

SOUTHERN POWER DISTRIBUTION COMPANY OF A.P. LIMITED
 Application Form for solar grid interactive roof-top and small SPV power plants
 (in terms of G.O.Ms.22 Dt:25.03.2013)

Affix recent
 Passport Size Photo
 of the Applicant

For Office Use:

Reg. No.:

Date :

Application fee details:

DD No.:

Date :

Bank :

To,
 The

(Designated Officer)

1	Name of the applicant	
2	Applicant full Address	H.No.:
		Street Name:
		Village Name:
		Mandal Name:
		District Name:
	Pin Code :	
3	Phone/Mobile No.	
4	Email ID	
5	Social Group	(SC/ST/BC/Others)
6	Applicant has to submit self attested photo ID proof (Voter ID card/Passport/PAN card/Aadhar card/Driving licence & etc.,)	
	Type of ID card submitted	
	ID card No.	
Site details		
7	Address of the site for installation	H.No.:
		Street Name:
		Village Name:
		Mandal Name:
		District Name:
	Pin Code :	
8	SCNo.	
9	Category	
10	Connected Load	
11	Distribution/Section	----- KW
12	If Non-Domestic, Specify type of building (Shop/Industry/Govt./Educational/others (specify))	
13	Pole No.	
14	DTR Code/Location	

15	a) Shade free area available for installation for solar panel (Minimum requirement is nearly 15 m ²)	----- m ²
	b) Proposed Capacity under this policy	-----KW
16	Average monthly consumption of electricity	----- Units

Declaration

I hereby declare that the information furnished above is true to the best of my knowledge and behalf. If false, APSPDCL has the right to reject/cancel the application. Further, I hereby agree with the specifications, terms and conditions stipulated by APSPDCL for the selection and installation of roof-top solar power plant.

Place :

Signature :

Date:

Name :

CHECK LIST :

- | | |
|---------------------------------------|----------|
| 1.Copy of photo ID card | (YES/NO) |
| 2.Copy of electricity bill | (YES/NO) |
| 3.Demand Draft | (YES/NO) |
| 4.Self addressed Rs. Stamped envelope | (YES/NO) |

SOUTHERN POWER DISTRIBUTION COMPANY OF A.P. LIMITED

ACKNOWLEDGEMENT

Your application for setting up of solar grid interactive roof-top and small SPV power plant under policy on net metering in accordance with of G.O.Ms.No.22, Dt. 25.03.2013 has been received along with registration fee. The details of DD are as below:

Drawn in favour of	Divisional Engineer/Operation/-----
Demand Draft No.	
Demand Draft Date:	
Issuing Bank	
Amount	Rs. 1000/-

(To be filled by the applicant)

The following Registration Number has been allotted to your application.

Registration Number	
Date of Registration	

(To be filled by Office)

Designated Officer/APSPDCL

AGREEMENT

The Agreement executed on this _____ day of _____, between M/s / Mr. / Mrs. S/o / D/o / W/o. _____ which means their/ his/its /theirs, successors as ONE PART herein after called as “Prosumer” and the Northern Power Distribution Company of A.P Limited, a DISCOM incorporated under the provisions of Companies Act 1956 consequent to the AP Electricity Reforms Act, 1998 (which means its authorized representatives assigns, executors and its successors) as OTHER PART, herein after called the “DISCOM”).

1. Installation of Solar Grid Interactive rooftop and small SPV power plant

In accordance with the policy announced by GoAP vide G.O.Ms.No.22, Dt:25.03.2013, DISCOM has introduced the scheme of “Solar Net Metering” for those consumers who intend to encourage solar green energy and set up solar PV plants at unutilized places on rooftops, waste lands, buildings of individual households, industries, offices, institutions, residential complexes etc.

2. Capacity of the SPV plant and Maximum contracted load of the premises

Prosumer is proposing to install rooftop solar power plant of – KW capacity under Solar net metering facility at D.No.----, Street ----, ---- (V), ---- (M) having electrical Service Connection No.---- for a contracted load of ---- KW/HP/KVA. The Prosumer have requested DISCOM to provide grid connectivity/necessary permissions to connect rooftop solar power plant and supply solar energy into the distribution network of DISCOM at ---- voltage level.

