

Prequalification Document

Certification of Vendors/Installers/Service Providers for Installation of Wind and Solar PV Systems for Net Metering up to 250 kW capacity



ALTERNATIVE ENERGY DEVELOPMENT BOARD

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Table of Contents

1. Introduction	3
1.1 Background on Net Metering	4
1.2 Overview of Existing Regulatory Environment for Net Metering in Pakistan	5
1.3 Current Status of Implementing Net Metering in Pakistan	6
1.4 Net Metering Promotional Program.....	6
2. CERTIFICATION OF INSTALLERS OF SOLAR PV SYSTEMS FOR NET METERING REGIME	8
2.1 Privileges for the Certified Venders/Installers/Service Providers	8
2.2 Role of Certified Venders/Installers/Service Providers	8
3. ELIGIBILITY CRITERIA FOR CERTIFICATION/ PRE-QUALIFICATION OF VENDORS/ SUPPLY/SERVICE COMPANIES	11
4. PROCEDURE CERTIFICATE FOR SOLAR PV / WIND SYSTEM INSTALLERS	13
4.1 Submission of Documents.....	13
4.2 Evaluation of Documents	14

1. Introduction

Development of Alternative and Renewable Energy (ARE) based distributed generation on net-metering is being considered as a favorable and feasible method of providing relief in current energy crises. The concept of net-metering has been successfully implemented in many countries around the globe and has been recognized as one of the most promising application of solar energy in particular. To facilitate prompt promotion of captive and net metering concepts, governments of different countries have announced various policy measures, market mechanisms and incentives for the consumers.

International experience indicates that promotion of net metering has resulted in making large proportion of the domestic, commercial and industrial sector electricity consumers self-reliant in meeting their electricity needs. The Global Solar PV Market Outlook 2016 indicates that share of solar PV based net metering installations are major contributors in the total solar PV capacity installed in most of the countries. This share in different countries is: Germany 73%, Italy 78%, China 70%, USA 78%, Japan 63%, Spain 15%, Austria 90%, India 23% etc. Various market mechanisms and incentives are being announced by these governments to promote net metering at consumers' level.

Net metering based solar applications not only lessen the burden over the national grid but also support in increasing overall generation capacity, reducing fuel import bill, decreasing emissions of greenhouse gases and strengthening the national grid by minimizing line losses as well as increasing major deployment of solar applications. Added economic benefits like creation of job opportunities, establishing manufacturing base and development of allied industries have also been experienced globally. The Government of Pakistan (GoP) intends to promote net metering in the country to generate electricity at the load centers, manage increasing electricity demand, conserve energy and to generate environment friendly electricity.

Once propagated, the net metering will allow large proportion of the domestic, commercial, agriculture and industrial sector electricity consumers to meet major share of their electricity needs at their own and feed electricity to the grid at times when it is not needed by them. This will not only lessen the burden on the national grid but will also support in increasing overall generation capacity, reducing fuel import bill, decreasing emissions of greenhouse gases and strengthening the national grid by minimizing line losses as well as increasing major deployment. The power sector can be benefitted by reduction in the demand for electricity and supporting a cleaner energy future and reducing strain on the grid's distribution infrastructure that would also translate into lessening energy loss from transmitting voltage over long distances.

Besides being beneficial for the government and its electricity services agencies, net metering is also advantageous for the consumers as well. The electricity consumers can earn following by switching to net metering mode:

- I. Makes residential solar energy system ownership even more attractive and affordable for many families. It can save homeowners thousands of rupees per year on their utility bills, and it makes the process of accounting for the energy flowing to and from the utility simpler and easier to administer.
- II. Financial Credit for Extra Solar Power Produced by the Distributed Generator.
- III. Excess electricity now offsets electricity you would otherwise have to buy at full retail prices. This makes owning your own generating system even more cost effective.
- IV. Creates a host of societal benefits for all ratepayers that are generally not accounted for by the utility analysis, including: public health benefits, employment and downstream economic effects, market price impacts, grid security benefits, and water savings.

