

# Net metering policy for Roof-top solar PV projects In Punjab



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C.I.I Chandigarh

Presentation by  
PSPCL

# Solar Projects

are a source of  
clean,  
climate-friendly  
abundant  
and inexhaustible  
source of energy to the mankind.

# Current Scenario

- The current operational solar power capacity in Punjab is 57.27 MW.( including 7.5 MW Roof-top)
- in addition 25 MW solar bundled power is available from central sector under JNNSM Scheme.
- R.S.S.B. Education & Environmental Society Dera Beas has commissioned 7.5 MW rooftop solar project which is the biggest in Asia and was operational in minimum time which is a record.

# Capacity Addition

| Years          | Upto March, 2011 | 2011-12 & 2012-13 | FY 2013-14      | FY 2014-15 Upto Nov.2014                          |
|----------------|------------------|-------------------|-----------------|---|
| Solar Projects | 2.25 MW          | 8.5 MW            | 25 MW from NVVN | RSSB-7.52 MW ( Roof-top) Solar PV projects-39 MW. |

# Future Projects

- RSSB is expected to enhance its solar rooftop capacity to 90 MW.
- 30 MW solar power under Viability Gap Funding (VGF) Scheme of JNNSM Scheme expected in 2015-16.
- 500 MW solar bundled power under next phase of JNNSM Scheme.
- Under Net-Metering policy another 100 MW is expected to be added on rooftops

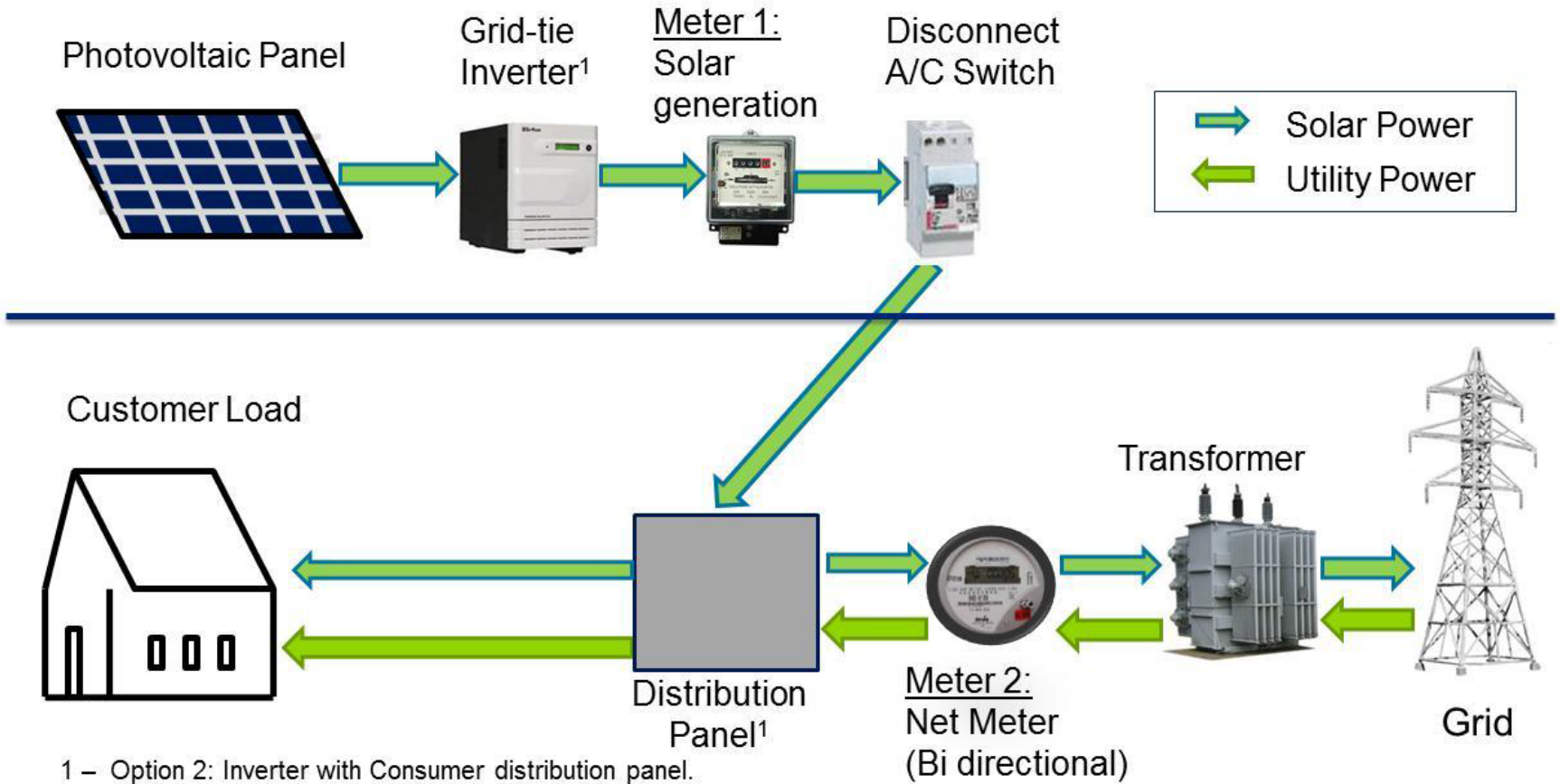
# POLICY ON NET METERING FOR ROOF-TOP SOLAR PHOTOVOLTAIC POWER PROJECTS IN PUNJAB

