

## **Solar Rooftop Policy/ Guidelines**

### **I. Eligible Developers**

All registered companies, Government entities, partnership companies/ firms/ individuals and all consumers of APDiscom(s) will be eligible for setting up of Solar Rooftop Projects (SRP) for sale of electricity to Discom/captive use or for self-consumption, in accordance with the Electricity Act-2003, as amended from time to time.

Group of persons/societies will also be eligible for setting up Solar Rooftop Projects (SRP) with SPV Technology for sale of electricity to Discom/captive use or for self-consumption.

SRP with installed capacity lower than or equal to 56 kW shall be connected at LT level of distribution network. SRP with installed capacity of 56 kW above and up to 1000 kW shall be connected at 11 kV or 33 kv level of distribution network. However, the installed capacity of SRP for connectivity at distribution network shall be as amended by APERC from time to time.

#### **Requirements:-**

- A Minimum vacant roof area of 10 Sq mtr or 100 Sq. Ft is required for installation of 1 KWp system.
- The Consumer shall have 3 Phase/ 1 Phase supply service connection.
- Mandatory safety precautions/features shall be installed as per the norms.
- A Single bi-directional meter shall be installed for export and import.
- The standard equipment as per the norms of MNRE/APTRANSCO/DISCOM shall only be installed.

### **II. General Information:**

- a) Eligible Developers are free to choose either net or gross metering option for sale of power to Discom. Applicable tariff for either of the cases shall be equal to the Average Cost to Serve (ACoS) of the Discom which will be determined by APERC every year.
- b) Also, Eligible Developers can install Solar Photo Voltaic Plants (SPV) on walls of their buildings.
- c) Eligible Developers will have to apply only through online mode to the Discom – either on their websites and/or with help of designated mee seva / customer service centres.
- d) Eligible developer can install SPV plant of more capacity than their contracted load whereas maximum allowable capacity under single-phase service is 3 kWp and maximum allowable SPV plant capacity under LT category is 56 kWp.
- e) Eligible Developers are allowed to avail the relevant subsidies and incentives from MNRE and from other Departments applicable from time to time.
- f) The eligible subsidy may be processed through NREDCAP (Nodal agency) or Channel Partners of MNRE, GOI. The sanction and release of the subsidy will be as per the guidelines issued by MNRE from time to time.

- g) No prior approval of Chief Electrical Inspectorate General (CEIG) is required in case of an SRP connected at LT level of distribution network up to 10 kW capacity.
- h) Incentives/ Other Charges/Administrative Fee - No Distribution losses and charges will be collected from the Eligible Developers /Group /Society /Individuals by the DISCOMs. All other charges shall be applicable as per the Tariff Order amended from time to time. The registration and facilitation fees shall be paid by Eligible Developer to Nodal agency as specified in the Policy.
- i) The insurance coverage can be optional for the LT Consumers opting Solar Net metering scheme. However, the consumers/ Solar Power developer may be advised to take insurance coverage to avoid risks at the time of accidents.
- j) The Solar rooftop developers/ MNRE channel partners maybe allowed to attend the departmental procedures on behalf of applicant, except in case of signing the agreement.
- k) Pre existing rooftop Solar PV Projects with or without battery support can be allowed to avail net metering facility. They will not get any subsidy under solar net metering policy/ guidelines issued.

### III. Application

Eligible Developer shall make an application to Discom for setting up a SRP along with the necessary information/ document on system size, inter-connection voltage, choice of either gross or net metering option, personal information etc., by paying an application fee of Rs. 25/-. The Eligible Developer/ Societies/ Groups shall pay application fee through online or by cash. The Eligible Developer shall strictly adhere to the standards specified by CEA/MNRE.

### IV. Technical Feasibility:

DISCOM personnel shall carry out the technical feasibility study based on the Application submitted by the Eligible Developer. An internal review to check if the proposed SRP satisfies the standards specified by the CEA, especially with respect to inverter specifications, penetration levels, safety aspects like anti-islanding and protection devices and etc shall be undertaken. This study shall be carried out within seven (7) working days from the date of submission of application. In absence of any intimation from the DISCOM within this time period, it shall be considered as deemed approval.

DISCOM shall accord feasibility approval to consumers on a first come first serve basis. The maximum penetration limits at the LT level of distribution network are as specified in the table

below:

Year	<b>Maximum Penetration Limit</b> - <i>Ratio of aggregate installed SRP capacity under the DTR to the DTR capacity</i>

FY 2015-16	50%
FY 2016-17	60%

For HT Service, consumer shall be responsible to match the SPV plant capacity with the DTR Capacity.

Feasibility study and inspection shall be the responsibility of DISCOM/ ADE in case of LT services and DE (M & P) & DE (Operations) in case of HT services. Feasibility and Synchronization approvals for LT services to be given by ADE/Operation, Feasibility and synchronization approvals for HT services to be given by Superintending Engineer/Operation.

**V. Agreement and SRP Installation**

The Eligible Developer and the Discom shall enter into an agreement that specifies the technical information, commercial arrangement and the clear roles and responsibilities of all concerned stakeholders as specified in **Annexure-C(C1 for Individual Consumers,C2 for Societies/Group of consumers)**. within 15 days of issuing Technical feasibility, if Agreement is not entered by the Consumer of Discom, application is deemed to be cancelled.

The SRP shall be installed within three (3) months from the date of Agreement. In case of any delay beyond three months, one time extension of 15 days shall be provided after which the agreement shall be deemed terminated without any reason.

**VI. Pre-commissioning check and commissioning of the PV system:**

Post installation of the SRP, the Eligible Developer shall make a (online) request for inspection. The DISCOM personnel shall inspect the system within 10 working days and provide approval based on checklist mentioned in **Annexure- A**. In absence of the response within the stipulated time, it shall be considered as deemed inspection approval.

**VII. Metering and Synchronization:**

**A Single bi-directional meter shall be installed for export and import. Check meter to be provided if SRP capacity is more than 10 KWp.**

All meters must be Smart Meters as per the standards specified by the CEA, CERC/APERC regulations where ever applicable, as amended from time to time. AP Discoms shall provide net metering (net meter along with its connected CT's, PT's wherever applicable) on cost basis. Eligible Developers shall be free to procure Meters, Current Transformers (CT), and Potential Transformer (PT) either from open market or DISCOM. If the metering equipment is purchased by the Developer, the same is to be tested at standard laboratory at the cost of Consumer only.

Eligible Developer has to raise a request the Discom for metering infrastructure through online mode/ Mee seva / customer service centres by paying the requisite amount after the inspection approval. DISCOM personnel shall deliver the metering infrastructure within **7 working days** and the Eligible Developer shall be responsible for its safe-keeping during the interim period until grid synchronization.

The SRP shall be synchronized within seven (7) working days of inspection approval /Payment of metering cost. Upon synchronization of the SRP with the grid, the DISCOM personnel shall inspect, calibrate and seal the meter(s) and ensure installation of safety features/precautions. A commissioning certificate would be issued by the DISCOM/CEIG subject to the test results which should conform to the Regulatory requirements/ Standards.

Meter reading shall be done as per the prevailing Discom procedure. The applicable customer charges shall be payable to Discom.

Eligible Developer shall be assigned a unique service number for metering and billing purposes. All Eligible Developers have to submit their bank details where payments shall be made through electronic transfer by APDISCOMs. The Eligible Developer shall submit a cancelled cheque with bank a/c No. & IFSC Code along with Application form.