Net Metering is a win-win option for all. The Federal Government is therefore intends to aggressively promote the concept all over the country. For that purpose, the Federal Government has decided to engage private sector companies that would be certified for installing net metering based solar PV systems. This RFP is issued inviting interested companies to submit their proposals and credentials and get registered with AEDB as certified installers.

1.1 Background on Net Metering

Net Metering is an incentive scheme for consumers of an electric grid related to Distributed Generation, typically through renewable energy sources. Net Metering aims at maximizing the utilization of a renewable system installed at the consumer's premises through off-taking power through the electric grid at hours when the production of the system exceeds the consumer's own consumption. A consumer who installs an on-site renewable energy generator, primarily for reducing his own grid consumption, is now allowed to supply any surplus energy units from his installation to the electricity grid. These units are recorded and are later on "netted-off" (i.e., subtracted) against the units consumed from the grid. In this way, a Net Metering scheme provides an incentive to consumers to install decentralized renewable energy systems as it gives them the certainty that they will benefit from any electricity produced through the system, either through own consumption or through feeding it into the grid.

In this scenario, a bi-directional electric meter is placed between the consumer's connection point and the grid and records any units drawn from the grid or fed into the grid.

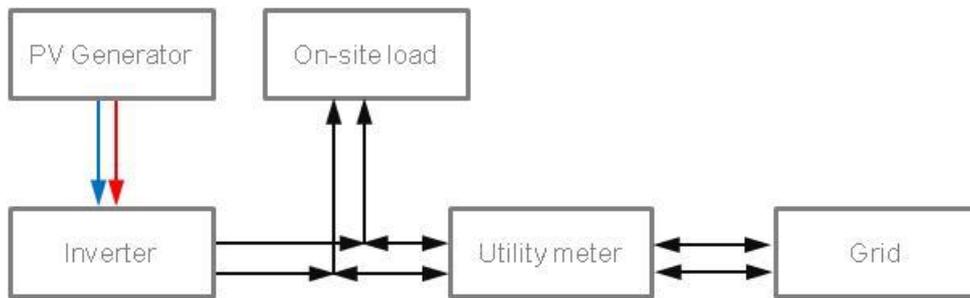


Figure 1: Typical Net-Metering Connection: Consumption - Generation = Billed amount

Another scheme widely deployed uses the Feed-in Tariff. In such a system, an additional meter is placed directly after the renewable energy generation unit and is monitored by the utility company. This allows the utility company to monitor the electricity produced and provided to the grid with the flexibility to set a different tariff for these units. In the consumer case, this essentially results in the consumer having two separate connections with the utility company: One for monitoring of renewable energy production and another one for recording of energy consumed.

Feed-in Tariff schemes usually offer additional incentives such as long term purchase agreements with guaranteed grid access. The goal of such a scheme is to promote investment in the renewable energy systems on a small to medium scale via guaranteed returns.

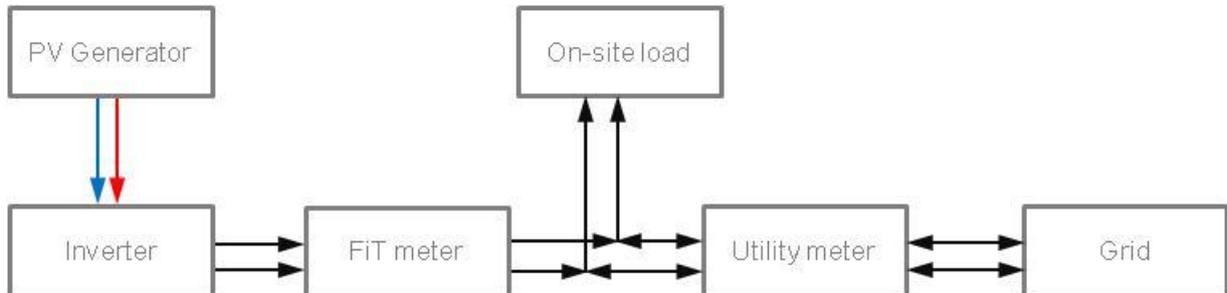


Figure 2: Typical Feed-in Tariff Connection: Consumption = Billed amount; Generation = Billed amount

In Pakistan, Federal Government has allowed Net Metering and encouraging consumers in domestic, commercial, industrial and agriculture sector to install solar PV and wind based systems at their premises / rooftops and connect to the system of their concerned distribution company (DISCO) for net metering.

