

# **SUBSIDY SCHEME OF MNRE FOR OPERATIONAL GUIDELINES FOR GRID-CONNECTED ROOFTOP AND SMALL SOLAR POWER PLANTS PROGRAMME**

The Administrative Approval for “Off-Grid & Decentralized Solar Applications” Scheme in the 2 Phase of the Jawaharlal Nehru National Solar Mission during 12th Plan Period was issued by MNRE vide No. 30/11/2012-13/NSM dated 26th May, 2014. The necessary guidelines for implementation of the “Grid Connected Rooftop and Small Solar Power Plants Programme” has also been issued by MNRE vide no 30/11/2012-13/NSM dated 26th June 2014.

Since there is a large potential available for generating solar power using unutilized space on rooftops and wastelands around buildings, the small power generated by individual household, industrial building, commercial building or any other type of building can be used to partly fulfill the requirement of the occupants and surplus, if any, can be fed into the grid.

The grid-interactive rooftop system can work on net metering basis for which two meters can also be installed to measure the export and import of power separately.

The grid connected rooftop solar photovoltaic power generation plants, generates electricity at the consumption center and hence contributes to reducing the losses.

The minimum and maximum capacity of the plant eligible under this programme is 1.0 kWp and 500 kWp respectively.

## **IMPLEMENTATION ARRANGEMENTS**

The programme will be implemented through multiple agencies. These agencies would be State Nodal Agencies/Deptts., Solar Energy Corporation of India and other Govt. organizations i.e. PSUs/Institutions/State Departments/Local Governments, Distribution Licensees/DISCOMs and the. Channel partners.

The projects upto 50 kWp can be implemented in programme mode while projects above 50 kWp will be done on project mode.

Channel Partners will be empanelled by MNRE based on certificate from a rating agency in the country for technical and financial strength.

The empanelment would be done initially for 2 years which may be extended further on merit.

## **PROJECT COST, BENCHMARK COST AND CENTRAL FINANCIAL ASSISTANCE**

The project cost of a grid connected rooftop PV system will include the hardware i.e., PV modules, inverters, meters, support structures, charge controllers, cables and minimum battery required to ensure smooth operation. It will also include cost of transportation, installation, connectivity, civil works and operation and maintenance for five years along with warranty of the system.

The Central Financial Assistance (CFA) would be 30% / 70% of the benchmark cost or the actual project cost as applicable, whichever is lower. The benchmark cost may be fixed by MNRE on yearly/half yearly basis on the basis of recommendation of a committee which will take input from the rates received in various tenders of SECI/Nodal agencies/Govt organization during last 1 year.

The present CFA would be 30% of the benchmark cost of the grid connected rooftop and small solar power plants. However, it can be revised by MNRE time to time.

The benchmark cost of a PV system will include the hardware cost up to the site including PV modules, inverters, minimum storage battery, cost of meters, cost of civil works, foundations, installation, operation and maintenance for a period of five years,

For Special Category states viz. North Eastern States, Sikkim, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, Lakshadweep, A&N Islands etc. the CFA upto 70% has been provided by MNRE

Upto 3.0% of CFA would be admissible to State Nodal Agencies, SECI or other govt. agencies etc as service charges for the efforts made in preparing cases, preparing DPRs. providing technical assistance etc.

Upto 1% of the total budget has been earmarked for R&D work related to grid connectivity, online monitoring, software development etc.

A total fund of upto 2% has been earmarked for organizing seminars/workshops, trainings, awareness campaigns preparation of literature/guidelines etc.

A total fund of upto 0.50% has been earmarked for the Project Management Cell/engagement of consultancy organization in MNRE.

The present benchmark price for photovoltaic systems without battery back-up support has been considered by MNRE as Rs.100/-per Wp for the systems upto 100 kWp and Rs.90/- per kWp for the systems 100-500 kWp.

There can be many possible business models, some of which has been highlighted as under:

- (a) Solar installations owned by consumer
  - (i) Solar Rooftop facility owned, operated and maintained by the consumer(s).
  - (ii) Solar Rooftop facility owned by consumer but operated and maintained by the 3rd party.
- (b) Solar installations owned, operated and maintained by 3rd Party

The 3rd party implementing the solar facility shall enter into a lease agreement with the consumer. The facility is entirely owned by the 3rd party and consumer is not required to make any investment in facility. The power generated is fed into the grid and the roof top owner gets a rent.

- (c) Solar Installations Owned by the Utility

The DISCOM may own, operate and maintain the solar facility. The DISCOM may appoint a 3rd party to implement the solar facilities on its behalf. The grid connectivity should be as per Central Electricity Authority (CEA) guidelines notified on “**CEA (Technical Standards for Connectivity of the Distributed Generation Resources) Regulations, 2013**”.

The tariff will be decided by Regulatory Commission/DISCOMs/Distributed Licensee in consultation with the implementing agencies. The tariff may be such that it is attractive for the roof owner and does not put too much burden on the DISCOMs.

## **MNRE**

The following criteria has been selected for selection of voltage level

1. Upto 10 kW - connectivity may be at low voltage (single phase)
2. Between 10-100 kW- connectivity at low voltage(Three phase)
3. Above 100-500 kW - connectivity at 11kV/33kV.

The billing is to be done by DISCOM on the basis of net energy drawn from the grid during the month on the tariff prescribed by the Regulatory Commission.

Suitable payment security mechanism is also required to be developed and the PPA is also required to be signed between owner, 3rd party and distribution company as applicable..

**Release of Funds** : The release of funds to various implementing agency will be as under

### **1. For Nodal Agencies**

Upto 30% of the eligible CFA and services charges at the time of sanction of the proposal. However, 10% advance may be given at the time of allocation of targets on programme mode, Balance 70% after successful commissioning of the project.

### **2. For Solar Energy Corporation of India (SECI)**

Upto 30% after submission of detailed proposal. However, 10% advance may be given at the time of allocation of targets on programme mode, Balance 70% after successful commissioning of the project.

### **3. For Channel Partners**

On reimbursement basis 50% of the eligible CFA may be released at the stage of claims submitted after completion/commissioning and balance 50% after verification/3rd party inspection.

### **4. For Govt Agency/Financial Institution**

Upto 30% of the eligible CFA and services charges at the time of sanction of the proposal in project /programme mode. Balance 70% after successful commissioning of the projects after verification

### **Approval Mechanism**

Not more than 50% of the capacity shall be available for execution through the channel partner. At the beginning of each Quarter, MNRE shall earmark/release an indicative target for that period. The Channel Partners shall submit the proposal along with a commitment for meeting the balance cost of the project to MNRE for approval through Project appraisal committee (PAC) constituted by MNRE.

### **PROJECT MANAGEMENT CONSULTANT (PMC)**

The government may engage a reputed agency as a Project Management Consultant (PMC) for formulation, appraisal and screening of proposals, formulating the detailed implementation guidelines/formats etc, The PMC will also device a suitable Monitoring System.

### **Monitoring and System Life**

Online monitoring will be compulsory for all systems more than 10 kWp capacity for PV and equivalent of 10 kW capacities for thermal systems.

### **Minimal Technical Requirements /Standards for SPV Systems / Plants to be deployed under the Programmes of Ministry of New and renewable Energy**

Various IEC/BIS equivalent standard for PV modules, inverters storage batteries, cables, switches etc. have also been specified.

RF identification tag (RFID) has also been made compulsory containing the information related to PV modules.

### **Authorized / Testing Laboratories Centers**

For testing of PV modules as per IEC standard IEC/NABL accredited lab has been authorized..