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**JOINT ELECTRICITY REGULATORY COMMISSION  
FOR THE STATE OF GOA AND UNION TERRITORIES  
GURGAON**

Quorum  
Shri S.K.Chaturvedi, Chairperson  
Smt. Neerja Mathur, Member  
**Petition No. 201/2016**  
**Date of Order: 13.05.2016**

**In the matter of**

1. Filing of Petition for seeking relief from the restriction on Grid Penetration up to 30% of the Distribution Transformer Capacity (DTC) for the Projects commissioned before the Solar Power – Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations, 2015 came to the existence and also to allow the grid penetration up to at least 50% of DTC for further Projects.
2. To allow the net metering of the Solar Power Plants without converting its output on to 11 KV side for the Projects already commissioned before the Solar Power-Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations, 2015 came to the existence and in cases where the captive consumption is more than the 3-4 times of the solar power generation then in such cases connection of Solar Power Plant on 11 KV side may be dispensed with.

**And in the matter of**

The Director, Science & Technology (S&T) and Chief Executive Officer, Chandigarh Renewable Energy Science & Technology Promotion Society (CREST), Department of Science & Technology & CREST Chandigarh Administration, Paryawaran Bhawan, Sector 19B, UT Chandigarh **....Petitioner**

**And in the matter of**

Superintending Engineer, Electricity Department, 'OP Circle', 5<sup>th</sup> Floor, Deluxe Building, Sector – 9, UT Chandigarh **...Respondent**

**Present**

**For Petitioner**

1. Shri Santosh Kumar, Director, Science & Technology (S&T) and Chief Executive Officer, Chandigarh Renewable Energy Science & Technology Promotion Society (CREST), UT Chandigarh
2. Shri Ravinder Singh, Project Director, (CREST), UT Chandigarh

**For Respondent**

Shri M.P. Singh, Superintending Engineer, Electricity Department, UT Chandigarh

## ORDER

The Petitioner through this Petition sought the following:-

1. Exemption from grid penetration restriction of up to the level of 30% of the Distribution Transformer Capacity (DTC) for the Projects commissioned before the Solar Power-Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations, 2015 and Solar Power Tariff came to the existence.
2. Enhance grid penetration at least up to 50% of DTC for Solar Power generation Projects to be established in future.
3. Grant net metering at LT level for the Solar Power generation Projects already commissioned before the Solar Power Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations, 2015 and Solar Tariff came to the existence without converting its output power to 11 KV side.

Shri Santosh Kumar, Director, Science & Technology (S&T) and Chief Executive Officer, Chandigarh Renewable Energy Science & Technology Promotion Society (CREST) submitted that as per JERC's Solar Power-Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations, 2015, Grid Penetration is allowed up to 30% of Distribution Transformer Capacity. However, the CREST has installed three Solar PV Systems of 40 kWp, 50 kWp and 70 kWp respectively on separate roofs wherein the capacity of the Distribution Transformer is 100 KVA, 100 KVA & 200 KVA respectively.

These Plants were commissioned on 26.11.2014, 30.11.2014 and 05.02.2015 respectively before the notification of the Solar Power-Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations, 2015. Since their commissioning these Solar Plants are generating and injecting the power into the grid beyond the maximum penetration level of 30% at DTC.

Shri Kumar further submitted that the existing Plants are in operation and connected to the Grid. However, these Plants are not recognized as Grid Connected Plants under net metering unless approved by the Commission for exemption from restriction on Grid penetration.

Shri Kumar further submitted that Grid Penetration level may be increased to at least 50% of Distribution Transformer Capacity as Solar Plant capacity is defined/ considered generally on DC Side and its output on AC side is not more than 80% of its maximum capacity on DC side. Shri Kumar further submitted that some regulators have adopted the distribution transformer penetration of 30%, whereas some other regulators have decided for higher penetration levels. In Maharashtra, Karnataka and Kerala it has been fixed at 40%, 70% and 80% respectively.