1.2 Overview of Existing Regulatory Environment for Net Metering in Pakistan

NEPRA announced National Electric Power Regulatory Authority (Alternative & Renewable Energy) Distributed Generation and Net Metering Regulations, 2015, vide S.R.O 812 (1)/2015, on September 1, 2016 (Regulations). With this, NEPRA has approved and put into effect net metering schemes for solar and wind generation of up to 1MW. As per the

Regulations, Net metering regime would allow customers with a three-phase electricity connection to get monetary benefits by offsetting at least a part of their power bills by generating electricity. The procedure for net metering is comprised of five steps including:

- 1) submission of application by the consumer,
- 2) technical review of application by DISCO,
- 3) signing of net metering agreement,
- 4) payment of interconnection charges by the consumer,
- 5) sale/purchase of electricity.

Under the Net Metering regime, a meter capable of recording power flows in both directions (bi-directional) will be used. Such a meter records readings when consumers are drawing power from the utility's grid (that is, using more energy than they are producing) and also when energy is sent to the grid (that is, using less energy than they are producing). However, there is also provision that two separate meters can be installed which separately record inflow and outflow of electricity. The balance of units (net of consumed from and feed in to the grid) is going to be taken care of after every 3 months.

The scheme stated in the Regulations also outlines the process under which, both generators and distribution companies, must operate, including the timeline for approvals.

1.3 Current Status of Implementing Net Metering in Pakistan

The concept of Net Metering is being promoted all over the country. AEDB together with other stakeholders in the public and private sector like NEPRA, NTDC, DISCOs, Power Division, Ministry of Energy, FBR, Ministry of Science and Technology, Ministry of Commerce, Ministry of Industries, Provincial Government Departments, Renewable and Alternative Energy Association of Pakistan (REAP), Solar Quality Foundation (SQF), Pakistan Solar Association etc. have been promoting net metering in Pakistan. Due to continuous support and efforts by all stakeholders, so far, NEPRA has issued 191 generation licenses of approx. cumulative 4.5 MW solar PV for net metering connections.

1.4 Net Metering Promotional Program

The Power Division, Ministry of Energy (MoE) desires to promote installation of Distributed Generation Systems on net metering (DG Facilities) in the country. In this regard, a new consumer friendly process for installation of solar power generation systems for distributed generation (DG) facilities has been introduced under the Net-Metering framework approved by NEPRA for DG systems up to 250 KW with the objective of promoting clean energy, introducing time-efficient process, ensuring adherence to NEPRA's Distribution Code and AEDB's quality standards and protecting consumers from substandard service delivery.

As per the process devised by MoE, only certified and empaneled vendors/ service providers will be eligible for sale, installation and service of PV solar panel based power generation

systems of up to 250kW for distributed generation (DG) facilities connected through net-meters to the distribution grid. Alternative Energy Development Board (AEDB) has been mandated to invite applications from well reputed and competent vendors/installers/service providers for certification by AEDB for installation of Distributed Generation Facilities at premises of interested consumers all over Pakistan in accordance with the provisions of the Federal Government Policies and NEPRA (Alternative and Renewable Energy) Distributed Generation and Net Metering Regulations, 2015.

2. CERTIFICATION OF INSTALLERS OF SOLAR PV SYSTEMS FOR NET METERING REGIME

The MoE has desired that AEDB shall short-list qualified/ certified vendors/installers/service providers and give a panel of vendors/installers/service providers to each DISCO for display on websites of DISCOs and AEDB. Only this panel of certified vendors/installers/service providers will be eligible for sale, installation and service of PV solar panel based power generation systems for net metering all over Pakistan up to 250kW.

