Solar Energy Corporation of India

New Delhi

FREQUENTLY ASKED QUESTIONS

A. Rooftop PV

1. How much area is required for a 1 kW rooftop Solar PV system?

A 1 kW rooftop system generally requires 12 sq. metres (130 square feet) of flat, shadow-free area (preferably south-facing). Actual sizing, however, depends also on local factors of solar radiation and weather conditions and shape of the roof.

2. What are the subsidies/capital support available from the Government?

Subsidies are available from multiple channels for setting up Rooftop PV projects.

a) *Subsidy/Support from Central Government through MNRE:* For systems upto 100 kWp in size, upto 15% subsidy can be availed with the help of MNRE-empanelled channel partners. For systems of sizes 100 kWp-500 kWp, subsidy can be availed through Solar Energy Corporation of India. (For more details, please visit http://www.seci.gov.in/content/)

b) *Subsidy/Support from State Government through State Nodal Agencies (SNAs):* Subsidy support is also available in various states. The percentage of subsidy varies according to the state policies. Interested consumers may contact their respective SNAs for more details. The list of the State Nodal Agencies can be found here.

3. What is the process of availing subsidy from SECI?

Subsidy support from MNRE for Grid-connected Rooftop PV systems of sizes 100 kWp-500 kWp is routed through SECI.

Tenders are invited by SECI in phased manner for installation of rooftop Solar PV systems within 100-500 kWp range, in various cities/states in India. 15% subsidy is offered by SECI to the companies selected after their bid evaluation. The companies then pass on the subsidy support to the end-users. Rooftop owners/consumers can contact the selected companies for setting up rooftop PV systems on their premises.

The list of selected developers under this scheme is available at http://www.seci.gov.in/content/.

4. What are the models for implementation of Rooftop PV systems by SECI?

Currently, SECI implements the rooftop scheme under two models:

c) *CAPEX Model:* Here, the entire system is owned by the rooftop owners. Responsibility of O&M for the system lifetime (25 years) is also with the rooftop owner. Developer is responsible for installing the system and initial 2 years O&M. In this case, the developers are selected through a system cost-based reverse bidding. Selected bidders are offered 30% subsidy on the system cost (exclusive of taxes).

d) *RESCO Model:* Here, the entire system is owned by the developer. Responsibility of O&M for the system lifetime (25 years) is also with the developer. Rooftop owners may consume the electricity generated, for which they have to pay a pre-decided tariff on a monthly basis. Excess generation may be exported to the grid, subject to availability of requisite state regulations. In this case, the developers are selected through a tariff-based reverse bidding (in phase IV).

5. Which model is best for me?

For consumers that have adequate manpower/expertise for O&M, rooftop access concerns, availability of funds upfront, CAPEX model is better. Consumers in states that have net-metering regulations can take benefit of the same in case they have substantial excess generation.

On the other hand, consumers who prefer not to take responsibility for the system O&M, do not have rooftop security concerns and prefer to pay on a monthly basis rather than bulk upfront payment may choose to go for RESCO model.

6. I want to install solar panels on the roof of my house. How should I go about it?

Individual household consumers can get off-grid rooftop systems installed on their roofs through MNRE channel partners to avail government subsidy. The list of MNRE channel partners can be found at http://mnre.gov.in/file-manager/UserFiles/list-of-Accredited-Channel-Partners-Rooftop-Grid-connected.pdf .

For setting up grid-connected systems in select cities/states that are being covered under SECI Large-scale Grid-connected Rooftop PV programme (Phase IV), consumers may contact any of the developers selected by SECI. The list of shortlisted developers is available at http://seci.gov.in/content/innerpage/grid-connected-rooftop-pv.php .

For setting up grid-connected systems in other areas, consumers may contact the respective State Nodal Agencies to find out if the same is permitted in their area.

7. Are housing societies eligible for subsidy under SECI's Large-scale Grid-connected Rooftop PV programme?

SECI does not provide subsidy directly to the rooftop owner, but rather to the project developer. Housing societies may approach any of the developers selected through the competitive bidding process to avail the benefits of the programme.

Ground Mounted PV

1. **I have a large tract of barren land and I want to set up a solar plant. How should I proceed?**

There are a number of Solar Power Developers in the market. You may engage their services. Around 5 acres of land is required for setting up a 1 MW SPV plant with crystalline Silicon technology. With Thin Film technology, land requirement is slightly higher.

2. **What are the tax exemptions/duty exemptions for solar plants?**

Several tax/duty exemptions are available for solar plants depending on the respective state solar policies where the plants are located. You may contact the respective SNAs for more details.

