility)*

6.3.1 Discussion on results of CBA

7. **Conclusion and country-wise Recommendations**

Conclusions of the study report and recommendations to be presented here. *(Recommendations for each utility in the SAARC countries (if applicable) shall also be given.)*

8. **Bibliography**

Please follow *APA Fifth Edition* method in your study report for citing the work of others.