3. Governing Provisions

Prosumer hereby undertake to comply with all the requirements of the Electricity act, 2003, the Rules and Regulations framed there under, provisions of the tariffs, applicable Charges and the General Terms and Conditions of Supply prescribed by the DISCOM with the approval of the Andhra Pradesh Electricity Regulatory Commission herein after called as “Commission” from time to time and agree not to dispute the same.

4. Strategy of implementation

Implementation of net metering facility will be as per the following guidelines:

- i. Under this facility, Prosumer will generate solar power for self consumption and feed excess power into DISCOM network.
- ii. Net metering is the concept, which records net energy between export of generated energy and import of DISCOM energy for a billing month. Alternatively, the meter, having the feature of recording both the import and export values, besides other parameters notified by CEA metering regulations and APTRANSCO/DISCOM procedures in vogue, shall also be allowed for arriving net energy for the billing period.

4.1. **Settlement of energy charges**

The Prosumer shall pay for the net energy in a billing month as per applicable retail supply tariff decided by regulatory commission to the concerned DISCOM, if the supplied energy by the DISCOM is more than the injected energy by the solar PV sources of the Prosumer(s). Any excess/ surplus energy injected in to DISCOM network in a billing month will be treated as inadvertent and no payment will be paid for such energy.

- 4.1.1. Any modification/ amendment in the Policy and change in law would be made applicable and corresponding amendment(s) will be made in the agreement from time to time with the approval of APERC.

4.2. **Safety, Security & Insurance**

The Prosumer is required to provide an appropriate protection system on their incoming side/ consumer premises with the feature of "Islanding the SPV Generator" when incoming supply fails or any interruption on the connected line due to failure of equipment/line or Line Clear taken for carrying any maintenance work. As a part of security check, the feature of "Islanding the SPV generator" shall have to be checked up for its healthiness twice in a year. In order to meet the expenditure that may arise due to electrocution in the event of failure of the connected protective and switch gear, the Prosumer is required to provide an insurance coverage of 5,00,000 per annum.

4.3. **Metering Arrangement**

The Prosumer shall bear the entire cost of metering arrangement provided including its accessories. The installation of meters including CTs & PTs, wherever applicable, shall be carried out as per the departmental procedures in vogue with prior permission of DISCOMs. Alternatively, DISCOM will provide the metering arrangement at the Prosumer premises after receipt of entire estimated cost from the Prosumer.

4.4. **Request for Connectivity**

The Prosumer will submit the required information in the prescribed format to the DISCOM and get the proper acknowledgement and shall also provide related interconnection equipment as per the DISCOM's technical requirements, including safety and performance standards. To prevent a net metering prosumer from back-feeding a de-energized line, the Prosumer shall install an isolator switch that is accessible to Company personnel at all hours.

The Customer shall not commence parallel operation of the net metering facility until the Customer has received approval to operate from the competent authority of DISCOM.

Modifications or changes made to a Generator shall be evaluated by the DISCOM prior to modifications/changes. The Prosumer shall provide detailed information describing the modifications or changes to the DISCOM in writing prior to making the modification to the generating facility. The DISCOM shall review the proposed changes to the generating facility and provide the results of its evaluation to the Prosumer within forty- five (45) calendar days of receipt of the Customer's proposal. Any items that would

prevent parallel operation due to violation of applicable safety standards and/or power generation limits shall be explained along with a description of the modifications necessary to remedy the violations.

4.5. Standards for Solar panels

The Solar PV panels proposed to be installed shall meet the requirements of Indian as well as IEC standards. Further, the documentary evidence proving the prescribed standards has to be furnished by Prosumer to the concerned authority (DE/Operation) of the DISCOM before commencing the plant into operation. The Prosumer shall get the statutory approvals from appropriate safety authority (CEIG) of the connected electrical equipment and solar panels before plant energization.