The DISCOM official (ADE/AE) shall send test reports of the SRP along with the agreement to the concerned ERO. Billing process shall start within one month/ next Billing cycle of synchronizing the SRP. In case of HT services ADE/DE operation will submit the Test Report to Senior Accounts Officer of the concerned circle.

#### **VIII. Energy Settlement and Billing/Invoicing:**

Energy settlement shall be done on a monthly basis. Group of persons/societies setting up SRP's will be treated as collective generation for supply of power to the households of each society /group member. In case of Apartments/Group Houses, common meter may be used for net metering. The Developer /Consumer has to choose either for Net Metering / Gross Metering at the time of registering the application.

**Net Metering:** The energy generated from SRP shall be adjusted against the consumption of energy from the DISCOM by the Eligible Developer/ consumer every month. In case of Groups/Societies, the energy generated shall be prorated as per the installed capacity share indicated in the Agreement between the group/society and DISCOM. This computed energy share shall be adjusted against the consumption of energy for each consumer every month.

- In case of excess generation (after energy adjustment) injected in to DISCOM network in a billing month will be carried forward to next month till every quarter end and settlement will take place on Average Cost of Supply (ACoS) basis for net metering as determined by APERC from time to time.

- In case of excess consumption in any month, payment shall be made by the Eligible Developer /Group /Society for the net energy at the applicable tariff as determined by APERC every year.

**Gross Metering:** In case of Gross metering, the SPV generator shall pay for the energy utilized in a billing month as per applicable retail supply tariff decided by regulatory commission to the concerned DISCOM and energy supplied to DISCOM by the Developer / Consumer will be paid on monthly, basing on ACoS as determined by APERC from time to time.(net amount will be credited)

A limit shall be defined for all Eligible Developers in terms of energy, beyond which no payment shall be made by APDISCOM. Please refer example in **Annexure-E**.

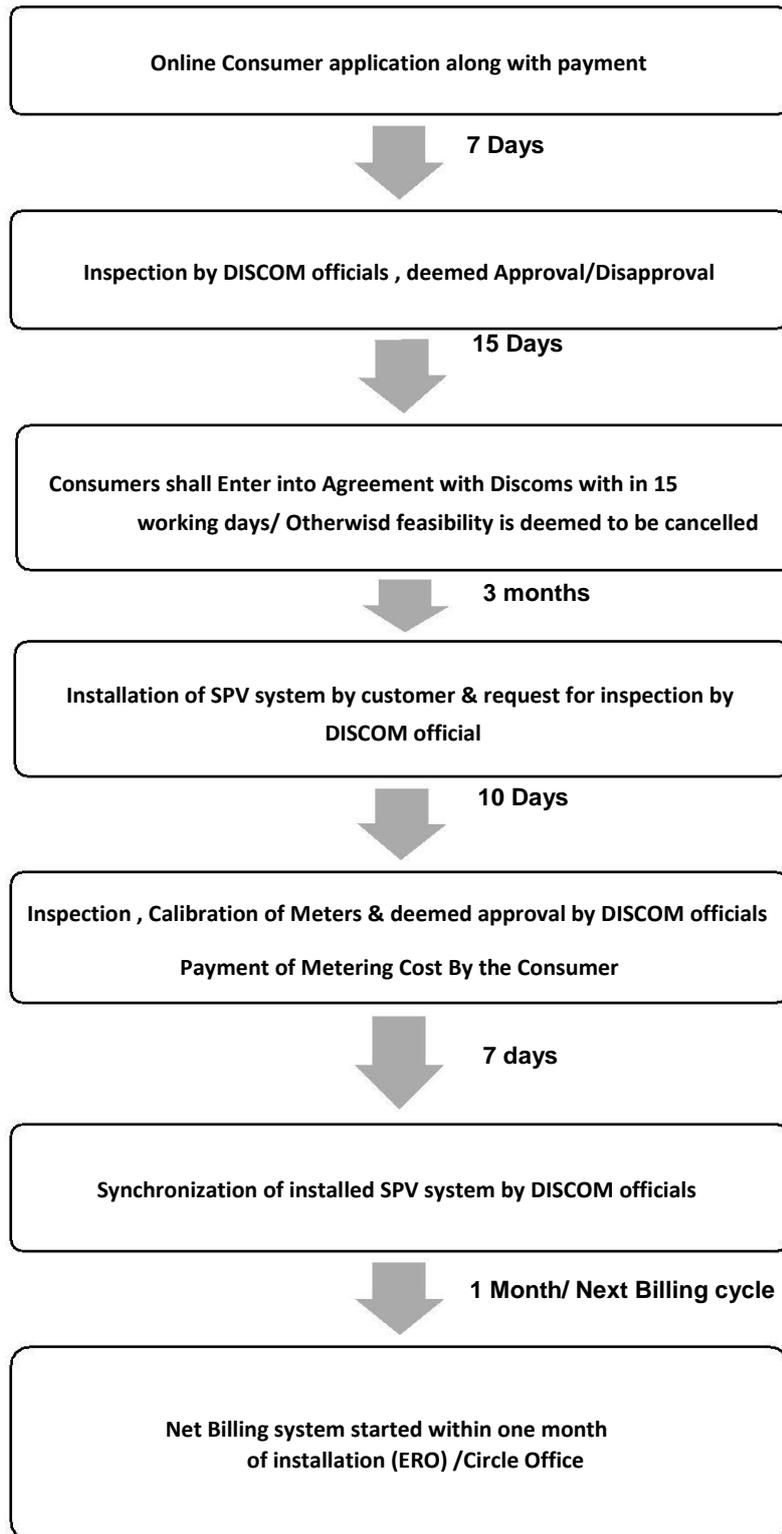
**IX. Inspection:**

- a) DISCOM personnel reserve the right to inspect the SRP routinely at any time during the term of the Agreement. As part of the inspection, DISCOM officials have to ensure that check the following aspects
  - All protective equipment of the SPV system are functioning as per specifications.
  - The SPV system including the panels, inverters, etc continue to meet the requirements of Indian & IEC standards post installation till contract completion.
- b) An Eligible Developer, found indulging in theft of electricity or unauthorized use of electricity, shall pay the additional charges as may be levied by the DISCOM as per provisions of Electricity Act 2003. DISCOM may levy additional charge besides disconnection of electricity supply.

## Annexure-A

- I. Entire circuitry, including panels, inverter, Solar Generation meter, cabling, manual switch, safety circuit breaker etc., should be installed by the vendor under a turnkey approach. The metering infrastructure can also be provided by APDISCOM.
- II. Mandatory safety precautions/features which have to be installed as part of SPV system are:
  - a. 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. The same is to be ensured by the consumer from time to time.
  - b. Solar Circuit should be separately grounded/ earthed.
  - c. 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.
  - d. Harmonics suppression/Filtering feature in the inverter for local network's safety and for accurate measurement of energy.
  - e. Additional manual relay / switch on the pole side to be installed at the cost of SRP developer.
- III. Hybrid Islanding is permitted, whereby the consumer can use solar generation from rooftop SPV, even when the grid is not available. If the consumer desires, he may do so by installing appropriate protection systems before synchronization. The same has to be tested & permitted by DISCOM official(s) before synchronization.
- IV. A single bi-directional meter shall be installed for export and import. This bi-directional meter should be a **smart meter** with the following characteristics:
  - a. Separate registers for Export and Import with MRI downloading facility.
  - b. kVAr, kWh, kVA measuring registers for Capacity above 1 KW.
  - c. AMI facility with RS232 (or higher) communication port.
  - d. Class 1 accuracy meters for PV systems up to 10 kWp, 0.5 accuracy class meters for PV systems above 10 kWp and 0.2 class accuracy meters for HT systems (50 kWp and above).
  - e. Meters should be BIS/ISI Certified.
  - f. CT functionality meters to be provided for PV systems above 15 kWp.
- V. Vendor executing turnkey solution should be a channel partner of MNRE.
- VI. 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/Consumer shall be blacklisted and the same shall be notified to MNRE.
- VII. A Check meter with import/export, MRI Compatible, tri-vector meter with provision to record 3-Line currents, 3-Phase voltage, V-THD & I-THD in load curve to be provided in case of Solar generation more than 10 KW.

