Before

UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

Petition No. 04 of 2018

In the matter of:

Petition seeking clarification with regard to the UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2013 or, in the alternative, a specific order of relaxation or permission for establishment of a grid interactive roof-top solar plant with installed solar capacity of 3600 KW on captive consumption basis by M/s Amplus Solar Power Pvt. Ltd. and M/s Asahi India Glass Ltd.

In the matter of:

M/s Amplus Solar Power Pvt. Ltd.

M/s Asahi India Glass Ltd. … Petitioners

AND

In the matter of:

Uttarakhand Power Corporation Ltd.

Uttarakhand Renewable Energy Development Agency (UREDA) … Respondents

CORAM

Shri Subhash Kumar Chairman

Date of Hearing: January 23, 2018

Date of Order: June 20, 2018

This Order relates to the Petition filed by M/s Amplus Solar Power Pvt. Ltd. (Petitioner) & M/s Asahi India Glass Ltd. under Regulations 49 and Regulation 50 of the UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2013 (hereinafter referred to as "RE Regulations, 2013") seeking clarification with regard to the non-applicability of Regulation 35, i.e. Grid interactive roof top and small solar PV plants, of RE Regulations, 2013 for captive consumption or, in alternative, seeking a specific order of relaxation or permission for

establishment of a grid interactive roof-top solar plant with installed solar capacity of 3600 kW.

1. Background & Petitioner's submissions

1.1. The Petitioner submitted that National Electricity Policy dated January 2012 was issued with a special focus on creating an enabling environment for solar power generation. The Jawaharlal Nehru National Solar Mission was launched in 2010 with the target of deploying 20,000 MW of grid connected solar power by 2022. The National Electricity Policy and Jawaharlal Nehru National Solar Mission both lay down the overarching policy objective and goal of enhancing solar power generation in the country. The Petitioner also submitted that in line with the objective of promoting electricity generation through solar power the State of Uttarakhand has issued the Solar Energy Policy for Uttarakhand, 2013.

1.2. The Petitioner submitted that the Commission had issued RE Regulations, 2013 without capping on the size of the grid interactive rooftop & small solar PV plants. Subsequently, the Commission, based on the MNRE guideline dated 26.06.2014, had put a ceiling of 500 kW on the capacity of grid interactive solar rooftop & small solar PV plants vide third amendment to the Principal Regulations, 2013.

1.3. The Petitioner submitted the Commission has introduced the cap of 500 kW only in respect of grid interactive rooftop solar power plants established on the basis of net metering. There is no provision for the limit on the installed solar capacity of a grid interactive rooftop solar power plant established for the purpose of captive consumption.

1.4. The Petitioner submitted that there are two broad ways of establishing roof-top solar plants as mentioned below:

(a) Grid connected rooftop solar plants;

(b) Grid interactive rooftop solar plants;

Grid connected rooftop solar plants are directly connected to the grid for injecting solar energy into the grid, whereas grid interactive roof-top solar plants are synchronized with the grid on the basis of various arrangements whereby solar energy is injected into the grid and sometimes there is no injection of any energy into the grid at

all. The various arrangements under which the grid interactive roof-top solar plants are established are explained as follows:

(a) Gross Metering - In this arrangement, the total energy generated by the solar rooftop plant is to be injected into the grid without allowing the generated solar energy to be consumed directly by the consumer.

(b) Net Metering – In this arrangement, the energy generated by the solar rooftop plant is first allowed for self-consumption and the excess energy is injected to the grid.

(c) Captive Consumption – In this arrangement, the rooftop solar plant is synchronized with the grid but at no time of operation of the plant will there be any injection of solar energy into the grid. The non-flow of any energy into the grid will be ensured by the installation of a reverse power relay which would obstruct the flow of any energy into the grid. Thus, at all times of the operation of the plant, the solar energy generated would be consumed within the plant premises. There will be no generation of any excess solar energy and therefore, the question of injection of excess energy into the grid becomes redundant.