5. Injection of Solar Power

The Solar power produced shall be injected in to the DISCOM network only after obtaining prior approval from Divisional Engineer/Operation/---/APNPDCL and meeting all the requirements of departmental standards, viz., protection switchgear, metering, feasibility approval etc.

6. Date of enforceability of the Agreement

This agreement will be in a force for a period of 20 years from the date of commencement of this agreement, after meeting all the requirements by the Prosumer under the conditions of this Agreement and in accordance with the policy on Solar net metering and its future amendments, if any.

7. Interruption or Reduction of delivery

The DISCOM shall not be obligated to accept and may require Prosumer to interrupt or reduce deliveries when necessary in order to construct, install, repair, replace, remove, investigate, or inspect any of its equipment or part of its system; or if it reasonably determines that curtailment, interruption, or reduction is necessary because of emergencies, forced outages or compliance with prudent electrical practices. Whenever possible, the DISCOM shall give the Prosumer reasonable notice of the possibility that interruption or reduction of deliveries may be required.

8. Access to premises

The DISCOM's personal may enter the Prosumer's premises to inspect the Prosumer's protective devices and read or test the meter.

9. Dispute Resolution

If at any time the DISCOM reasonably determines that either the Prosumer may endanger the DISCOM's personnel or other persons or property, or the continued operation of the Prosumer's generator may endanger the integrity or safety of the DISCOM's electric system, or the Prosumer is not operating the system in compliance with the terms and conditions of this agreement the DISCOM shall have the right to disconnect and lock out the SPV Generator facility from the Company's electric system until the DISCOM is reasonably satisfied that the SPV Generator can operate in a safe and compliant manner.

Any other dispute arising under/out of this agreement shall be resolved promptly in good faith and in an equitable manner by both the parties. Failing

resolution of the dispute, party may approach the commission under section 86 (1) (f) of EA 2003.

10. Termination of the Agreement

The agreement will be terminated only after its completion period until all the safety standards are adhered to. The DISCOM has the right to terminate the agreement on breaching of any of the rules agreed upon with one month notice. If Prosumer intends to pre close or terminate the agreement, Prosumer may do so with 3 months prior notice.

10. Re-Sale of Electric Power

The Prosumer shall not sell electricity generated under this agreement without the sanction in writing obtained from the DISCOM.

11. Obligation of Consumer to pay all charges levied by DISCOM

The Prosumer shall abide by the rules and shall pay the Maximum Demand Charges, energy charges, surcharges, meter rents and other charges, if any, to the DISCOM in accordance with the notified Tariff besides the applicability of the General Terms and Conditions of Supply prescribed by the APERC from time to time.

12. Right of DISCOM to amend the Agreement

DISCOM shall have the right to amend any of the section of the agreement according to the exigencies. Further, the DISCOM shall have the right to reduce/enhance the rates chargeable for supply of electricity as per retail supply tariff announced by commission from time to time.

13. Monthly Minimum Charges

The Prosumer shall pay the minimum charges every month as prescribed in retail supply Tariff and as per General Terms and Conditions of supply, even if no electricity is consumed for any reason whatsoever.

14. Theft of electricity or unauthorised use of electricity

Prosumer, found indulging in theft of electricity or unauthorised use of electricity shall pay the penal/additional charges as may be levied by the DISCOM besides disconnection of supply as per the provisions of IE Act 2003 and General Terms and Conditions of supply.

15. Prosumer has agreed to pay the monthly meter rentals besides other charges as may be fixed by the commission from time to time

Signature of Prosumer

Date:

Witness 1

Signature:

Name & Address:

Date:

Signature of Prosumer

Date:

Witness 2

Signature:

Name & Address:

Date:

Office of the
Divisional Engineer,
Operation,APSPDCL

Lr.No:DE/Op/SPDCL/ /F:SolarRoofTop/DocNo: / D.No: Dt: .

