

### **What is a Solar Rooftop System?**

- Solar panels installed on the roof of any residential /commercial complex, housing societies, community centers, government organization, and private institutions buildings. This can be of two type's i. Solar Rooftop System with storage facility using battery and Grid Connected Solar Rooftop System.

### **What is a Solar Rooftop System with storage facility?**

- Solar electricity stored in battery and can be utilized during night.

### **What is a Grid connected Solar Rooftop System?**

- DC power generated from SPV panel is converted to AC power using power conditioning unit and is fed to grid either of 33kV/11kV three phase lines or of 440/220V three/single phase line depending on capacity.

Power generated during day time utilized by powering captive loads and feed excess power to the grid.

Where solar power is not sufficient due to cloud cover etc, the captive loads are served by drawing power from the grid.

### **What is the financial assistance provided by the government?**

- There is a provision of Central Financial Assistance of 15% of the total cost or Rs. 12/watt or Rs. 1.20 crore/MWp under the Grid Connected Rooftop and Small Solar Plants Program of the Ministry. CFA has been reduced from 30% to 15%.

Other benefits, in terms of accelerated tax depreciation is 80% on total cost of project up to September 2016 then after it will be reduce to 40%.

### **What are the other fiscal incentives are available for Solar Rooftop systems?**

- There is a provision of concessional import duty / excise duty exemption, accelerated depreciation and tax holiday for setting up of grid connected rooftop power plants.

### **What efforts Government is making to providing loans for solar rooftop systems?**

- Department of Financial services has instructed to all Public Sector Banks to encourage home loan / home improvement loan seekers to install rooftop solar PV plants and include cost of system in their home loan proposals. So far, nine PSBs namely BOI, Syndicate Bank, SBI, Dena Bank, Central Bank of India, PNB, Allahabad Bank, Indian Bank and Indian Overseas Bank have been given instructions to extend loan for Grid Interactive Rooftop Solar PV plants as home loan/home improvement loan.

### **What is the size of grid connected rooftop solar system?**

- From 1kWp up to 500kWp or in combination can be set up on the roofs.

### **How much roof area is required to set up the grid connected rooftop solar system?**

- About 10sq.m area is required to set up 1kWp grid connected rooftop solar system.

### **What are the advantages of grid connected rooftop solar system?**

- ✚ Electricity generation at the consumption center and hence saving in transmission and distribution losses
- ✚ Low gestation/development time.
- ✚ No requirement of additional land
- ✚ Improvement of tail-end grid voltage and reduction in system congestion with higher self-consumption of solar electricity
- ✚ Generation of local employment.

### **What is the potential available in India?**

- According to a study conducted by TERI, a potential of 124GWp SPV Rooftop plants has been estimated in the country.

### **What is Net metering?**

- For Grid connected rooftop system beneficiary pays the utility bill on net meter reading basis. Alternatively, individual meter can be installed to measure the export and import of power separately. The mechanism based on gross metering at mutually agreed tariff can also be adopted.

### **What is Feed-In-Tariff?**

- When Government offers a tariff for purchase of the solar power generated from such plants, it is called Feed-In-Tariff.

### **Net metering or Feed-In-Tariff, what is preferred?**

- Net metering mechanism is more popular among states.

In case of grid failure, is there any chance for shock to the person who is repairing?

- In case of grid failure, solar power has to be fully utilized or stopped immediately feeding to the grid, to avoid any shock. This feature is termed as 'Islanding Protection'.

### **What are the requirements from state to promote grid connected rooftop solar systems?**

- i. State should have conducive solar policy to allow the grid connectivity.
- ii. State Regulators have issued tariff order for appropriate tariff, net metering/feed-in tariff and grid connectivity
- iii. The distribution companies agree to allow grid connectivity and purchase the electricity on feed-in-tariff or through net metering arrangement

## What is return on investment for on grid connected rooftop solar system?

ROI calculated based on MNRE guidelines up to 1<sup>st</sup> September 2016\*\*\*\*\*

Basis of Plant Design:

1 kw = 1000w

1kw can generate avg. 4-5 units a day \* at ideal condition from 8 am to 5:30 pm

PV Panels available in size: 3 ¼ X 6 ft. Capacity 250W/300W/350W

Space calculate considering above range of panels= 80-120 sq ft.

10 kw can generate avg. 42 units a day

Per month = 42\*30=1260

Tentative cost of per unit commercial electricity charge @13

Saving per month = 1260\*13 = 16380 approx.

Yearly saving = 196,560=00

10 kw On Grid Roof Top Solar Plant cost = 80,000\*10 = 8,00,000=00

Less Tax depreciation approx 35% to the 20+80% on project cost 100% = 2,80,000=00

Actual project cost for calculation = 5,20,000=00

ROI = 520000/196560 = 3 years