MoE has further directed that the list prepared by AEDB of certified vendors/installers/service providers shall contain their full contact details along with number and power (Watts) of connections/ systems they have successfully provided. The list shall be in descending order on the basis of power (wattage). AEDB has been designated to monitor and ensure that the credentials are correctly displayed on DISCOs' websites. The consumer(s)/applicant(s) will have free choice of selecting any of the vendors/installers/service providers certified by AEDB.

2.1 Privileges for the Certified Vendors/Installers/Service Providers

The certified vendors/installers/service providers will enjoy following privileges as a result of their certification/registration with AEDB:

1. Only AEDB certified vendors/installers/service providers shall be eligible for providing installation/ commissioning services for net metering connections up to 250 kW
2. Particulars and contact details of the certified installers shall be published on AEDB's website and DISCOs' websites and may be displayed at other print or social media with endorsement as AEDB's certified installers.
3. General public and public / private sector organizations shall be encouraged to seek services from certified installers only.
4. A recommendation letter to the public sector organizations recommending the installation of wind or solar PV systems from the certified installers.
5. Customers are expected to have higher confidence in certified installers due to the key terms of the customer agreement and certification by AEDB.

2.2 Activities to be undertaken by the Certified Vendors/Installers/Service Providers

The Federal Government foresees that each certified vendor/installer/service provider shall:

- a) follow the provisions of the AEDB (Certification) Regulations, 2017, Standard Operating Procedures for Certification of vendors/installers/service providers for Net Metering up to 250 kW (SOPs) and Net-Metering Reference Guide For Electricity Consumer and Installers (all documents are available at AEDB Website www.aedb.org; SOPs are attached as Appendix-I to this document);
- b) Undertake 'solar PV systems with net metering' promotional activities for creating public awareness, such as road shows, distributing flyers, participating in exhibitions,

targeting industries/ educational institutions/ businesses, independently as well as collectively for promotion of net metering all over Pakistan. If needed, also participate in the training workshops and seminars;

- c) Coordinate and work with DISCOs, NEPRA and AEDB to expand the net metering connections portfolio at all customers' levels all over country;
- d) Act as one stop shop and provide services to the customers to process their applications for net metering from start till the energization of net metering connections up to 250 kW.
- e) Enter into a customer agreement before undertaking any installation works or provision of related services to the customer. The format of the customer agreement is available in AEDB (Certification) Regulations, 2017. Compliance with warranties and other terms and conditions set out in the customer agreement shall be deemed to be an obligation imposed on such certified installer under the customer agreement and these regulations;
- f) Ensure compliance with warranties and quality/ safety standards for equipment and installation, as specified by AEDB (Net-Metering Reference Guide For Electricity Consumer And Installers as available on AEDB Website www.aedb.org) and NEPRA;
- g) Ensure compliance to the requirements as specified by NEPRA in its Regulations for net metering;
- h) Provide after sale services for a period of at least one year to the customer for operation and maintenance of the solar PV system/ net metering system installed at customer(s)' facility. Ensure follow-up with customers for smooth functioning of the installed solar / net metering system. Also coordinate with DISCOs for resolution of complaints regarding metering on priority;
- i) Remain available for responding to the queries/observations/complaints, if any by the customer(s).

2.3 Soliciting Interest of Companies for Certification

AEDB has therefore decided to solicit the interest of vendors/installers/service providers to submit their applications along with all the information and documents (duly attested) as per Alternative Energy Development Board (Certification) Regulations, 2017 and along with a pay order of Rs. 5,000/- (Rupees Five Thousand), non-refundable in the name of Alternate Energy Fund (AEF), as processing fee. Certification of vendors/installers/service providers will be decided on the basis of responsiveness to the eligibility criteria/ requirement as specified in this document. AEDB reserves the right to accept or reject any or all applications for certification in line with Alternative Energy Development Board (Certification) Regulations, 2017. AEDB reserves the rights to terminate the certification process without any prior notice at any stage.