Sir,

Sub : Elcy-SPDCL-Op-Divn-Installing of ---- KW solar roof top SPV generator-
---- (Name) , situated at S/C No: ----, Distribution -----,------(M),
----- (Dist) - Approval - Reg

Ref: Your application No: ---- Dt:-----

With reference to your application for installation of solar SPV generator for ---
KW on your roof top proposed at H.No ----- ,village -----,------(M),-----
(Dist) is inspected by the undersigned on ----- and found feasible

Hence approved vide SRT No: -----/ Dt: -----.

You are further requested to approach this office with relevant documents
(Meter,SPV modules,Grid Tie Invertor,Protective system) after completion of
installation of SPV generator and obtaining CEIG approval ,for further processing.

Divisional Engineer,
Operation, APSPDCL

To

(Consumer Name and Address)

ANDHRA PRADESH POWER COORDINATION COMMITTEE
Vidyut Soudha:: Hyderabad

From
Chief Engineer/IPC
APPCC,
Vidyut Soudha,
Hyderabad.

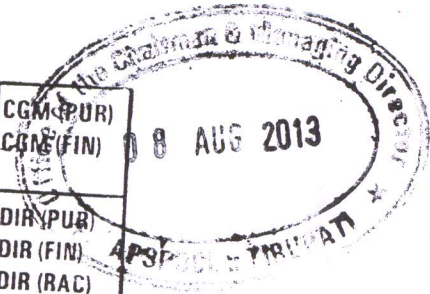
- TO
- 1 The Chief General Manager,
(OP, Comml. & IPC), APNPDCL,
Corporate Office, Opp. NIT Petrol Bunk,
Hanamkonda, Warangal.
 - 2 The Chief General Manager, (Comml.)
APCPDCL, Corporate Office, Mint Compound,
Hyderabad.
 - 3 The Chief General Manager,
(Comml, RA, Plg & PP)
APEPDCL, Corporate Office,
Seethammadhara, Visakhapatnam.
 - 4 The Chief General Manager,
(Operation)
APSPDCL, Corporate Office,
Tiruchanoor Road, Tirupati.

GM / P
GM / IPC
EE/CIVIL
EXECUTIVE DIRECTOR

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CGM (Opn.)	CGM (PUR)
CGM (Proj)	CGM (FIN)
CGM (HRD)	
DIR (Opn.)	DIR (PUR)
DIR (Proj)	DIR (FIN)
DIR (HRD)	DIR (RAC)
DIR (E&A)	

CMD



Lr.No. CE/IPC/Solar/F. Rooftop Net metering /D.No. 458/13, Dt..30.07.2013

Sir,

Sub: IPC wing - Solar- Guidelines for implementation of Net metering for Roof top Solar power system-Issued - Reg.

Ref: GoMs. No. 22, dated 25.03.2013 read with GoMs. No. 27, dated 19.06.2013. &&&

Pursuant to the Solar roof top net metering policy announced by GoAP vide references cited above, the APPCC is directed to communicate the guidelines for implementing Solar rooftop net metering policy to encourage large scale generation in the sector and its speedy implementation in the state.

The aforesaid guidelines including the approved formats of agreement, application, approval letter, technical feasibility and inspection are herewith enclosed for taking further necessary action.

Yours faithfully,

[Signature]
30/7/13.
Chief Engineer/IPC

Encl: As stated

Encl no: ED/PCMH,IPC/COM/IPC/F Solar /D no 490/13-8.20

Copy to:

- PS to the Chairman & Managing Director/APNPDCL
- PS to the Chairman & Managing Director/APCPDCL
- PS to the Chairman & Managing Director/APEPDCL
- PS to the Chairman & Managing Director/APSPDCL