- Punjab Govt. has approved a policy on NET METERING FOR ROOF-TOP SOLAR PHOTOVOLTAIC POWER PROJECTS in the State.
- The salient features of The policy are as under:-

# Net Metering

- **"Net Metering"** means an arrangement under which rooftop solar system installed at eligible consumer premises delivers surplus electricity, if any, to the Distribution Licensee for offsetting the electricity supplied by distribution licensee during the applicable or subsequent Billing Period but within the Settlement Period

# Solar Rooftop –Net Metering





# Eligibility

- All the consumers of the State Distribution licensee/PSPCL who want to set up a solar PV plant on the roof-tops are eligible .
- Individual households, industries, Govt./Semi-Govt./Local Body offices, commercial establishments, institutions, residential complexes etc.

## Eligibility -2

- Capacity ranging from minimum 1 KWp upto 1MWp (AC side) with/ without battery back-up support.
- Consumers shall generate solar power for self consumption and can feed excess power into the grid.

# SPV Plant and Metering

Solar PV plant installation shall include :-

- Solar PV panels.
- Inverters.
- Synchronizer.
- Batteries.
- Transformers.
- Cables.
- Junction boxes etc.
- Bidirectional energy meter.

## Connectivity and Protection

- Solar Photo Voltaic (PV) rooftop systems shall have in house auto synchronization /facility with distribution Network .
- Same service line shall be used for excess power injection into the Grid which is currently being used by the consumer.
- Feature of “Islanding the SPV generator” will be **mandatory**, so as to achieve isolation of consumer power-system from utility power-system during grid failure or break down .

# Banking mechanism and Billing

- PSPCL will take energy meter readings for import/ drawl and export/ injection of power and work out the net energy flow quantum from or to the consumer.
- In case the net flow is towards the PSPCL i.e. the consumer has injected/exported the net surplus energy to the PSPCL system.
- Such quantum will be treated as energy banked by the consumer with PSPCL in the current billing cycle.
- In such scenario, the consumer will be issued Energy Account Statement along with the bill for charges like meter rentals, service charges etc.

- Such banked energy will be carried forward for accounting in the next billing cycle
- If the net energy flow is from the PSPCL, then the consumer will be issued the Energy Account Statement and Energy Bill for the net power drawn in the billing cycle
- The settlement of net energy including any banked energy shall be done at the end of each settlement period based on 90% of the consumption.
- At the beginning of each settlement period, cumulative carried over injected energy shall be reset to zero.

# Procedure

- Any consumer may download the solar net-metering rooftop Application-cum-Agreement form from the website of the PSPCL.( Form-A)
- It shall include necessary terms and conditions for Net Metering and will become a part of A&A Form.
- The duly completed Application form shall be submitted to designated officer of PSPCL for grant of permission to set-up the plant.
- Letter of Approval shall be issued by PSPCL within 30 days of receipt of application.

- The consumer shall set up the plant and submit the work completion report within 180 days .
- PSPCL shall verify the installation of solar PV project and seal the Bi-directional energy meter(s) within 10 days of the submission of report.
- The solar PV project shall be treated as commissioned for net-metering commercial operations from this date.



## Application Fee

- The applicant shall pay application fee of Rs. 50/KVA along with the application to PSPCL.
- No parallel operation charges shall be leviable on these projects as per NRSE Policy 2012.

**MOU FORM FOR APPROVAL TO INSTALL GRID INTERACTIVE  
ROOF TOP SPV NET METERING POWER PLANT**

( Form –A)

( To be filled by Applicant )

|     |   |  |
|-----|---|--|
| 1.  | Name of applicant   |  |
| 2.  | Address /Location   |  |
| 3.  | Contract No. and E- mail ID:  |  |
| 4.  | Name of Sub-Division  |  |
| 5.  | Category of Consumer<br>( DS/NRS/SP/MS/Indl.)   |  |
| 6.  | Account No.   |  |
| 7.  | Sanctioned Load(in KW):   |  |
| 8.  | SPV Power Plant capacity applied for ( in KW) AC:   |  |
| 9.  | Whether self owned or third party owned.<br>In case of third party owned ,copy of Agreement ,Lease ,Registered Deed.                          |  |
| 10. | Identity Proof :  |  |
| 11. | Processing fee at Rs.50/- KW ( adjustable against permission fee in case the approval is granted ):<br>( Transaction No. with Amount & Date ) |  |

I undertake to abide by the provisions contained in the guidelines on “ Net Metering for Grid integrative roof top solar Photovoltaic power plants in the state of Punjab issued by secretary, Deptt. of New & Renewable Energy, Govt . of Punjab and amended from time to time in addition to the conditions already existing in the A & A form submitted earlier for release of connection.”

