

#### 4.7. Mandates for installation of solar plants

- 4.7.1. **Existing government buildings:** Deployment of solar plants on all existing State Government properties with rooftop area of 500 sq.m. or above is mandatory. It shall be carried out at a steady pace and in a phased manner, and shall be completed within the Operative Period of this Policy.
- 4.7.2. **New buildings:** As per the amendment to the Unified Building Bye Laws (UBBL) for Delhi, 2016, dated 8<sup>th</sup> March 2019, all new residential, institutional, government, commercial, group housing and industrial buildings are mandated to install RTS systems subject to the minimum area requirement, as mentioned in Appendix III. GNCTD shall work with local bodies to ensure stringent enforcement of this mandate.
- 4.8. **Agricultural land:** The Policy encourages deployment of solar on agricultural land via different models including, but not limited to, group net metering and community solar.
- 4.9. **Encouraging Energy Storage:** Energy storage will play an important role in grid balancing with growing penetration of solar generation on the distribution grid. This policy aims to develop suitable targets for energy storage in Delhi. GNCTD will work with the concerned stake holders to utilise the Power Sector Development fund (PSDF) for deploying energy storage projects.
- 4.10. **Finance vehicle for RESCO entities:** GNCTD will setup a solar rooftop finance vehicle for RESCO developers through IPGCL or any agency that may be appointed through the Power department. The proposed vehicle shall provide low-cost financing to eligible RESCOs operating in Delhi.
- 4.11. **Exemption from taxes and duties:** GNCTD shall ensure that taxes and duties are not levied on generation from RTS, whether for self-consumption or supplied to the grid.
- 4.12. **Operational Guidelines:** Detailed operational guidelines for delivery of incentives and implementation of mandates under this Policy shall be issued from time to time by the Power Department, GNCTD with the approval of Hon'ble Minister (Power).
- 4.13. **Technical standards for solar developers:** GNCTD shall create a clear set of technical standards for developers and equipment to adhere to. This will also include specific provisions, including but not limited to, bank guarantees, and minimum performance guarantees expected from solar developers.
- 4.14. **Employment Generation:** The gradual uptake of solar PV systems in the state presents an opportunity for green job creation, e.g., in rooftop assessment, installation, servicing, repair and other maintenance of the system. GNCTD shall endeavour to promote training and skills development in partnership with solar developers and the Delhi Skills and Entrepreneurship University.

4.15. **Encouragement for reusing and recycling of solar components:** Given the volatility in module prices of solar PV, challenges with payment security and after sales operations and maintenance for developers and customers respectively, the Policy shall encourage the creation of a secondary market for components of rooftop solar PV system to benefit the solar ecosystem in Delhi. The Policy shall also endeavour to create an ecosystem for recycling components of solar PV system at the end of their useful life to prevent negative environmental externalities.

#### 4.16. **Out of state solar procurement**

- i. **Pure Solar purchase:** GNCTD shall work with DISCOMS and other stakeholders such as SECI to ensure timely planning and execution of utility scale solar generation projects outside the NCT of Delhi so as to meet the increasing energy needs of Delhi through solar energy instead of long-term PPAs based on conventional fossil fuel energy. IPGCL shall explore to take up implementation of large-capacity solar plants outside Delhi under the CPSU scheme Ph-II of the Ministry of New and Renewable Energy (MNRE) to avail the benefit of Central Financial Assistance (CFA).
- ii. **Solar RE-RTC purchase:** DISCOMs shall be encouraged to increase the share of solar energy procured from outside the NCT of Delhi through innovative models such as RE-RTC (Renewable Energy – Round the Clock) which combines a host of renewable energy sources (solar, wind etc.) alone with appropriately sized battery storage to provide round-the-clock power as per the demand curve of Delhi. This can play a big role in reducing the reliance of Delhi on conventional fossil fuels without compromising on Delhi's energy needs while at the same time reducing average electricity prices, reducing air pollution and carbon emissions.