**Annexure- B: Flow Chart of process & associated Service Level Agreements (SLAs)**



## **Annexure D: Example of Net & Gross Billing**

Assumption-1: Retail Tariff of FY 2013-14 is applicable

Consumer Category	Unit	Fixed Charge (Rs./Month)	Energy Charge (Rs./kWh)
<b><i>LT-I : Domestic (Telescopic)</i></b>			
LT-I (A): Upto 50 Units / Month	kWh		1.45
<b><i>LT-I (D): Above 50 Units/Month (Consumers above 200 units/month)</i></b>			
First 50 units	kWh	0	2.60
51-100 units	kWh	0	3.25
101-150 units	kWh	0	4.88
151-200 units	kWh	0	5.63
201-250 units	kWh	0	6.70
251-300 units	kWh	0	7.22
301-400 units	kWh	0	7.75
401-500 units	kWh	0	8.27
Above 500 units	kWh	0	8.80

Assumption-2: Average Cost to Serve (ACoS) for the current year is Rs. 6.00 / kWh

Domestic Consumer installs a 2 kWp SRP and the SRP generates 288 units per

month. Case -1: Net Metering

Month	Billed Consumption grid (Units)	Demand/ from	SRP Generation (Units)	Net (Rs.)	Energy	Net Payment by DISCOM (Rs.)	Monthly
	<b>A</b>		<b>B</b>	<b>B-A =C</b>		<b>C*ACoS</b>	
Jan	250		288	38		228	
Feb	350		288	(62)		0	
Mar	400		288	(112)		0	

Case -2: Gross Metering

Month	Billed Demand / Consumption from grid (Units) A	Billed Demand / Consumption from grid (Rs.) (A * Applicable Tariff as per APERC) = B	SRP Generation (Units) C	SRP Payment (Rs.) (C* ACoS)=D	Net Monthly Payment by DISCOM (Rs.) (B-D)
Jan	250	1,153	288	1,728	575
Feb	350	1,901.50	288	1,728	0
Mar	404	2,322	288	1,728	0

**Net Metering for Group Consumers:** (Total Generation of SRP in the month 1000 units.  
ACoS for the current year Rs.6.00/KWH

Name of the Consumer	% of Investment in SRP plant	Units to be allotted	Consumer Consumption in the Month	Net Payment
Consumer A	50%	500	400	Amount to be credited for 100 Units
Consumer B	30%	300	350	Bill to be issued for 50 Units
Consumer C	20%	200	200	-

**Gross metering for Group Consumers**

Name of the Consumer	% of Investment in SRP plant	Units to be allotted	Consumption in the Month	Generation Amount	Bill Amount	Net effect
Consumer A	50%	500	400 Units	Rs.3000	Rs.2289	To be credited Rs 711
Consumer B	30%	300	350 Units	Rs.1800	Rs.1902	Bill to be issued Rs.102
Consumer C	20%	200	200 Units	Rs.1200	Rs.818	To be credited Rs.382/-

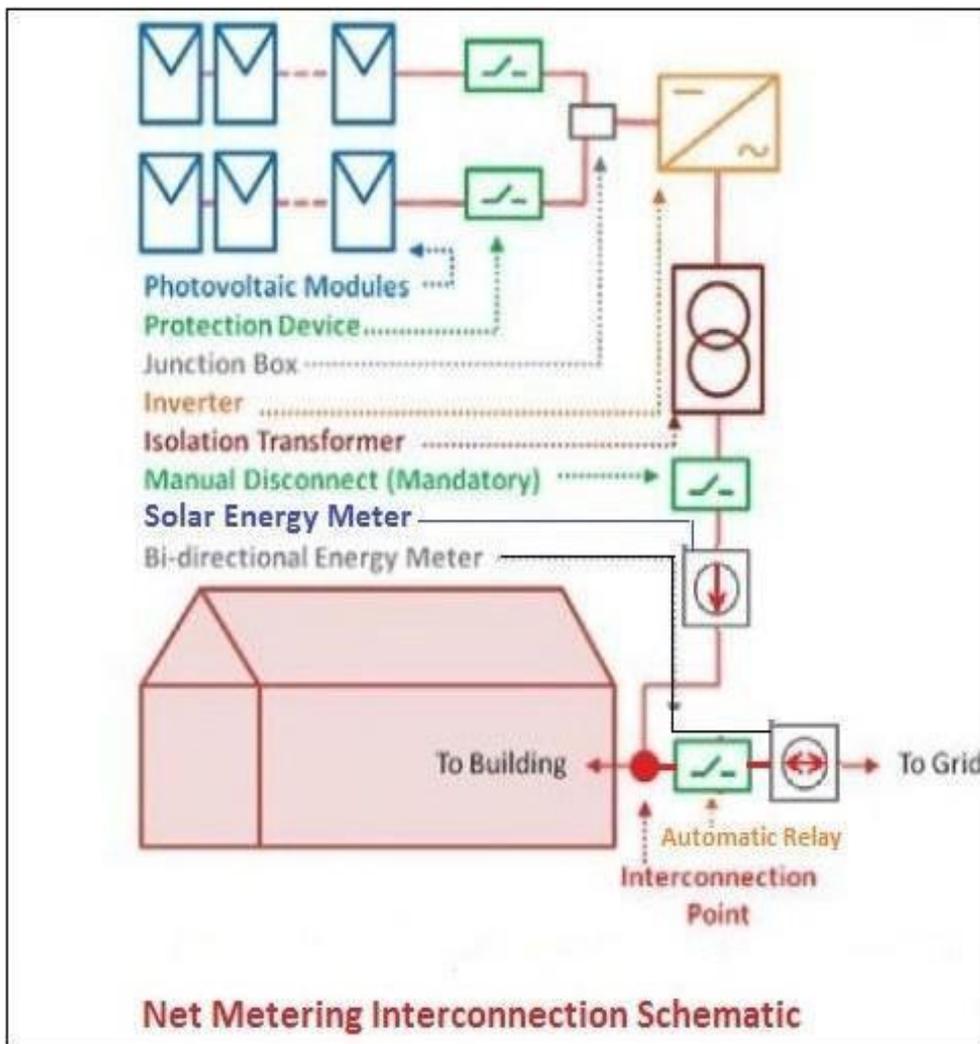
### **Annexure-E**

This check is for ensuring that the SPV system is not misused. This energy limit may be computed by using 20% CUF/PLF of the installed SPV capacity

Case-1: Consumer installs a 500 Wp SPV system and opts for Gross / Net Metering. The SPV system generates 72 units per month. Any surplus injection above 72 units shall be treated as inadvertent and no payment shall be made for it.

Case-2: Consumer installs a 5 kWp SPV system and opts for Gross / Net Metering. The SPV system generates 720 units per month. Any surplus injection above 720 units shall be treated as inadvertent and no payment shall be made for it.