The application in complete form and in compliance to all requirements stated in this document must reach AEDB Head office, Islamabad by November 29, 2017. The

applications must be addressed to CEO, AEDB. For any query, please contact the office of Secretary, AEDB at following:

Secretary
Alternative Energy Development Board
2nd Floor, OPF Building, G-5/2
Islamabad
Ph. No. 051-9222360-61

Incomplete applications will not be entertained and will not be processed. Any misinformation, false and forged statement will lead to disqualification from being certified/pre-qualified and any other action as per the applicable law.

3. ELIGIBILITY CRITERIA FOR CERTIFICATION/ PRE-QUALIFICATION OF VENDORS/ SUPPLY/SERVICE COMPANIES

The vendors/service providers/firms/ joint ventures (having capacity to deliver the complete package of services including survey, design, supply of equipment/ materials, installation & commissioning and post installation back up support viz-a-viz operation & maintenance services for complete system) with the following strength/ background would be eligible for certification, which will be for a period of one year and renewed every year based on satisfactory performance:

- i. Must have an office in Pakistan and have/ willing to establish at least one (1) sub-office/ dealership/ after sales service center in the region of the DISCO where it intends to do business;
- ii. Must be registered with PEC in appropriate category relevant to the value of the Works and with Specialization codes like 1210 (Renewable energy sources and Systems), 1220 (Energy Planning conservation and development);
- iii. Must be registered with Income Tax and Sales Tax Departments (Attach NTN & STN Registration Certificates supported by active NTN& STN);
- iv. Must have local presence (in case of foreign firm). Proof of meaningful partnership with a local PEC registered consulting firm (s) will be required in the shape of JV agreement;
- v. Must be in solar business for last three years;
- vi. Must have experience of completing solar systems (on-grid or off-grid) preferably installation of at least 10 solar powered systems during last three (03) years (Attach following documents to justify the experience claim):
 - (a) List of completed and on-going projects with location, components, size/scope, cost, period and share/ role (in case of Joint venture)
 - (b) List of Clients
 - (c) Type of Solar systems installed
 - (d) Any additional document to support relevant experience
- vii. Must possess inventory of solar equipment as per standards & specifications approved by NEPRA and AEDB;
- viii. Must have minimum average annual turnover of Rs. 3 million (Attach acceptable document like audited financial statements, tax declaration/ returns etc.). The audited financial statements/reports of international companies applying as JV partner must be verified through the foreign office of the respective companies of origin of the international companies;
- ix. Must provide affidavit confirming that (a) applicant vendor/service provider/firm/ joint venture have never been blacklisted by any government department. (if ever black listed, then provide the case history, current status of the firm regarding this decision) (b) all the information provided by the applicant firm/ joint venture are correct (c) the firm will provide compatible solar equipment as per approved

standards & specifications and (d) the firm will deploy staff as per project requirement;

- x. Must attach an unconditional bank guarantee in favour of AEDB amounting to Rs. 1,000,000/- (Rupees One Million Only) as per format provided by AEDB;
- xi. Fee structure for shortlisted applicant will be as under:

1.	One time Certification Fee	Rs.100,000/-
2.	Annual Renewal Fee	Rs.50,000/-

- xii. Certification of a vendor/service provider/firm/ joint venture shall be cancelled/ revoked by NEPRA on violation of NEPRA (Alternative and Renewable Energy) Distributed Generation and Net Metering Regulations, 2015 OR violation of AEDB quality standards, defrauding/ cheating a customer/ violation of the contract/ agreement with the customer. The bank guarantee submitted to AEDB will be encashed forthwith and the vendor/service provider/firm/ joint venture shall remain black-listed for two years.