All CES zones / VIK & TPT }
All SES Co in APSPDCL } n.a
Encl: as above

DESPATCHED
26/8

[Signature]
ED/PCMH&IPC 26/8/13

DE/PPA
23/8

IPC
24/8

ED
IPC

Roof Top Solar Power Net Metering Solution

Guidelines for implementation of Net Metering for Roof Top Solar Power System

1. Net Metering arrangement is permitted for 3 Phase connections only. The interconnection schematic is enclosed in Appendix A to these guidelines.
2. Consumers can avail Government of AP subsidy and MNRE subsidy, as applicable, in installation of solar power net metering solutions through NREDCAP.
3. Entire circuitry (Appendix A), including panels, inverter, bi-directional meters, cabling, manual switch, safety circuit breaker etc., should be installed by the vendor under a turnkey approach.
4. Mandatory safety precautions/features which have to be installed as part of SPV system are:
 - i. Certified Inverter controlled relays which can trip on grid failure and thus prevent any solar power injection to Grid when there is no power in Grid.
 - ii. Solar Circuit should be separately grounded/ earthed.
 - iii. Additional switchgear/relay (sensing phase-angle shift) required as a second rung of safety. It shall be positioned between interconnection point and the bi-directional meter (Please refer Appendix A).

- iv. Harmonics suppression/Filtering feature in the inverter for local network's safety and for accurate measurement of energy.
5. A single bi-directional meter shall be installed for export and import. This bi-directional meter should have the following characteristics:
 - i. Separate registers for Export and Import with MRI downloading facility.
 - ii. kVAR, kWh, kVA measuring registers for Capacity above 1 KW.
 - iii. AMI facility with RS232 (or higher) communication port.
 - iv. Class 1 accuracy meters for PV systems up to 10 kW, 0.5 accuracy class meters for PV systems above 10 kW and 0.2 class accuracy meters for HT systems (56 kW and above).
 - v. Meters should be BIS/ISI Certified.
 - vi. CT functionality meters for PV systems above 50 kW.
6. Vendor executing turnkey solution should be a channel partner of MNRE.
7. If on inspection, at the time of release of permission to install a net metering solution or on any periodic inspection thereafter, non-IEC/ISI/BIS certified equipment is found to be part of net metering solution on a consumer's premises, the vendor will be blacklisted and the same shall be notified to MNRE.
8. MNRE subsidy, Government of AP subsidy and any other subsidy relevant to Solar Panel based net metering solution which may be rolled out in future, should be front loaded on the consumer cost.

For example, for a solution costing Rs.100, if 30% MNRE and 20% GoAP subsidy is being availed, then the vendor should charge consumer only Rs.50 for installing the solution. Vendor should claim subsidy component from NREDCAP.

9. NREDCAP shall be the nodal agency for release of both MNRE and GoAP subsidy.
10. Net metering bills raised by DISCOM for the first 2 months since installation should be produced by the vendor for the release of subsidy. These bills should be countersigned by concerned DE Operations and District Manager of NREDCAP. Within 15 working days of receipt of such bills subsidy payments shall be cleared.
11. DISCOMs shall accord approvals on a first come first serve basis for Solar Net Metering till the Solar installed Capacity reaches 50% of the closest upstream DTR's rated capacity. After reaching this limit, the capacity of DTR shall be enhanced within next 45 working days to process remaining application from other consumers/SPV source.
12. The nodal point of contact for solar net metering programme shall be the local Divisional Engineer (Operations). The consumer can download solar net metering rooftop application from official websites of APDISCOMs and submit the filled in application to the concerned Divisional Engineer/ Operation/ APDISCOM.
13. DISCOMs personnel shall conduct a feasibility analysis of the DTR within 15 working days of the receipt of completed Application Form.