### **Annexure-F: Schematic**



# SOUTHERN POWER DISTRIBUTION COMPANY OF A.P. LIMITED

**Application Form for solar grid interactive roof-top and small SPV power plants  
for Net/Gross metering.**

(in terms of G.O.Ms.No. 8Dt:12.02.2015 read)

Photo of the Applicant/ Office-bearer of Group/ Society  I	<p style="text-align: right;"><b>For Office Use:</b></p> Reg.No.:----- Date:----- Mode of Payment: Online/ <input type="checkbox"/> Cash <input type="checkbox"/> Transaction No. : _____ Amount: _____ Date : _____
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<i>Items marked with * (star) are mandatory</i>			
1	Name of the applicant*		
2	Applicant full address for correspondence*	H. No & Street	
		Village & Mandal	
		District & PIN Code	
3	Phone/Mobile No.*		
4	Email ID		
5	Identification Proof Details*	Aadhar No:	
		PAN/Voter ID/DL:	
6	Address of the site for installation*	H.No & Street	
		Village & Mandal	
		District & PIN Code	
7	Service Connection No*		
8	Proposed SPV Plant Capacity (KWp)*		
9	Option for Net metering / Gross metering*		
10	Consumer Bank Details* (Kindly enclose cancelled cheque)	A/c No.	
		Bank & Branch	
		IFSC Code	
11	Applicant Type*	<input type="checkbox"/> Individual <input type="checkbox"/> Group/Society/etc	
12. In case of Group/ Societies, kindly provide details in Annexure-1 (Share of capacity):			

**Declaration for Individuals & Office Bearer/ Lead member of Group/Society**

I here by declare that the information furnished above is true to the best of my knowledge and belief. If found false, APSPDCL has the right to reject / cancel the application .Further,I here by agree with the specifications, terms and conditions stipulated by APSPDCL for the selection and installation of roof-top solar power plant and I have gone through the Guidelines of Solar rooftop policy.

Place:

Signature:

Date:

Name :

**CHECKLIST:**

- |   |          |
|---|----------|
| 1.Copy of electricity bill                  | (YES/NO) |
| 2. Blank cancelled cheque                   | (YES/NO) |
| 3. Annexure-1 (In case of Group/ Societies) | (YES/NO) |
| 4. ID Proof Copy                            | (YES/NO) |

**Annexure-1**

**Declaration for Groups/Societies**

W e here by declare that the information furnished above is true to the best of my knowledge and belief. If found false, APSPDCL has the right to reject / cancel the application. Further, I here by agree with the specifications, terms and conditions stipulated by APSPDCL for the selection and installation of roof-top solar power plant and I have gone through the Guidelines of Solar rooftop policy.

Place:

Date:

Sl.No.	Consumer Name	Installation Capacity share (%)	Consumer Service number	Signature for consent

**CHECKLIST:**

- |   |          |
|---|----------|
| 1. Copy of Electricitybill (s)              | (YES/NO) |
| 2. Blank cancelled cheque                   | (YES/NO) |
| 3. Annexure-1 (In case of Group/ Societies) | (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. 8, Dt:12.02.2015 read with

The following Registration Number has been allotted to your application.

Registration Number	
Date of Registration	

*(To be filled by Office)*

**Designated Officer/OP/ SPDCL**

**TECHNICAL FEASIBILITY FORMAT FOR THE SOLAR ROOF TOP SPV UNIT**

<b>A</b>	Name of the applicant	
1	S/C No	
2	Category	
3	Distribution	
4	Pole number	
5	Section	
6	Address	
7	Mobile No	
<b>B</b>	<b>Distribution Transformer Details</b>	
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 SRP generator ( Total SRP plants capacity less than or equal to 50% of rated capacity of the DTR)	
<b>C</b>	<b>FEEDER DETAILS</b>	
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	
<b>D</b>	<b>Whether technically feasible or not to export the power from proposed SPV generator (Yes or No)</b>	

Encl:- LT Sketch

**Assistant Divisional  
Engineer,  
Operation,  
.....**

### Inspection Format for Releasing of Roof Top Solar Generating Unit

<b>A</b>	Name of the applicant	
1	S/C No	
2	Category, Phase	
3	Distribution	
4	Pole number	
5	Section	
6	Address	
7	Mobile No	
<b>B</b>	<b>Meter Details</b>	
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)	
<b>C</b>	<b>Grid Tie Inverter / Connector</b>	
1	Make	
2	Serial number	
3	Capacity	
4	Input voltage	
5	Output voltage	
6	If grid supply fails, status of contactor ( on or off)	
<b>D</b>	<b>SPV Module</b>	
1	Make	
2	Serial number	
3	Type of module	
4	Capacity of each module	
5	Number of modules	
6	Total capacity of module	
<b>E</b>	<b>Details of protective system available</b> ( feasibility shall be given only on availability of the above)	

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

**Assistant Divisional Engineer,**  
**Operation,**

SOUTHERN POWER DISTRIBUTION COMPANY OF AP LIMITED

Office of the  
Asst.Divisional Engineer,  
Operation,  
-----

Lr.No.ADE/O/APSPDCL/ /F:Solar Roof Top/ Doc No:                      D.No.                      Dt.

Sir,

Sub:- Elcy-SPDCL-Op-Sub-Divn- Installing of ----- KWp solar roof top SPV generator-  
\_\_\_\_\_ (Name), situated at S/C No: \_\_\_Category\_\_\_Phase\_\_\_Contrcted  
Load\_\_\_\_\_ KW,Distribution \_\_\_\_\_,Technical Feasibility issued - Reg.

Ref: Your application No:....., Dt.....  
\*\*\*\*\*

With reference to your application for installation of solar SPV generator  
for \_\_\_\_\_ KWp on your roof top proposed at H.No.\_\_\_\_\_, Village  
\_\_\_\_\_, \_\_\_\_\_ (M), \_\_\_\_\_ (Dist),situated at Service  
Connection No\_\_\_\_\_,Distribution\_\_\_\_\_,Category\_\_\_\_\_,Phase\_\_\_\_\_,Contrcted  
Load\_\_\_ is inspected by the undersigned on \_\_\_\_\_ and found  
Technically feasible.

Hence approved vide SRT No:\_\_\_\_\_ / Dt:  
\_\_\_\_\_

You are further requested to enter into the Agreement on Rs 10/-stamp  
paper as per the format communicated with in 15 days.The SPV system is to be  
installed with in three months. After installation you are requested to approach  
this office with relevant documents (Solar Generation Meter, SPV modules, Grid  
Tie Inverter, Protective system) and obtaining CEIG approval( If SPV plant  
capacity is more than 10 KW under LT), for further processing.

Encl: 1) Technical Feasibility  
2)Model Agreement

Assistant Divisional  
Engineer,  
Operation,  
.....

To  
(Consumer Name and Address).

## ANNEXURE C 1 (Individual Consumer)

### Solar Rooftop Net/Gross Metering Connection Agreement

(On Non-Judicial stamp paper worth Rs. 10/-)

This Agreement is **executed** and entered into at (location) \_\_\_\_\_ on this (date)\_\_\_ day of \_\_\_\_\_(month) \_\_\_\_\_(Year)between the Eligible Consumer, **M/s/Mr./Mrs.** \_\_\_\_\_  
**S/o, D/o, W/o** \_\_\_\_\_ residing at \_\_\_\_\_(address)  
\_\_\_\_\_ **which means their/his/its/ theirs, successors** as first party AND Southern Power Distribution Company Ltd. (herein after called as **Discom**) and having its registered office at \_\_\_\_\_(address)  
\_\_\_\_\_ as 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 party herein after called the 'Discom'**.

