

**Sub.: Mukhya Mantri Solar power Yojana for Domestic (Residential) Sector Consumers in NCT of Delhi.**

**Background**

1. Residential Sector has a big role to play in solar power development in Delhi. There is a huge potential, but so far, solar development in this sector is yet to catch up. Delhi Govt is giving a Generation Based Incentive (GBI) of Rs 2.00 per unit on solar generation for a three year period from 2016-17 to 2018-19, as per "Delhi Solar Policy-2016" notified vide No.205 dated 28.09.2015.

Approximately 105 MW of solar power has been installed in Delhi. It has been mostly in Govt buildings like DMRC (20 MW), DJB, Govt buildings; namely Technical Institutions (DTU, NSIT, IP University, IGDTUW, Govt Engineering colleges, Polytechnics, ITIs, Mandoli Jail, Azadpur Mandi, Dwarka Court, Schools, Delhi Haat, bus depots etc).

In domestic sectors, it is around 05 MW. Around 8-10 Group Housing societies and some individual consumers have also installed solar power. The reason for less utilization is due to poor response for solar adoption by Domestic / Residential Sector consumers.

For the concept of solarise Delhi, as envisaged in Delhi Solar Policy 2016, to gain momentum, residential sector needs to be geared up for solar installation.

## 2. The challenges in Solar power development in domestic sector

- (i) Long Term of engagement of roof: Solar installations are for 25 years. Many residents consider this period too long a period.
- (ii) A good part of solar power potential in the Domestic / Residential Sector is on the Rooftops of approximately 1990 nos. of registered Co-operative Group Housing Societies in Delhi. For installation of Solar Plants on the rooftops of these societies, formal letter from the office of Registrar of Societies, Delhi was sent to all societies. Also widespread adoption of Solar, awareness amongst the consumers, advertisement in leading newspapers were published from time to time. BRPL has conducted a workshop for Group Housing Societies at Dwarka.  
But in these societies, the process of decision making is relatively slow.
- (iii) Instrument of GBI was planned to give electricity consumer an incentive to go for solar installation. Although solar power has cost benefit compared to Grid power for bigger consumer, but after DERC announced new tariff in Nov' 2017, the relative advantage of solar power has reduced. A comparison of tariff before and after revision is given as under:

<b>Category</b>	<b>2017-18 (Rs. Per unit)</b>	<b>2018-19 (Rs. Per unit)</b>
1. Residential		
i) 0-200 units	4	3

ii) 201-400 units	5.95	4.5
iii) 401-800 units	7.3	6.5
iv) 800-1200 units	8.1	7
v) >1200 units	8.75	7.75
2. Single point delivery for Group Housing Society	6	4.5

The fall in tariff is in the range of Rs 0.80/ unit to 1.50/ unit. If the surcharges and taxes are loaded, the fall is in the range of Rs 0.94- 1.77 per unit.

- (iv) Group Housing Societies have shown their interest for installation of solar system in RESCO model. RESCO model means where the Solar Power Developer (SPD) intends to setup solar power plant at roof owned by some other entity on mutually agreed term and conditions and enters into Power Purchase Agreement (PPA) for supply of Solar Power. However, due to lack of payment security mechanism, vendors are reluctant to install solar system in societies due to which solar power rates in societies are on higher side as compared to rates in Government buildings. Moreover, large players are not coming forward for solar installation in societies.

### **3. NEW PROJECTS AND DEVELOPMENTS FOR DOMESTIC SECTORS**

- (i) The pace of solar installation in domestic sector is slow but picking up. MNRE, GoI on the request of EE & REM, Department of Power, GNCTD has extended the validity of

previous sanction of 84 MW revised to 20 MW up to 30.09.2018. There will be some progress but well below the target of 84 MW for domestic & social sectors.

- (ii) MNRE, GoI has been requested vide letter no. F11(69)/2014/Power/51 dated 22.05.2018 to sanction 40 MW Grid Connected Rooftop Solar Projects in Domestic/Institutional/Social Sectors for Delhi under MNRE subsidy schemes(Annexure I). MNRE, GoI sanction vide No.318/53/2018-GCRT dated 07.09.2018 has been received. As per the prevailing practice, MNRE allows Award of Work order within six months and project completion time of 15 months from the date of sanction .
- (iii) For mass adoption of Solar in the state, it will be required to firm up our implementation strategy immediately so that tender can be floated and awarded within MNRE timeline. As a preparatory activity, MNRE, GoI has developed a **single window portal** for applying and approval of Roof Top solar PV system in Delhi. Also, EE&REM website with latest information and technology is being updated in association with World Bank.
- (iv) To attract more vendors in RESCO mode and for better financing to developers, there is need for a bankable PPA and guaranteed payment security mechanism for vendors. In tenders for Government buildings, more vendors participation with better financing options lead to cheaper rates. To assess the difficulties being faced by various Solar Power Developers to install Solar Plants in Co-operative Group Housing Societies, a workshop/training programme for Financial Institutions and Solar Power Developers (SPDs) was organized by EE & REM, Department of Power, GNCTD in association with World Bank on 23.07.2018.

- (v) In a good tender, the Levelled rates for 50 kW or more capacity should come down considerably. Considering a 3% annual escalation in solar tariff, with a GBI of Rs 2.00/ unit, it may push effective solar tariff in a range of Rs 1.00-1.50/ unit in initial years (Annexure II). In tenders for Govt buildings, levelled tariff discovered in IPGCL tenders are Rs 3.30-3.64/ unit for solar capacity above 50 KW.

#### **4. WAY FORWARD**

- (i) A new scheme for residential and social sectors with emphasis on residential and with a focus to target Group Housing Societies is proposed.
- (ii) There will be emphasis on RESCO Model of solar installation for larger installations.
- (iii) Since solar is in initial phases in domestic sector, Generation Based Incentive (GBI) is extended for a period of 5 years starting from 2019-20. However, in the extended run, it will cover solar installations in domestic (residential) sector including Group Housing Societies; both for existing solar installation and new installations for which MNRE sanction vide No.318/53/2018-GCRT dated 07.09.2018 has been obtained. Combined with a decrease in solar tariff, this will offset the impact of electricity tariff and will increase adoption to Solar by consumers from Residential / Domestic Sector. For a typical solar power plant, this will amount to GBI payment of Rs 13000/KW in five years. This payment will amount to 22-25% on benchmark solar costs.

- (iv) GBI disbursement will be made on Half Yearly basis so that consumers have feel of Government support inform of GBI in the first year of solar installation without affecting the matter of quality as envisaged in Delhi Solar Policy. The other criterion of 1100 units per KW per annum may accordingly be prorated reduced to 550 units per KW on half yearly basis i.e. April-September Half and October- March Half.
- (v) The instrument of GBI will also be used as Payment Security Mechanism. In case a consumer fails to make payment to the vendor, Generation Based Incentive (GBI) may be passed on to vendor. This sort of payment security guarantee by Delhi Government makes a strong case for better financing to vendors which in turn can benefit consumers. The rates may fall below Average Power Purchase Cost (APPC) and in such cases the customers will be further incentivised to install solar systems beyond the sanctioned load.
- (vi) This payment security mechanism for five years will be applicable to RESCO Model in the proposed new tender.
- (vii) The new GBI will also cover already installed solar plants till new tenders are finalised. They have been beneficiary of existing GBI scheme which is valid till 2018-19. Such installation will be allowed GBI benefits for five years period from the date of installation. However, payment security mechanism as envisaged in the scheme will not be covered in such installations.
- (viii) IPGCL will be the bid co-ordinator on behalf of Power Department.