I shall be solely responsible for and shall pay for any loss or damage to any of supply mains, main fuses, meters and /or other apparatus and accident to human being/ animals whatsoever ( fatal/non-fatal/departmental/non-departmental) that may occur due to back feeding SPV Plant when the grid supply is off.

Date:

Signature of the Applicant

# TECHNICAL DATA FORM FOR FEASIBILITY CLEARANCE OF ROOF TOP SPV POWER PLANT

**( Form- B)**

( To be filled by Field Officer )

|     |   |                         |  |
|-----|---|-------------------------|--|
| 1.  | Name of applicant   |                         |  |
| 2.  | Address /Location :   |                         |  |
| 3.  | Contract No. and E- mail ID:  |                         |  |
| 4.  | Account No.   |                         |  |
| 5.  | Name of Sub-Division with Code:   |                         |  |
| 6.  | Name of Division with Code  |                         |  |
| 7.  | Name of circle with Code  |                         |  |
| 8.  | Sanctioned load of consumer:<br>( DS/NRS/SP/MS/Indl.)   |                         |  |
| 9.  | Capacity of proposed SPVPP ( in KW):<br>( It should not be more than 80 % of the sanctioned load as per column no.8)  |                         |  |
| 10. | Name and Code of Distribution Transformer :   |                         |  |
| 11. | Capacity of above Distribution Transformer :  |                         |  |
| 12. | Name of feeder with Code:   |                         |  |
| 13. | Name of feeding Sub- Station with Code:   |                         |  |
| 14. | SPVPPs already connected on this Distribution Transformer ( in KW):   | No. of SPVPPs           |  |
|     |   | Total capacity in ( KW) |  |
| 15. | Senior pending SPVPPs to be connected on the T/F:   | No. of SPVPPs           |  |
|     |   | Total capacity in ( KW) |  |
| 16. | Capacity of proposed SPVPPs on this T/F ( in KW)<br>( As per column 9)  | .....Kw                 |  |
| 17. | Total load on this T/F ( in KWH ) = Sum total of column ( 14+15+16)<br>( It should not be more than 30 % of the T/F capacity )  | No. of SPVPPs           |  |
|     |   | Total capacity in ( KW) |  |
| 18. | Voltage level at which the consumer is being fed:   |                         |  |
| 19. | Recommendation of field office :<br>( Which capacity of SPVPP as per column -9 approved or not, if approved mention the approved capacity ,if not assign the reasons) | .....KW                 |  |

Date :

Signature of PSPCL Official

# Designated Authority

- Designated authority who shall approve the application of the consumer after checking the feasibility( Form B) shall be as under :-

| Capacity of rooftop solar pv system | Competent Authority  |
|-------------------------------------|----------------------|
| Upto 10 KW                          | AE/AEE (DS)          |
| Exceeding 10 KW                     | Addl.SE/ Sr.Xen (DS) |

- Designated authority who will perform the site verification including installation of Bidirectional Energy Meters and solar plant on behalf of PSPCL.

| Capacity of rooftop solar pv system | Competent Authority  |
|-------------------------------------|----------------------|
| Upto 10 KW                          | AE/AEE(DS)           |
| Exceeding 10 KW                     | Addl.SE/ Sr.Xen (DS) |

# Islanding protection

- The automatic isolation or islanding protection of SPV project shall be ensured during Grid failure & Break down period.
- Adequate Capacity fuses and fast acting circuit breakers shall be provided on input and output side of the inverters to isolate DC and AC system.

# Final approval

- AE/AEE/DS will issue final approval letter to the consumer for setting up rooftop solar plant after following the above mentioned procedure.

# Subsidy

- The consumers interested in setting up of solar rooftop PV project can approach PEDDA for grant of applicable MNRE, Govt. of India grant as per the prevailing instructions/Policy.
- The solar power plant will be eligible for the fiscal and other incentives as per NRSE Policy 2012.





Rooftop SPV system (50 kWp) at ParyawaranBhawan, Chandigarh



25 KWp SPV Plant at Police Hq, Chandigarh



70 KWp SPV Plant at Govt Multi Speciality Hospital , sec-16, Chandigarh





1 MW solar PV Roof-top project in Delhi

**Thank You**