Whereas, the eligible consumer has taken the responsibility to set up or facilitate the requisite Photovoltaic system and injection of Power into the Discom's grid

And whereas, the Discom agrees to benefit the eligible consumer for the electricity generated and as per conditions of this agreement and Solar rooftop guidelines.

Both the party hereby agrees to as follows:

## **1. Eligibility**

1.1 Eligible consumer is required to be aware, in advance, of the standards and conditions his system has to meet for being integrated into grid/distribution system.

1.2 Eligible consumer agrees that connection of Photovoltaic system to Discom's distribution system shall be bound by requirements of state Distribution Code and/or Discom's conditions of service. The grid shall continue to perform with specified reliability, security and quality as per the Central Electricity Authority (Grid Standard) Regulations 2010 as amended from time to time.

1.3 All registered companies, Government entities, partnership companies/ firms, individuals and all consumers of APDiscom(s) will be eligible for setting up of Solar Power Projects within the State for sale of electricity/captive use, in accordance with the Electricity Act, 2003 and Andhra Pradesh Solar Power Policy, as amended from time to time.

1.4 Group of persons/societies will also be eligible for setting up Solar Rooftop Projects (SRP) for sale of electricity to Discom/captive use or for self-consumption.

## **2. Capacity of the SPV Plant and Maximum Contracted Load of the premises**

2.1 The Eligible Developer/ consumer is proposing to install rooftop solar power plant of \_\_\_\_ kWp capacity under Solar \_\_\_\_ (Net/ Gross) metering facility at D.No. \_\_\_\_, Street \_\_\_\_, \_\_\_\_ (V), \_\_\_\_ (M), \_\_\_\_ (Dist) having electrical service Connection No. \_\_\_\_, Category \_\_\_\_, Distribution \_\_\_\_ for a contracted load of \_\_\_\_ kW/HP/KVA. The Eligible Developer 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 which shall be extended for a period of 25 years.

## **3. Governing Provisions**

The Eligible developer hereby undertake to comply with all the requirements of the Electricity Act, 2003, the Rules and Regulations framed under, provisions of the tariffs, applicable Charges and 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. Technical and Interconnection Requirements**

4.1 Eligible consumer agrees that he will install, prior to connection of Photovoltaic system to Discom's distribution system, an isolation device and agrees for the Discom to have access to and operation of this, if required, for repair and maintenance of the distribution system.

4.2 Eligible consumer agrees that in case of a power outage on Discom's system, photovoltaic system will shut down, unless special transfer and isolating capabilities have been installed on photovoltaic system. The Discom shall not be obligated to accept and may require the Eligible Developer to interrupt or reduce deliveries when necessary with a reasonable notice to the Eligible Developer.

4.3 The Eligible Developer shall strictly adhere to the standards specified by CEA/MNRE and installations of electrical equipment must comply with Indian Electricity rules, 1956.

4.4 The Eligible Developer can install SPV on building walls also.

4.5 Prior approval of Chief Electrical Inspectorate General (CEIG) is required in case of an SRP connected at LT level of distribution network with more than 10 kW capacity.

4.6 Eligible consumer agrees that Discom will specify the interface/inter-connection point and metering point.

4.7 Eligible consumer agrees to adhere to following power quality measures as per International or Indian standards and/or other such measures provided by Commission/Discom.

a. Harmonic current: Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519.

b. Synchronization: Photovoltaic system must be equipped with a grid frequency synchronization device.

c. Voltage: The voltage-operating window should minimise nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond a clearing time of 2 seconds, the Photovoltaic system must isolate itself from the grid.

d. Flicker: Operation of Photovoltaic system shouldn't cause voltage flicker in excess of the limits stated in the relevant sections of IEC standards or other equivalent Indian standards, if any.

e. Frequency: When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), the Photovoltaic system shouldn't energize the grid and should shift to island mode.

f. DC Injection: Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point or 1% of rated inverter output current into distribution system under any operating conditions.

g. Power Factor: While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 should operate.

h. Islanding and Disconnection: The Photovoltaic system in the event of voltage or frequency variations must island/disconnect itself within IEC standard on stipulated period.

i. Overload and Overheat: The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored.

j. Paralleling device: Paralleling device of Photovoltaic system shall be capable of withstanding 220% of the nominal voltage at the interconnection point

k. The maximum penetration limits at the LT level of distribution network are as specified in the table below:

Year	<b>Maximum Penetration Limit</b> - <i>Ratio of aggregate installed SRP capacity under the DTR to the DTR capacity</i>
FY 2015-16	50%
FY 2016-17	60%

4.8 Eligible consumer agrees to furnish all the data such as voltage, frequency, and breaker, isolator position in his system, as and when required by the Discom.

4.9 Grid Connectivity and Evacuation facility:

The power generated from a Solar Power Project shall be injected at an appropriate voltage at the sub-station and/or interconnection point of the APTransco / Discom(s). The Eligible Developer shall bear the entire cost of construction of power evacuation facilities from the project up to the interconnection point and/or up to APTransco / Discom(s) substation.

The Eligible Developer shall abide by the orders, rules, regulations and terms and conditions as approved by the Commission from time to time for operation of Solar Power Projects, power evacuation, transmission and wheeling of energy. Solar Power Projects will be exempted from paying the Supervision charges to APTransco/Discom(s) towards the internal evacuation infrastructure within the project site and up to interconnection point. Any upstream system-strengthening requirement shall be borne by APTransco/ Discom(s) on a priority basis.

4.10 It is imperative to seek the technical details of the installation infrastructure from the supplier at the time of system installation and retain with the Eligible developer/ consumer.

## **5. Implementation Process:**

Implementation of solar rooftop net/ gross metering facility will be as per the following guidelines:

- l) Under Net metering, Power is first sent to the appliances and lights in the house, and *if* excess remains, it is exported to the outside electricity network and its quantum recorded.
- i) Under Gross Metering, *all* solar electricity generated is exported to the outside electricity network through an independent meter.
- ii) Eligible Developers are allowed to avail the relevant subsidies and incentives from MNRE and from other Departments.
- iii) The eligible subsidy may be processed through NREDCAP (Nodal agency) or Channel Partners of MNRE, GOI. The sanction and release of the subsidy will be as per the guidelines issued by MNRE from time to time.
- iv) Incentives/ Other Charges/Administrative Fee - No Distribution losses and charges will be collected from the Eligible Developers /Group /Society /Individuals by the DISCOMs. All other charges shall be applicable as per the Tariff Order amended from time to time. The registration and facilitation fees shall be paid by Eligible Developer to Nodal agency as specified in the Policy.

### **5.1 Request for Connectivity**

The Eligible Consumer 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 the Eligible Consumer from back-feeding a de-energized line, the Eligible Consumer 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 Eligible Consumer 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 Eligible Consumer 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.

### **5.2 Metering and Synchronization:**

All meters must be Smart Meters as per the standards specified by the CEA regulations as amended from time to time. Eligible Developers shall be free to procure Meters, Current Transformers (CT), and Potential Transformer (PT) either from open market or DISCOM. If the metering equipment is purchased by the Developer, the same is to be tested at standard laboratory with consumer's expenses.

Meter reading shall be done as per the prevailing Discom procedure. The applicable customer charges shall be payable to Discom.