4. PROCEDURE CERTIFICATE FOR SOLAR PV / WIND SYSTEM INSTALLERS

AEDB has decided to invite applications from well reputed and competent vendors/installers/service providers for certification by AEDB for the purpose stated above. To process applications of the interested vendors/installers/service providers, AEDB has prepared SOPs as placed at Appendix-I to this document. The SOPs provides for an account how applications will be invited/processed and how certification process will be completed. The SOPs also state mechanism for post certification.

4.1 Submission of Documents

Interested firms/ Joint Ventures are requested to submit their proposals/applications along with following documents as per AEDB (Certification) Regulations, 2017 and information as sought as per SOP in the office of Chief Executive Officer, AEDB, Islamabad. The interested firms/ Joint Ventures may collect additional information and pre-qualification document from office of the undersigned during the working hours.

- Application form (available on AEDB's website)
- Authority letter/ board resolution along with the copy of CNIC/passport of the applicant
- Applicant's profile
- Company's certificate of incorporation or registered partnership deed (as applicable)¹
- Pakistan Engineering Council (PEC) registration certificate in appropriate categories relevant for renewable energy and energy planning. Specialized codes as specified by PEC for companies in solar PV / wind systems include:
 - EE-11 (General electrical works & solar system)
 - ME-07 (General mechanical works & solar system)
- NTN registration certificate
- Sales tax registration certificate
- In case of an international firm planning to undertake projects under a joint venture with local companies, details of instruments/ agreements/ documents in this regard
- List of employees along with CVs of solar/wind experts (engineers and professionals) which shows sufficient relevant experience
- Resume of national and international trainings and certifications obtained by the applicant and/ or its employees in solar PV / wind systems (on-grid, off-grid, hybrid etc.)
- List of industry standard software, tools, equipment and the like owned or used by the installers
- Copies of audited financial reports for the lesser of three years and the period of operations of the applicant; provided that, where up to date audited financial reports

¹ AEDB will have a preference for the installers to be corporate entities to ensure public availability of their records and their regulation

are not available, then up to date management accounts duly certified by the chief executive office in case of the company or by managing partner in case of the partnership firm or any other similar designation

- Copy of bank statements duly verified by the issuing bank for the lesser of three years and the period of operations of the applicant; provided that, where the applicant is not the company or partnership firm, then the bank statement in the name of applicant's business duly verified by the issuing bank for the same period
- Detail of projects executed in solar PV / wind systems (on-grid, off-grid, hybrid) as per proforma at Annex-I
- After sales services mechanism/ methodology and detail of after sales service team, policy for services / repairs / replacements
- Deposit non-refundable application processing fee through pay order or bank challan in the name of "Alternative Energy Fund.
- Details of project systems installed

4.2 Evaluation of Documents

The evaluation of proposals will be carried out on the basis of applicant firm(s)/joint venture(s) responsiveness to the eligibility criteria/ requirement. The process for certification is explicitly stated in the SOPs. Any misinformation, false and forged statement submitted by the applicant firm(s)/joint venture(s) will lead to disqualification from being shortlisted/ pre-qualified and any other action as per the applicable law.

The applications / proposals of the applicant firm(s)/joint venture(s) will be evaluated based on criteria as per AEDB (Certification) Regulations, 2017 as reproduced below:

Sr.	Criteria	Weight
1.	Enlistment as a firm with PEC in appropriate category relevant to the value of the works. Appropriate specialization codes include: (i) EE11 General Electrical Works & Solar System (ii) ME07 General Mechanical Works and Solar System	10
2.	Experience of solar/wind project installations	20
3.	Capabilities/experience of key personnel/ staff on payroll	10
4.	Audited financial reports/ bank statement	20
5.	After sales services period, warranty period, methodology of services/ repairs/ replacements and capabilities of after sales services team	20
6.	Software, specialized equipment and technical capabilities of the firm	5
7.	International certifications obtained as solar/wind installer	10
8.	Number of solar/wind installations which have been connected to the grid	05

The passing marks for the eligible applicant will be 70. However, the qualifying applicant shall have to secure at least 60% marks in each of the above stated criteria from Sr.1-5.