3. **How much does a 1 MW solar PV plant cost?**

The actual cost would depend on site location, components selection, EPC contract cost…….. etc .

4. **What is the process of availing subsidy from SECI?**

Currently, there is no subsidy in the Solar PV Projects which are being handled by SECI.

B. Consultancy

1. What kind of services are offered by SECI?

SECI offers the following range of consultancy services, both for ground-mounted solar plants as well as for large-scale rooftop PV systems.

- Feasibility studies
- DPR preparation
- Project management consultancy
- Owner's engineering
- Turnkey services (from concept to commissioning)

C. Solar Applications

1. I want to install Solar Water Heating System on my roof. Who should I approach?

There are many manufacturers of solar water heating systems. For detailed list, please refer to http://mnre.gov.in/schemes/decentralized-systems/solar-systems/solar-water-heatres-air-heating-systems/ .

2. I want to purchase Solar Lanterns/Solar pumps/Solar home lighting systems. Where can I get them?

There are Akshay Urja shops spread across the country that sell solar appliances. The list of Akshay Urja shops can be found at http://mnre.gov.in/file-manager/UserFiles/urjashops.pdf .

3. What is the cost of various solar appliances?

The MNRE benchmark (upper ceiling) cost as on 30th May, 2013, is as under.

SPV System		Capacity	Benchmark cost(Rs./Wp)
Solar lighting System, home-lights, lanterns, Power packs(Multi use)	CFL	Up to 300 Wp	270
	LED	Up to 300 Wp	450
Solar Water Pumping System	With DC motor	Upto 5kWp	190
	With AC motor	Upto 5kWp	161.50
Solar Street Lights		Up to 100 kWp	300

However, actual costs would vary depending on the model and vendor selected.

4. **Is there any subsidy available for Solar Cookers/Concentrated Solar Thermal (CST) systems?**

Yes, the Central Government offers 30% subsidy on these systems (for general category states) and 60% subsidy (for special category states). To avail subsidy, you will have to get the systems installed through an MNRE-approved vendor (channel partner). The list of channel partners can be found at:

1. http://mnre.gov.in/file-manager/UserFiles/list_channelpartners_st_jnnsm.pdf
2. http://mnre.gov.in/file-manager/UserFiles/list_channelpartners_st_dish_box_solar-cooker_jnnsm.pdf
3. http://mnre.gov.in/file-manager/UserFiles/list_channelpartners_st_cst_jnnsm.pdf

5. **Does SECI supply solar cookers/Solar lanterns/Solar home lighting systems to retail consumers?**

No

D. Solar Parks

1. What is a Solar Park?

Solar Park is a concentrated zone of development of solar power generation projects. The parks are characterized by well-developed proper infrastructure where the risk & gestation period of the projects will be minimized.

2. What facilities would be provided in a solar park?

Various infrastructure like transmission system, water, road connectivity and communication network etc. will be developed.

3. What should be the size of each Solar Park?

There will be 25 Solar Parks in various states, each with capacity 500 MW* or above, thereby targeting a cumulative capacity of around 20000 MW.

4. Can there be a reduction in capacity of a Solar Park from 500 MW in states where it is difficult to find a contiguous land parcels of capacity ≥ 500 MW?

Smaller parks in Himalayan & Other hilly states where contiguous Land may be difficult to acquire in view of difficult terrain will also be considered.

5. Who all are eligible for development of Solar Park?

All states & UTs are eligible.

6. Who will be the Implementing Agency for Solar Park, what are possible modes for the same?

States applying under the scheme will have to designate an agency for the development & Management of Solar Park, as per the modes envisaged below;

(i) Mode-I: State designated Nodal Agency (SDNA), a SPSU or SPV of the state Government.

(ii) Mode-II: A JV Company between SDNA & SECI with 50-50 % equity participation from SECI & SDNA. State government may also allow more than oine agency provided total equity participation from State Government remains 50 %.

(iii) Mode-III: State may designate SECI as the Nodal Agency on mutually agreed terms.

(iv) Mode-IV: Private entrepreneurs without any equity participation from SECI, but may have equity Participation from State Government or its agency.

7. Can a private organization be the Implementing Agency of Solar Park.

Private Organizations under Model-IV may opt to participate as Implementing Agency. Choice of implementing agency for development and O&M of Solar Park is left to the State government.

8. For the plants installed in Solar Parks who will sign the PPA.

Solar Power Developers would have to arrange for their own buyer of power for Projects that are set up within the Solar Park, either by participating in some competitive bidding process, or through mutual negotiations or on nomination basis or for captive use or any other means.