Billing process shall start within one month/**next billing cycle** after synchronizing the SRP plant.

### **5.3 Energy Settlement and Billing/Invoicing:**

Energy settlement shall be done on a monthly basis. Group of persons/societies setting up SRP's will be treated as collective generation for supply of power to the households of each society /group member. In case of Apartments/Group Houses, common meter may be used for net metering

**Net Metering:** The energy generated from SRP shall be adjusted against the consumption of energy from the DISCOM by the Eligible Developer/ consumer every month. In case of Groups/Societies, the energy generated shall be prorated as per the installed capacity share indicated in the Agreement between the group/society and DISCOM. This computed energy share shall be adjusted against the consumption of energy for each consumer every month.

- In case of excess generation (after energy adjustment) in any month, payment shall be made by the Discom for the net energy computed at the **Average Cost to Serve (ACS)** as determined by APERC every year.
- In case of excess consumption in any month, payment shall be made by the Eligible Developer /Group /Society for the net energy at the applicable tariff as determined by APERC every year.

**Gross Metering:** The payment for energy generated from SRP will be computed at the **Average Cost to Serve (ACS)** of the Discom as determined by APERC every year. This shall be adjusted against the total billing demand for consumption of energy for the Eligible Developer/ consumer from the DISCOM every month. The balance amount after adjustment for the month shall be made by the Discom.

A limit shall be defined for all Eligible Developers in terms of energy, beyond which no payment shall be made by APDISCOM. Please refer example in **Annexure-E**.

### **6. Access and Inspection:**

- a) The DISCOM's personal may enter the Eligible consumer's premises to inspect the Eligible consumer's protective devices and read or test the meter.

- b) DISCOM personnel reserve the right to inspect the SRP routinely at any time during the term of the Agreement. As part of the inspection, DISCOM officials have to ensure that check the following aspects
- All protective equipment of the SPV system are functioning as per specifications.
  - The SPV system including the panels, inverters, etc continue to meet the requirements of Indian & IEC standards post installation till contract completion.
- c) An Eligible Developer, found indulging in theft of electricity or unauthorized use of electricity, shall pay the additional charges as may be levied by the DISCOM as per provisions of Electricity Act 2003. DISCOM may levy additional charge besides disconnection of electricity supply.

## **7. Safety**

7.1 Eligible consumer shall comply with the Central Electricity Authority (Measures Relating to Safety and Electricity Supply) Regulations 2010 as amended from time to time.

7.2 Eligible consumer agrees that the design, installation, maintenance and operation of the photovoltaic system are performed in a manner conducive to the safety of the photovoltaic system as well as the Discom's distribution system.

7.3 Due to Discom's obligation to maintain a safe and reliable distribution system, eligible consumer agrees that if it is determined by Discom that eligible consumer's photovoltaic system either causes damage to and/or produces adverse effects affecting other distribution systems' consumers or Discom's assets, eligible consumer will have to disconnect photovoltaic system immediately from the distribution system upon direction from the Discom and correct the problem at his own expense prior to a reconnection.

## **8. Clearances and Approvals**

8.1. -----

8.2 All the approvals/clearances required to avail the metering facility shall be disposed by the respective Discom within 14 days from the date of application

8.3 The eligible consumer agrees to attain all the necessary approvals and clearances before connecting the photovoltaic system to the distribution system.

8.4 Approvals shall be given only to those Eligible developer with maximum allowable capacity under single-phase service is 3 kWp and maximum allowable SPV plant capacity under LT category is 56 kWp. For HT Service, consumer shall be responsible to match the SPV plant capacity with the DTR Capacity.

8.5 The SRP capacity should be up to 1000 KWp at a single location.

## **9. Injection of Solar Power**

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

## **10. Liabilities**

10.1 Eligible consumer and Discom will indemnify each other for damages or adverse effects from either party's negligence or intentional misconduct in the connection and operation of photovoltaic system or Discom's distribution system.

10.2 Discom and eligible consumer will not be liable to each other for any loss of profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for indirect, consequential, incidental or special damages, including, but not limited to, punitive or exemplary damages, whether any of the said liability, loss or damages arise in contract, or otherwise.

10.3 Discom shall not be liable for delivery or realization by eligible consumer for any fiscal or other incentive provided by the central /State government.

## **11. Commercial Settlement**

11.1 All the commercial settlement under this agreement shall be made according to Solar rooftop guidelines and regulations of Electricity Regulatory Commission.

## **12. Connection Costs**

12.1 The eligible consumer shall bare all costs related to setting up of photovoltaic system including metering and interconnection costs.

12.2 Cost for interconnection equipment including the isolators, meters etc. are also to be borne by the eligible consumer.

## **13. Date of enforceability of the Agreement**

This agreement will be in a force for a period of 25 years or up to the tenure of the project whichever is earlier from the date of commencement of this agreement, until the Eligible consumer meet all the requirements, rules and conditions of this Agreement and the system and its operation is in accordance with the Andhra Pradesh Solar Power Policy – 2015, and its future amendments, if any.

## **14. Dispute Resolution**

If at any time the Discom reasonably determines that either the Eligible consumer may endanger the Discom's personnel or other persons or property, or the continued operation of the consumer's generator may endanger the integrity or safety of the Discom's electric system, or the Consumer 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 complain manner.

Any other disputes 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.

## **15. Termination**

15.1 The SRP shall be installed within three (3) months from the date of Agreement. In case of any delay beyond three months, one time extension of 15 days shall be provided after which the agreement shall be deemed terminated without any reason.

15.2 The eligible consumer can terminate agreement at any time by providing Discom with 90 days prior notice.

15.3 Discom has the right to terminate Agreement on 30 days prior written notice, if eligible consumer breaches a term of this Agreement and does not remedy the breach within 30 days of receiving written notice from Discom of the breach.

15.4 Eligible consumer agrees that upon termination of this Agreement, he must disconnect the photovoltaic system from Discom's distribution system in a timely manner and to Discom's satisfaction.

## **16. Re-Sale of Electric Power**

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

## **17. Obligation of Consumer to pay all charges levied by DISCOM**

The Eligible Consumer shall abide by the rules and shall pay the Maximum Demand Charges, energy charges, surcharges 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.

## **18. Theft of electricity or unauthorized use of electricity**

The Eligible consumer, found indulging in theft of electricity or unauthorized 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.

In the witness, where of Mr. \_\_\_\_\_ for an on behalf of \_\_\_\_\_ (Eligible consumer) and Mr. \_\_\_\_\_ for and on behalf of \_\_\_\_\_ (Discom) agree to this agreement.

Signature of the Eligible Developer/ Consumer

Signature of the Discom  
Representative

Date:

Date:

Witness 1:

Witness 1:

Signature:

Signature:

Name & Address:

Name & Address:

Date:

Date:

## **Annexure-E**

This check is for ensuring that the SPV system is not misused. This energy limit may be computed by using 20% CUF/PLF of the installed SPV capacity

Case-1: Consumer installs a 1000 Wp SPV system and opts for Gross / Net Metering. The SPV system generates 144 units per month. Any surplus injection above 144 units shall be treated as inadvertent and no payment shall be made for it.

Case-2: Consumer installs a 5 kWp SPV system and opts for Gross / Net Metering. The SPV system generates 720 units per month. Any surplus injection above 720 units shall be treated as inadvertent and no payment shall be made for it.