## 5. INSTITUTIONAL FRAMEWORK AND ROLES OF STAKEHOLDERS

### 5.1. **Apex Committee**

An Apex Committee will be constituted under the leadership of the Hon'ble Minister of Power, GNCTD which shall monitor the progress on policy implementation on a quarterly basis or as often as necessary. The Committee shall be entitled to issue clarification in response to any matter that may arise concerning the Policy, its interpretation, and its implementation, in consultation with concerned state government departments. The body shall be constituted of the following members:

- i) Vice Chairperson, Dialogue and Development Commission of Delhi, GNCTD – Member
- ii) Addl Chief Secretary/Secretary (Power), GNCTD – Member
- iii) Principal Secretary (Finance), GNCTD – Member
- iv) CEOs of State DISCOMs – Members

- v) Up to four industry experts to be nominated by Hon'ble Minister (Power) – Members
- vi) Spl Secretary (Power), GNCTD – Member Secretary

## 5.2. Delhi Solar Cell

The Energy Efficiency and Renewable Energy Management (EE&REM) Centre, Department of Power, GNCTD, shall continue to be the State Nodal Agency for implementation of Delhi Solar Policy, 2022. A dedicated 'Delhi Solar Cell' will be established within the EE&REM that will support the apex committee in monitoring policy implementation. The key responsibility of the solar cell will be to facilitate, coordinate, and monitor day to day implementation of the solar energy policy in Delhi. It will comprise of staff with relevant technical expertise to exclusively deal with all matters related to solar deployment in the NCT of Delhi.

- i. **Announce solar policy, amendments and related schemes:** The Delhi Solar Cell shall take the lead in launching this Solar Energy Policy to the public through the use of media, PR, billboards, advertisements, and more. It will also communicate amendments to the Policy to major stakeholders via its website and/or other means.
- ii. **Allot solar power capacities:** The Delhi Solar Cell shall, from time to time, undertake the process for allotment of solar power capacities under various schemes of State and Central Government and its identified agencies in a transparent manner to the DISCOMs and other project developers.
- iii. **Facilitate development of solar projects:** The Delhi Solar Cell shall assist solar project developers in obtaining all necessary clearances and approvals from different Government Departments.
- iv. **Support in establishing protocols and procedures for easy adoption of solar power:** The Delhi Solar Cell shall also support the DISCOMs in developing the protocols and procedures for easy adoption of solar plants by consumers. The DISCOMs shall be responsible for managing all transactions and accounting processes relating to net metering, group net metering and virtual net metering.
- v. **Maintain a portal for consumers interested in rooftop solar:** The Delhi Solar Cell shall develop and maintain a portal that will act as a platform for providing information including, but not limited to, educational material, savings calculator and other important resources for potential consumers in Delhi.
- vi. **Monitor and evaluate policy progress:** The Delhi Solar Cell is expected to monitor progress and oversee DISCOMs' implementation of the Solar energy policy.
- vii. **Identification and Aggregation of Sites for Deployment of Rooftop Solar Power Plants:** The Delhi Solar Cell shall work with DISCOMs and other relevant stakeholders in running solar demand aggregation campaigns to identify

consumers interested in adopting solar. The Delhi Solar Cell may also appoint an external commercial party to fulfil the role of the aggregator.

- viii. **Accelerate adoption in government buildings through operational guidelines:** Delhi Solar Cell will create operational guidelines to implement RTS on government buildings.
- ix. **Explore the possibility of establishing a secondary market for solar PV components:** A secondary market can connect consumers who wish to decommission their solar PV systems with consumers with limited access to capital by lowering the capital investment needed