9. How the tariff for the power generated in Solar Parks will be determined?

Tariff shall be determined either through CERC/SERC Regulations or competitive bidding.

10. What are the responsibility of Solar Park Implementing Agency?

Following are the responsibilities of Implementing Agency

- Plan, finance, develop, operate & maintain Solar Parks.
- Identify Potential site and acquire /leasehold/possess land of the Solar Park.
- Carry out site related studies/investigations.
- Obtain statutory & Non-statutory clearances.
- Design Plan for sharing development cost between the developers.
- Creation of necessary infrastructure like water, transmission lines, roads, drainage etc.
- Frame out transparent Plot allotment Policy & specify procedures pursuant to relevant State policies and their amendments thereof.
- Provide directives for Technology specific land requirements.
- Engage services of National agencies/ global experts/consultants to promote Solar Park and related activities.
- Facilitate the State Government to establish educational institution / training facilities within the Solar Park for manpower skill development.

Include any other activity related to Solar Power Park, such as manufacturing Unit as per directions of MNRE & State Government

E. CPSU Scheme

1. For how many years is the scheme valid?

The scheme is valid for three years from 2014-15 to 2016-17

2. Who are the eligible entities under the scheme

CPSUs and Government of India organizations are eligible to participate under this scheme

3. With whom would the PPAs be signed under this scheme?

The projects under this scheme may be set up in one of the following modes:

1. The participating PSUs/Govt. organizations would have top participate in various central/state sector tendered for sale of power to state utilities/discoms or any other organization.

2. The participating entities may also sign PPAs with State utilities/discoms at CERC/SERC determined tariffs

3. Participating entities may also set up projects for own use of power/third party sale of power at mutually negotiated rates

4. When will VGF be released?

VGF would be released in two tranches:

- 50% on successful commissioning of full project capacity
- Balance 50% after 1 year of successful operation of project

5. What would be the role of SECI under this scheme?

SECI would be handling the scheme on behalf of MNRE: Would be processing the applications and giving in-principle approval

Would be handling VGF: PSUs may approach SECI for grant of VGF

6. What are conditions on cell/module manufacturing for benefits under the scheme?

Projects should be set up using cells/modules from domestic manufacturers, in order to avail the benefits under this scheme.

For technical specifications of DCR cells/modules, please refer to scheme document

However, benefit under the scheme would not be available in case DCR clause is already there in the respective tender in which PSU/Govt. organization participates.

7. How much VGF would be available to a project under this scheme?

- For domestically manufactured modules: 50 lakhs/MW
- For domestically produced modules and cells: 1 crore/MW

For technical specifications of DCR cells/modules, please refer to scheme document

F. Canal Top/ Canal Bank Scheme

1. Who are the eligible entities under the scheme?

All the states and UTs having canal network are eligible to get benefit under the scheme.

2. Implementing Agency

The solar PV power plants will be developed by the State Power Generation Companies/ State Govt. Utilities/ any other State Govt. Organization/ PSUs/ GoI PSUs or GoI Organizations, provided that they are operating in power sector or own canal systems, i.e. are into irrigation. The implementing agency shall enter into long term tie-up with concerned State Irrigation Department/ relevant Organizations for utilization of the Canal Tops/ banks for setting up the power plants.

3. Size of project?

Allocated capacity: 50 MW for Canal Top

50 MW for Canal Bank

Total aggregate capacity: 100MW

Individual project Size: 1-10MW

4. Commissioning Period

These plants will be required to be commissioned over a period of 15 months from date of sanction.

5. Scheme Manager

Solar Energy Corporation of India (SECI) shall be the scheme manager on behalf of MNRE to handle the available funds/support from GoI.

6. MNRE Support/ Central Finance Assistance (CFA)

MNRE will provide fixed capital subsidy under the scheme as mentioned below:

Type	VGF Support
Canal Top	Rs.3 Cr./MW or 30% of the Project Cost whichever is lower
Canal Bank	Rs. 1.5 Cr./MW or 30% of the project cost whichever is lower

Release of MNRE subsidy/CFA

Sl. No.	Milestone	Time line	% of subsidy
1	Date of issue of administrative approval, i.e. sanctioning of the project	Day 0	Upto 40%
2	Commissioning of the plant	15 months	60%

There could be some intermediate instalments in case full 40% is not released as advance

7. Transmission & Evacuation

The plants would be designed for inter-connection with the transmission network of STU or any other transmission utility voltage level of 33kV or above.

8. Power Sale Arrangement

The implementing agency shall enter into PPA with Sate Utility/ Discom for purchase of the power generated from their plant at tariffs mutually agreed or as fixed by the State Electricity Regulatory Commission.