## Annexure C 2 (Societies/Group of Consumers)

### Solar Rooftop Net/Gross Metering Connection Agreement

(On Non-Judicial stamp paper worth Rs. 10/-)

This Agreement is made and entered into at (location) \_\_\_\_\_ on this (date) \_\_\_\_ day of \_\_\_\_\_(month) \_\_\_\_ (Year) between The Group of persons/society (herein after called as Eligible Developer/Consumer), Represented by Sri/Smt \_\_\_\_\_ S/o, \_\_\_\_\_ residing at \_\_\_\_\_(address)\_\_\_\_\_ as first party AND Southern Power Distribution Company of Andhra Pradesh Ltd. (herein after called as **Discom**) and having its registered office at \_\_\_\_\_(address)\_\_\_\_\_ as 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 party here in after called the "DISCOM".

Whereas, the eligible consumer has taken the responsibility to set up or facilitate the requisite Solar Photovoltaic system and injection of Power into the Discom's grid

And whereas, the Discom agrees to benefit the eligible consumer for the electricity generated and as per conditions of this agreement and Solar rooftop guidelines.

Both the party hereby agrees to as follows:

## 1. Eligibility

1.1 Eligible consumer is required to be aware, in advance, of the standards and conditions his system has to meet for being integrated into grid/distribution system.

1.2 Eligible consumer agrees that connection of Photovoltaic system to Discom's distribution system shall be bound by requirements of state Distribution Code and/or Discom's conditions of service. The grid shall continue to perform with specified reliability, security and quality as per the Central Electricity Authority (Grid Standard) Regulations 2010 as amended from time to time.

1.3 All registered companies, Government entities, partnership companies/ firms, individuals and all consumers of APDiscom(s) will be eligible for setting up of Solar Power Projects within the State for sale of electricity/captive use, in accordance with the Electricity Act, 2003 and Andhra Pradesh Solar Power Policy, as amended from time to time.

1.4 Group of persons/societies will also be eligible for setting up Solar Rooftop Projects (SRP) for sale of electricity to Discom/captive use or for self-consumption.

## 2. Capacity of the SPV Plant and Maximum Contracted Load of the premises

2.1 The Group of persons/society is proposing to install rooftop solar power plant of \_\_\_\_ kWp capacity under Solar \_\_\_\_\_ (Net/ Gross) metering facility at D.No. \_\_\_\_, Street \_\_\_\_, \_\_ V, \_\_\_\_ (M) \_\_\_\_ (Dist) against \_\_\_\_\_ Common \_\_\_\_\_ Service \_\_\_\_\_ Connection No \_\_\_\_\_, Category \_\_\_\_\_, Distribution \_\_\_\_\_ and having individual electrical service connections details furnished in the table below for a total contracted load of \_\_\_\_ kW/HP/KVA and individual installed capacity share. The Eligible Developer has 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 for the whole tenure of the project or 25 years whichever is earlier.

2.2 The installed capacity share of members of the Group of persons/societies are as follows:

Sl.No.	Consumer Name	Installed Capacity share	Consumer Service number

## 3. Governing Provisions

The Eligible developer hereby undertake to comply with all the requirements of the Electricity Act, 2003, the Rules and Regulations framed under, provisions of the tariffs, applicable Charges and 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. Technical and Interconnection Requirements**

4.1 Eligible consumer agrees that he will install, prior to connection of Photovoltaic system to Discom's distribution system, an isolation device and agrees for the Discom to have access to and operation of this, if required, for repair and maintenance of the distribution system.

4.2 Eligible consumer agrees that in case of a power outage on Discom's system, photovoltaic system will shut down, unless special transfer and isolating capabilities have been installed on photovoltaic system. The Discom shall not be obligated to accept and may require the Eligible Developer to interrupt or reduce deliveries when necessary with a reasonable notice to the Eligible Developer.

4.3 The Eligible Developer shall strictly adhere to the standards specified by CEA/MNRE and installations of electrical equipment must comply with Indian Electricity rules, 1956.

4.4 The Eligible Developer can install SPV on building walls also.

4.5 Prior approval of Chief Electrical Inspectorate General (CEIG) is required in case of an SRP connected at LT level of distribution network with more than 10 kWp capacity.

4.6 Eligible consumer agrees that Discom will specify the interface/inter-connection point and metering point.

4.7 Eligible consumer agrees to adhere to following power quality measures as per International or Indian standards and/or other such measures provided by Commission/Discom.

a. Harmonic current: Harmonic current injections from a generating station shall not exceed the limits specified in IEEE 519.

b. Synchronization: Photovoltaic system must be equipped with a grid frequency synchronization device.

c. Voltage: The voltage-operating window should minimise nuisance tripping and should be under operating range of 80% to 110% of the nominal connected voltage. Beyond a clearing time of 2 seconds, the Photovoltaic system must isolate itself from the grid.

d. Flicker: Operation of Photovoltaic system shouldn't cause voltage flicker in excess of the limits stated in the relevant sections of IEC standards or other equivalent Indian standards, if any.

e. Frequency: When the Distribution system frequency deviates outside the specified conditions (50.5 Hz on upper side and 47.5 Hz on lower side), the Photovoltaic system shouldn't energize the grid and should shift to island mode.

f. DC Injection: Photovoltaic system should not inject DC power more than 0.5% of full rated output at the interconnection point or 1% of rated inverter output current into distribution system under any operating conditions.

g. Power Factor: While the output of the inverter is greater than 50%, a lagging power factor of greater than 0.9 should operate.

h. Islanding and Disconnection: The Photovoltaic system in the event of voltage or frequency variations must island/disconnect itself within IEC standard on stipulated period.

i. Overload and Overheat: The inverter should have the facility to automatically switch off in case of overload or overheating and should restart when normal conditions are restored.

j. Paralleling device: Paralleling device of Photovoltaic system shall be capable of withstanding 220% of the nominal voltage at the interconnection point

k. The maximum penetration limits at the LT level of distribution network are as specified in the table below:

Year	<b>Maximum Penetration Limit</b> - <i>Ratio of aggregate installed SRP capacity under the DTR to the DTR capacity</i>
FY 2015-16	50%
FY 2016-17	60%

4.8 Eligible consumer agrees to furnish all the data such as voltage, frequency, and breaker, isolator position in his system, as and when required by the Discom.

4.9 Grid Connectivity and Evacuation facility:

The power generated from a Solar Power Project shall be injected at an appropriate voltage at the sub-station and/or interconnection point of the APTransco / Discom(s). The Eligible Developer shall bear the entire cost of construction of power evacuation facilities from the project up to the interconnection point and/or up to APTransco / Discom(s) substation.

The Eligible Developer shall abide by the orders, rules, regulations and terms and conditions as approved by the Commission from time to time for operation of Solar Power Projects, power evacuation, transmission and wheeling of energy. Solar Power Projects will be exempted from paying the Supervision charges to APTransco/Discom(s) towards the internal evacuation infrastructure within the project site and up to interconnection point. Any upstream system-strengthening requirement shall be borne by APTransco/ Discom(s) on a priority basis.

4.10 It is imperative to seek the technical details of the installation infrastructure from the supplier at the time of system installation and retain with the Eligible developer/ consumer.