### 5.3. DISCOMs

- i. The State Electricity Distribution Licensees (DISCOMs) are encouraged to establish annual solar deployment targets including rooftop-solar specific targets among all consumer classes. DISCOMs are also advised to build long-term resource adequacy plans including rooftop solar generation and explore the additional benefits RTS presents beyond lowering the cost of power procurement.
- ii. DISCOMs are further encouraged to facilitate various models of solar deployment including but not limited to GNM and Community Solar across relevant consumer categories.
- iii. The DISCOM will pass on any subsidies available through the Central Government (MNRE) or State Government to consumers, integrators, and other solar developers in the State, as applicable.
- iv. DISCOMs and the Solar Cell will consult each other and streamline the net metering process and establish clear guidelines on documentation and timelines. All DISCOMs in the state of Delhi should follow standardized formats and timelines for net metering applications.
- v. DISCOMs will maintain a database of Net Metering application requests, approval status, installation and commissioning data, which will be reflected on the State portal.
- vi. DISCOM shall, at the request of the Delhi Solar Cell from time to time, provide the load status of distribution transformers on its network. DISCOM should update the status of solar capacity installation with respect to distribution transformers on their website to make the process transparent.
- vii. The DISCOM is expected to coordinate on demand aggregation programs conducted by the Delhi Solar Cell and support the deployment of tenders as needed by the Solar Cell.
- viii. DISCOM should submit data around net metering applications to the Delhi Solar Cell on a monthly basis.
- ix. DISCOM shall undertake strengthening of distribution network for deployment of RTS systems, as and when required on case-to-case basis as per extant regulations, without burdening the solar rooftop net-metering system applicant.

#### 5.4. IPGCL

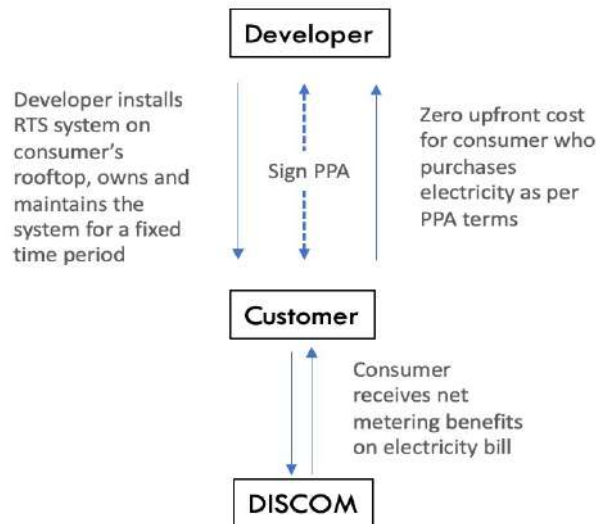
In collaboration with the State Nodal Agency, the Indraprastha Power Generation Co. Ltd (IPGCL) (a Govt. of NCT of Delhi Undertaking) will:

- i. Aggregate capacity on Government building rooftops by inspecting and assessing their solar potential as input for the tender. Implement solar installation in government buildings and sign an agreement with the beneficiaries. Accordingly, bids shall be invited under CAPEX/ RESCO model.
- ii. IPGCL may also explore rooftop solar installation in Government buildings under the Central Public Sector Undertaking (CPSU) scheme Phase-II of MNRE with GNCTD's/other financial support so that advantage of CPSU scheme may be availed.
- iii. Implement solar plants on government buildings within 15 months (6 months for tendering and 9 months for implementation) from the date of notification of this policy
- iv. Train manpower in solar PV system technology and build capacity to maintain solar power plants
- v. GNCTD reserves the right to assign all or some of the above activities to any other agency as deemed fit.