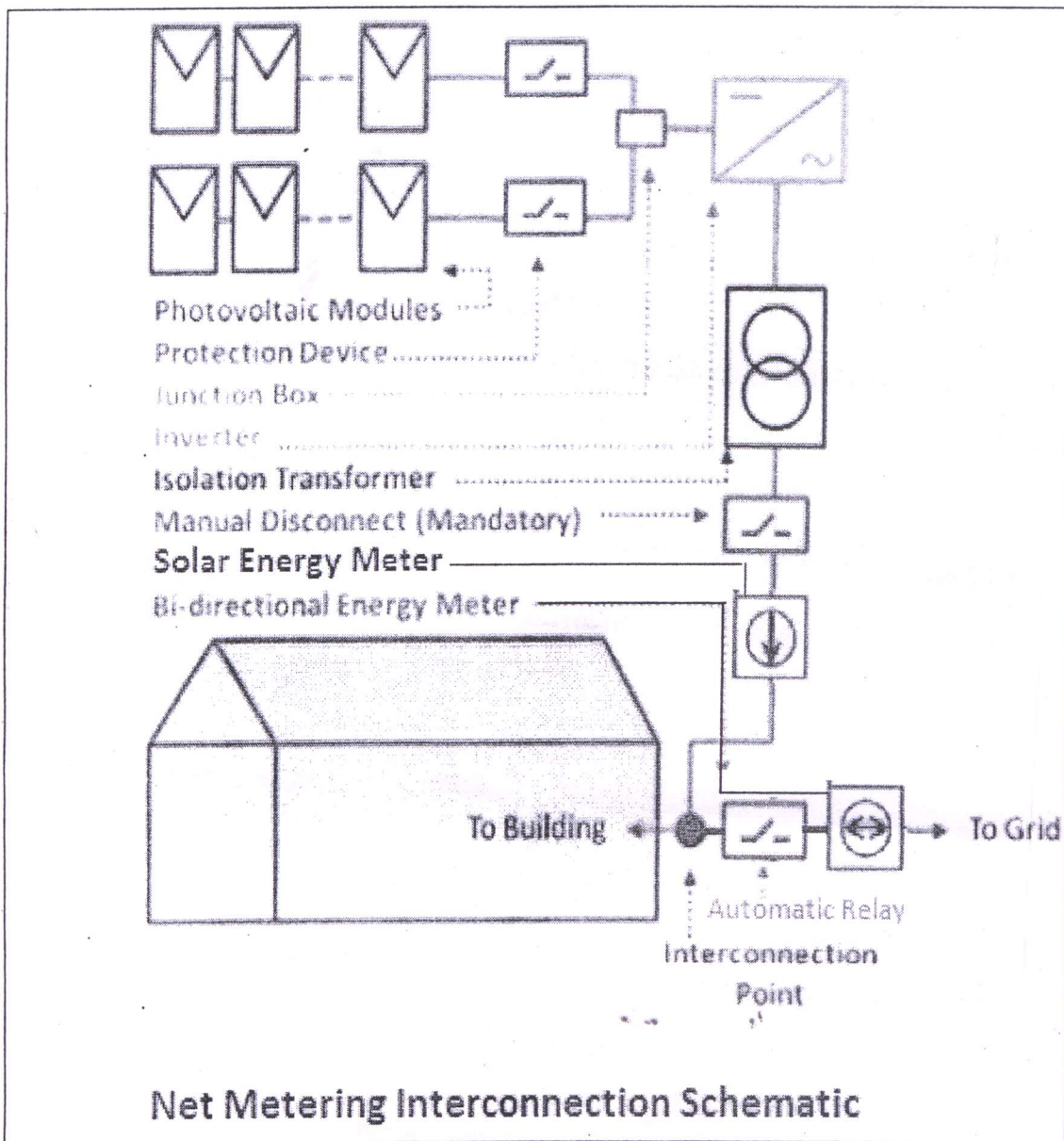
14. Based upon feasibility study, approval shall be granted to the consumer for installation of SPV system. This approval shall contain maximum permissible capacity of the SPV system and shall be valid for a period of 6 (six) months from the date of approval.
15. The consumer shall install a SPV system (within permitted capacity limits) and request the DISCOM authorities for inspection within 6 months of receiving approval.
16. Upon receiving consumer's request, inspection of equipment, circuitry and meter shall be carried out under the supervision of nodal authority and the SPV system shall be synchronized (On successful outcome of evaluation) within 10 (ten) working days.
17. During the period of synchronization of the SPV with the grid, the DISCOM personnel shall inspect, calibrate and seal the bi-directional meters. DISCOM personnel reserve the right to inspect the entire plant routinely at any time and otherwise in accordance with Electricity Act 2003.
18. Guidelines on Billing and Payment:
 - i. The consumer shall receive a net import/export bill indicating either net export to the grid or net import from the grid.
 - ii. In case of net import bill, consumer shall settle the same as per existing norms.