Shri Kumar further submitted that the Ministry of New & Renewable Energy (MNRE), Govt. of India has declared Chandigarh as Model Solar City. The Department of Science & Technology has been designated as Nodal Department for Renewable Energy Projects for Chandigarh and CREST has been designated as Executing Agency for all Renewable Energy Projects including rooftop based solar Power Plants for Chandigarh. The MNRE has mandated Chandigarh to achieve 100 MW from Solar Power Generation Plants by 2022. In order to achieve its target to generate 100 MW power from Solar Plants, the Chandigarh Electricity Department may be directed to enhance capacity of its existing transformers to enable the Solar Power generators to inject its maximum power to the grid.

Shri Kumar further submitted that as per the JERC Regulations, the Solar Power Plants of more than 100 kWp capacity can only be connected to the grid on HT side i.e. 11 KV side.

Shri Kumar requested the Commission to allow the net metering for Solar Power Plants without stepping up its output power to 11 KV side and then again bring it back to LT side through transformer which may lead to loss of energy and will also enhance the cost of Power Plant. It is pertinent to mention here that the total electric load of equipments installed in CCET building is 865 kW. Whereas output of these Solar Plant is not more than 190 kWp. The chances of Solar Power getting exported to the grid is minimal.

Shri Kumar further submitted that generally where self consumption is more than 3-4 times of total generation of Solar Power then connection of Solar Power Plant on 11 kV side may be dispensed with to avoid loss of energy due to conversion.

The Chandigarh Electricity Department (CED) submitted that as a Grid Operator they have to maintain stable and reliable grids therefore the level of penetration of Renewable Energy sources in general and Solar Energy in particular is a matter of concern. Solar Power Generation connected to the Grid need to comply with the Solar Power Ground Mounted and Solar Rooftop and Metering Regulations, 2015. The cumulative total of all Solar PV capacity in a distribution area may increase the voltage to the level when grid may be in danger or may get damaged.

The Commission examined the relevant provisions of Electricity Act, 2003, Rules & Regulations made there under pertaining to renewable energy and the entire record placed before it. The Commission also considered the arguments made on behalf of the Petitioner and Respondent. The Commission feels that in order to encourage the generation of electricity from renewable sources of energy, particularly Solar energy in Chandigarh, exemption from grid penetration restriction up to the level of 30% of the distribution transformer capacity for the project commissioned before the Solar Power Ground Mounted and Solar Rooftop and Metering Regulations, 2015 may be granted and allow up to 50% of the distribution transformer capacity.

The Commission is also convinced that restriction up to the level of 30% of DTC may be increased at least up to 50% of DTC for Solar Projects in future.

The Commission has considered the submissions made by the Petitioner for exemption for net metering of Solar Power Plants without converting into 11 KV side for the Projects already commissioned before the Solar Power Grid Connected Ground Mounted and Solar Rooftop and Metering Regulations, 2015 and is of the view that in case of HT Consumers opting for net metering, the connectivity point with the grid for this consumer is at HT level. Hence, there is no need for asking the HT Consumer to provide separate connectivity of solar plants at HT level, the Solar Plants connected with the internal LT panels of such HT consumers qualifies for net metering under the JERC Regulations. In view of this clarification, there is no need for granting any relaxation and the Distribution Licensee is directed that the HT Consumers opting for Net Metering shall not be asked to provide separate connectivity of solar plants at HT Voltage level.

In view of the above, the Commission has granted one time exemption from grid penetration restriction up to the level of 30% of the distribution transformer capacity and make it up to the level of 50% of distribution transformer capacity for the projects commissioned before the Solar Power Ground Mounted and Solar Rooftop and Metering Regulation, 2015 came into existence. The Commission has also enhanced Grid Penetration at least up to 50% of DTC from 30% for Solar Power Generation Projects to be established in future.

The Commission has also clarified that net metering of Solar Power Plants to be allowed without stepping up its output power to 11 KV side separately for the Projects installed by the HT Consumers.

The Commission further directs the CED to study the implications of the higher grid penetration including the days where in house consumption is less than Solar Power Generated. The CED must ensure the safety of the personnel and the electrical equipments / system for grid penetration up to the 50% and come back to the Commission in case of any problem, before Commission considers for enhancing the grid penetration further.

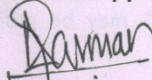
The Petition is disposed off with the above directions.

Ordered accordingly.

Sd/-  
(NEERJA MATHUR)  
MEMBER

Sd/-  
(S.K.CHATURVEDI)  
CHAIRPERSON

Certified Copy

  
Secretary