## **5. Implementation Process:**

Implementation of solar rooftop net/ gross metering facility will be as per the following guidelines:

- I) Under Net metering, Power is first sent to the appliances and lights in the house, and *if* excess remains, it is exported to the outside electricity network and its quantum recorded.
- i) Under Gross Metering, *all* solar electricity generated is considered as Export of Energy into Electricity Network.
- ii) Eligible Developers are allowed to avail the relevant subsidies and incentives from MNRE and from other Departments.
- iii) The eligible subsidy may be processed through NREDCAP (Nodal agency) or Channel Partners of MNRE, GOI. The sanction and release of the subsidy will be as per the guidelines issued by MNRE from time to time.
- iv) Incentives/ Other Charges/Administrative Fee - No Distribution losses and charges will be collected from the Eligible Developers /Group /Society /Individuals by the DISCOMs. All other charges shall be applicable as per the Tariff Order amended from time to time. The registration and facilitation fees shall be paid by Eligible Developer to Nodal agency as specified in the Policy.

### **5.1 Request for Connectivity**

The Eligible Consumer 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 the Eligible Consumer from back-feeding a de-energized line, the Eligible Consumer 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 Eligible Consumer 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 Eligible Consumer 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.

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All meters must be Smart Meters as per the standards specified by the CEA regulations as amended from time to time. Eligible Developers shall be free to procure Meters, Current Transformers (CT), and Potential Transformer (PT) either from open market or DISCOM. If the metering equipment is purchased by the Developer, the same is to be tested at standard laboratory.

Meter reading shall be done as per the prevailing Discom procedure. The applicable customer charges shall be payable to Discom.

Billing process shall start within one month of synchronizing the SRP.

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Energy settlement shall be done on a monthly basis. Group of persons/societies setting up SRP's will be treated as collective generation for supply of power to the households of each society /group member. In case of Apartments/Group Houses, common meter may be used for net metering

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- In case of excess generation (after energy adjustment) in any month, payment shall be made by the Discom for the net energy computed at the **Average Cost to Serve (ACS)** as determined by APERC every year.
- In case of excess consumption in any month, payment shall be made by the Eligible Developer /Group /Society for the net energy at the applicable tariff as determined by APERC every year.

**Gross Metering:** The payment for energy generated from SRP will be computed at the **Average Cost to Serve (ACS)** of the Discom as determined by APERC every year. This shall be adjusted against the total billing demand for consumption of energy for the Eligible Developer/

consumer from the DISCOM every month. The balance amount after adjustment for the month shall be made by the Discom.

A limit shall be defined for all Eligible Developers in terms of energy, beyond which no payment shall be made by APDISCOM. Please refer example in **Annexure-E**.

## **6. Access and Inspection:**

- a) The DISCOM's personal may enter the Eligible consumer's premises to inspect the Eligible consumer's protective devices and read or test the meter.
- b) DISCOM personnel reserve the right to inspect the SRP routinely at any time during the term of the Agreement. As part of the inspection, DISCOM officials have to ensure that check the following aspects
  - All protective equipment of the SPV system are functioning as per specifications.
  - The SPV system including the panels, inverters, etc continue to meet the requirements of Indian & IEC standards post installation till contract completion.
- c) An Eligible Developer, found indulging in theft of electricity or unauthorized use of electricity, shall pay the additional charges as may be levied by the DISCOM as per provisions of Electricity Act 2003. DISCOM may levy additional charge besides disconnection of electricity supply.

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7.3 Due to Discom's obligation to maintain a safe and reliable distribution system, eligible consumer agrees that if it is determined by Discom that eligible consumer's photovoltaic system either causes damage to and/or produces adverse effects affecting other distribution systems' consumers or Discom's assets, eligible consumer will have to disconnect photovoltaic system immediately from the distribution system upon direction from the Discom and correct the problem at his own expense prior to a reconnection.

## **8. Clearances and Approvals**

8.1 . \_\_\_\_\_

8.2 All the approvals/clearances required to avail the metering facility shall be disposed by the respective Discom within 14 days from the date of application

8.3 The eligible consumer agrees to attain all the necessary approvals and clearances before connecting the photovoltaic system to the distribution system.

8.4 Approvals shall be given only to those Eligible developer with maximum allowable capacity under single-phase service is 3 kWp and maximum allowable SPV plant capacity under LT category is 56 kWp. For HT Service, consumer shall be responsible to match the SPV plant capacity with the DTR Capacity.

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### **9. Injection of Solar Power**

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

### **10. Liabilities**

10.1 Eligible consumer and Discom will indemnify each other for damages or adverse effects from either party's negligence or intentional misconduct in the connection and operation of photovoltaic system or Discom's distribution system.

10.2 Discom and eligible consumer will not be liable to each other for any loss of profits or revenues, business interruption losses, loss of contract or loss of goodwill, or for indirect, consequential, incidental or special damages, including, but not limited to, punitive or exemplary damages, whether any of the said liability, loss or damages arise in contract, or otherwise.

10.3 Discom shall not be liable for delivery or realization by eligible consumer for any fiscal or other incentive provided by the central/State government.

### **11. Commercial Settlement**

11.1 All the commercial settlement under this agreement shall be made according to Solar rooftop guidelines and regulations of Electricity Regulatory Commission.

### **12. Connection Costs**

12.1 The eligible consumer shall bare all costs related to setting up of photovoltaic system including metering and interconnection costs.

12.2 Cost for interconnection equipment including the isolators, meters etc. are also to be borne by the eligible consumer.

### **13. Date of enforceability of the Agreement**

This agreement will be in a force for a period of 25 years or up to the tenure of the project whichever is earlier from the date of commencement of this agreement, until the Eligible consumer meet all the requirements, rules and conditions of this Agreement and the system and its operation is in accordance with the Andhra Pradesh Solar Power Policy – 2015 and its future amendments, if any.

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Any other disputes 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.

### **15. Termination**

15.1 The SRP shall be installed within three (3) months from the date of Agreement. In case of any delay beyond three months, one time extension of 15 days shall be provided after which the agreement shall be deemed terminated without any reason.

15.2 The eligible consumer can terminate agreement at any time by providing Discom with 90 days prior notice.

15.3 Discom has the right to terminate Agreement on 30 days prior written notice, if eligible consumer breaches a term of this Agreement and does not remedy the breach within 30 days of receiving written notice from Discom of the breach.

15.4 Eligible consumer agrees that upon termination of this Agreement, he must disconnect the photovoltaic system from Discom's distribution system in a timely manner and to Discom's satisfaction.

### **16. Re-Sale of Electric Power**

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

**17. Obligation of Consumer to pay all charges levied by DISCOM**

The Eligible Consumer shall abide by the rules and shall pay the Maximum Demand Charges, energy charges, surcharges 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.

**18. Theft of electricity or unauthorized use of electricity**

The Eligible consumer, found indulging in theft of electricity or unauthorized 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.

In the witness, where of Mr. \_\_\_\_\_ for an on behalf of \_\_\_\_\_ (Eligible consumer) and Mr. \_\_\_\_\_ for and on behalf of \_\_\_\_\_ (Discom) agree to this agreement.

Signature of the Office-bearer of Group/  
Society

Signature of the Representative of  
DISCOM

Date:

Date:

Witness 1:

Witness 1:

Signature:

Signature:

Name & Address:

Name & Address:

Date:

Date:

## **Annexure-E**

This check is for ensuring that the SPV system is not misused. This energy limit may be computed by using 20% CUF/PLF of the installed SPV capacity

Case-1: Consumer installs a 1000 Wp SPV system and opts for Gross / Net Metering. The SPV system 144 units per month. Any surplus injection above 144 units shall be treated as inadvertent and no payment shall be made for it.

Case-2: Consumer installs a 5 kWp SPV system and opts for Gross / Net Metering. The SPV system generates 720 units per month. Any surplus injection above 720 units shall be treated as inadvertent and no payment shall be made for it.