If it is a net export bill, then credit amount shall be carry forward to next month for adjustment against next month import bill. No interest will be payable on this credit forward amount. Net credit available in his account will be refunded

twice in a year based on June and December Month bills of each year. Net Credit amount payable will be deposited by DISCOM in consumer's bank account bearing a/c number provided by consumer at the stage of application, by June and December month end as the case may be. The amount payable for net export of energy will be based on pooled cost decided by APERC for that year.

- iii. 2 months net bill should be submitted by vendors to NREDCAP to claim subsidy.
- iv. DISCOMs shall effect suitable changes in the billing software to capture the impact of above guidelines.
- v. Consumer shall file application in the attached Format.

Appendix-A



Note: 1) Isolation transformer and Solar energy meter may not be necessary.

Note: The schematic diagram shown is a model net metering system. The actual schematic diagram will be based on type tests or MARE approved sketch.

[Handwritten signature]
 30/2/13

Inspection Format for Releasing of Roof Top Solar Generating Unit

A	Name of the applicant	
1	S/C No	
2	Category	
3	Distribution	
4	Pole number	
5	Section	
6	Address	
7	Mobile No	
B	Meter Details	
1	Meter make	
2	Serial number	
3	Capacity	
4	Meter constant	
5	Initial reading (Tri vector parameters)	
6	i) Import	
7	ii) Export	
8	Name of the laboratory where the meter is tested (copy of test results to be enclosed)	
C	Grid Tie Inverter / Connector	
1	Make	
2	Serial number	
3	Capacity	
4	Input voltage	
5	Output voltage	
6	If grid supply fails, status of contactor (on or off)	
D	SPV Module	
1	Make	
2	Serial number	
3	Type of module	
4	Capacity of each module	
5	Number of modules	
6	Total capacity of module	
E	Details of protective system available (feasibility shall be given only on availability of the above)	

Encl:- 1) Single line diagram of SPV generator
2) Specification sheets of all equipments

Divisional Engineer
M&P, -----

Divisional Engineer
Operation, -----

TECHNICAL FEASIBILITY FORMAT FOR THE SOLAR ROOF TOP SPV UNIT

A	Name of the applicant	
1	S/C No	
2	Category	
3	Distribution	
4	Pole number	
5	Section	
6	Address	
7	Mobile No	
B	Distribution Transformer Details	
1	Name of the SS	
2	DTR capacity in KVA	
3	Voltage ratio	
4	Total Connected load on the DTR(in KVA)	
5	Addl. Loads sanctioned so far (in KVA)	
6	Already proposed loads (in KVA)	
7	Total Load on DTR : $X=4+5+6$ (in KVA)	
8	SPV Generators already connected capacity in KW	
9	Proposed SPV generators capacity in KW	
10	Total generation capacity $Y=8+9$ (in KW)	
11	Difference between load and generation capacity $Z=X-Y$	
12	Whether the transformer capacity is adequate to cater the proposed generator in addition to the existing loads and generators capacity with NPDCL and other sources (if any)	
C	FEEDER DETAILS	
1	Name of the 11KV feeder	
2	Name of 33/11 SS from which 11KV feeder is emanating	
3	Type and size of the conductor	
4	Current carrying capacity of the feeder	
5	Total connected DTR capacity on this 11KV feeder(KVA)	
6	SPV generators connected on this feeder, if any, and their capacity	
7	Maximum load reached on the feeder in Amps & KVA	
8	Remarks	
D	Whether technically feasible or not to export the power from proposed SPV generator (Yes or No)	

Encl:- LT Sketch

Divisional Engineer
Operation, -----