## Appendix I: Models for solar installation

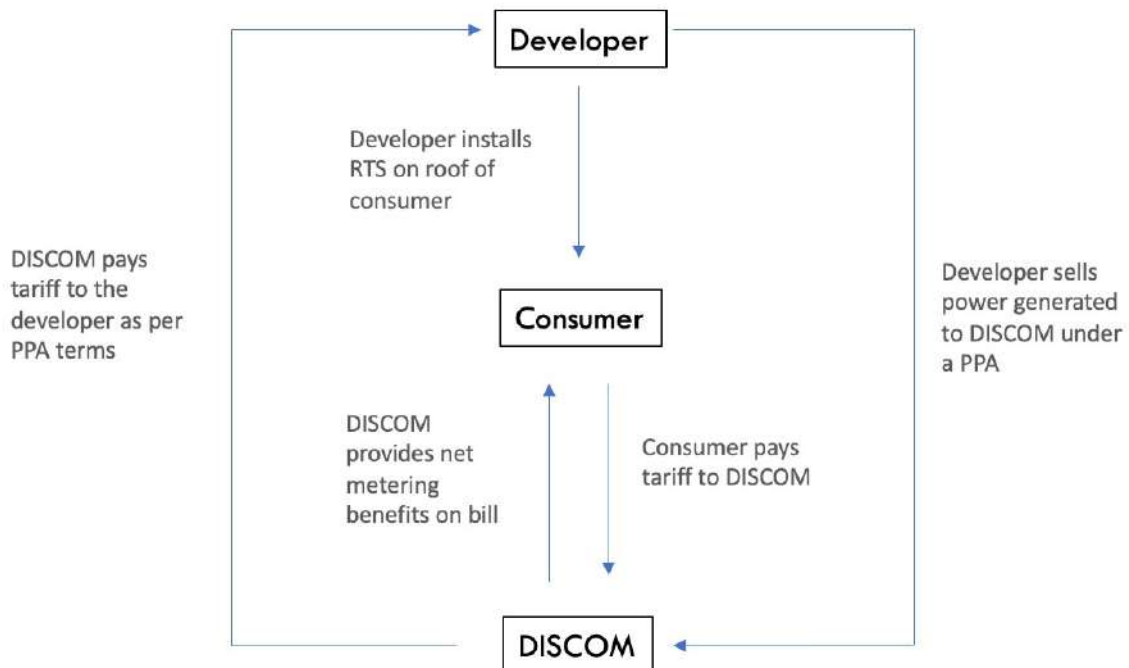
### A. Models for Consumers with Capital Constraints:

#### 1. RESCO Model:



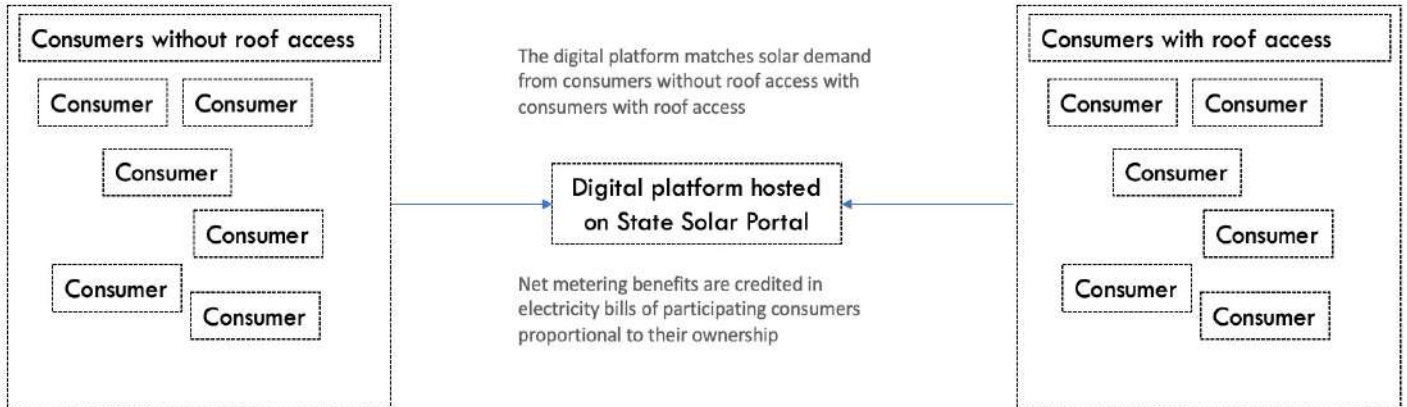
#### 2. Hybrid RESCO Model:

Consumer signs a tripartite agreement with the developer and DISCOM

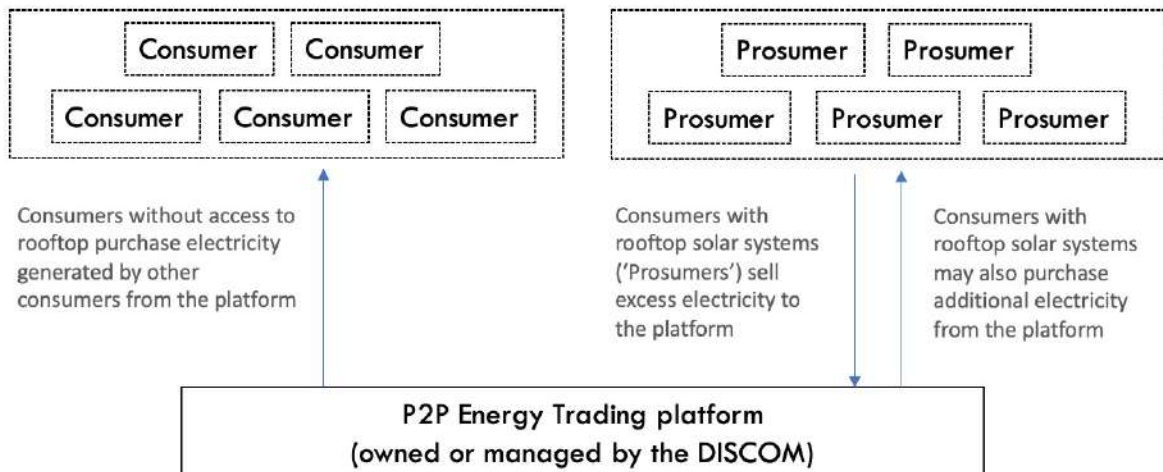


## B. Models for Consumers with Roof Constraints

### 1. Community Solar Model:



### 2. Peer-to-peer trading:



Appendix II: Average Power Procurement Costs of DISCOMs for 2021-22

<b>DISCOMs</b>	<b>APPC (Rs/kWh)</b>
BYPL	5.16
BRPL	5.43
TPDDL	5.55
NDMC	6.26



## Appendix III: Minimum area required for installation of solar PV panel

Table 11: Minimum area required for Installation of Solar Photo Voltaic Panel						
S. No.	Building category	Plot area/ Ground Coverage		Capacity of SPV plant (in kilo watt peak	Area of Terrace required in % & Sqm.	
1.	Residential	105 -250 Sqm.	75%	1 KW p(spV)	20%	15 Sqm.
		250 -500 Sqm.		2 KW p (spV)	20%	30 Sqm.
		500-1000 Sqm.	50%	3 KW p (spV)	20%	45 Sqm.
		1000-3000 Sqm.		5 KW p (spV)	15%	75 Sqm.
		> 3000 Sqm.		10 KW p (spV)	15%	150 Sqm.
2.	Institutional	500-1000 Sqm.	30%	5 KW p (spV)	35%	75 Sqm.
		1000-3000 Sqm.		10 KW p (spV)	35%	150 Sqm.
		>3000 Sqm.		20 KW p (spV)	35%	300 Sqm.
3.	Government Buildings	500-1000 Sqm.	50%	5 KW p (spV)	30%	75 Sqm.
		1000-3000 Sqm.		10 KW p (spV)	15%	150 Sqm.
		>3000 Sqm.		20 KW p (spV)	20%	300 Sqm.
4.	Commercial	500-1000 Sqm.	50%	5 KW p (spV)	40%	150 Sqm
		1000-3000 Sqm.		20 KW p (spV)	30%	300 Sqm
		>3000-5000 Sqm.		30 KW p (spV)	25%	450 Sqm
		> 5000 Sqm.		50 KW p (spV)	30%	750 Sqm.
5.	Group Hosing	2000-5000 Sqm.	33.3 %	10 KW p (spV)	20%	150 Sqm.
		5000-10,000 Sqm.		20 KW p (spV)	15%	300 Sqm.
		10,000-20,000 sqm.		50 KW p (spV)	25%	750 Sqm.
		>20,000 Sqm.		100 KW p (spV)	25%	1500Sqm
6.	Industrial	Up to 400 Sqm.	60%	3 KW p	25%	45 Sqm
		401-2000 Sqm.	50%	5 KW p	30%	75 Sqm
		2000-5000 Sqm		10 KW p	30%	150 Sqm
		>5000 Sqm.		50 KW p +5 KW/1000 Sqm. or part thereof	30%	750 Sqm