1.5. The Petitioner submitted that on 15.05.2017 a Power purchase agreement was executed with M/s Asahi India Glass Ltd. for supply of power from grid connected solar rooftop plant to be installed at the rooftop of M/s Asahi India Glass Ltd. The Petitioner also submitted that M/s Asahi India Glass Ltd. requested officials of UPCL for grid connectivity and also requested Chief Electrical Inspector of Uttarakhand Government regarding issuance of approval for establishment of solar power plant of capacity 3600 KW. However, UPCL did not grant the permission for establishment of the plant on account of the size-limit under the proviso to Regulation 35(2).

1.6. The Petitioner submitted that Regulation 35(2) of RE Regulations, 2013 provides for the installation of rooftop solar PV plants for injecting into the distribution system of a licensee by any eligible consumer. Therefore, the size limit under the said proviso would be applicable to rooftop solar PV plants injecting electricity into the distribution system of the licensee. Accordingly, the Petitioner requested the Commission to clarify that the limit of 500 kW under Regulation 35(2) of RE Regulations, 2013 does not apply to grid interactive rooftop solar power plants established on the basis of captive consumption or

alternatively, pass a specific order of relaxation under Regulation 50 of RE Regulations, 2013 permitting the Petitioner and M/s Asahi India Glass Ltd. to establish and operate a solar power plant of 3600 kW and also direct UREDA/UPCL to issue NOC to M/s Asahi India Glass Ltd. permitting them to establish a grid interactive rooftop solar power plants of 3600 kW capacity.

1.7. The Petition was heard on 23.01.2018. The Commission admitted the Petition and directed UPCL to submit reply in the matter. Subsequently, on the replies of the Respondents, the Petitioner has submitted its rejoinder which has been dealt in the subsequent paras.

Further, the Petitioner clarified that the said plant is a rooftop solar plant set up under RESCO/third party model. The Petitioner submitted that being a generator, all the capital investment has been made by the Petitioner only and energy of such plant shall be supplied to M/s Asahi India Glass Ltd. to be locally consumed for a period of 25 years at a fixed tariff. The Petitioner submitted that the plant requires grid synchronization for reference voltage to operate inverters and all the safety measures has been taken care of to restrict back feeding of energy to UPCL network.

2. Respondent's submissions and Petitioner's reply

2.1. UREDA submitted that MNRE vide its guideline dated 26.06.214 has allowed the maximum capacity of 500 kW for the grid connected rooftop solar power plant and subsequently, vide order dated 04.03.2016 has decided the fraction of subsidy applicable for different type of consumers and under the said order, commercial & industrial establishment are not being provided subsidy from MNRE. UREDA also submitted that the GoUK vide its notification no. 1044/I/2013-5/11/2009 dated 27.06.2013 has notified Uttarakhand solar power policy 2013. The maximum capacity allowed under the said policy is 50 MW. UREDA submitted that if Petitioner shows their willingness to install the solar project under the policy, UREDA will approach GoUK for granting approval for inviting proposals under Type –II projects, i.e. projects to be set up on private land for captive/3rd party sale/under REC mode, of solar policy.

2.2. UPCL submitted that the Petitioner failed to explain why it is not qualified to install said solar power plant as per Regulation 33 of RE Regulations, 2013 and requested for clarification or direction for grid connectivity. UPCL further added that the power

generated from 3.60 MW Solar plants shall be used totally for captive consumption and such technology shall be used which will ensure that no injection of solar energy into the Grid will ever happen, however, the Petitioner has not provided anything regarding steps to be taken in case of failure of reverse power relay.

In reply, the Petitioner submitted that they are establishing a Rooftop Solar PV plant having capacity of 3600 kW at the rooftop of M/s Asahi India Glass Ltd and since Regulation 35 of RE Regulations, 2013 specifically deals with the installation of rooftop solar plants, however, the capacity limit under the proviso is not applicable for grid connected rooftop solar plants intended for captive consumption. Further, with regard to steps taken to stop injection of solar energy into the Grid, the Petitioner submitted that the capacity of rooftop solar PV plant is lower than the sanctioned/contracted load of the plant, i.e. 9200 kVA and PLC based controller are proposed to be installed to keep the solar generation lower than the load of M/s Asahi India Glass Ltd. Further, additional check is introduced through the conventional Physical Reverse Power Relay, which shall ensure that in case there is excess generation of energy from the solar PV system, the entire portion of the plant connected to the grid will trip and prevent the flow of energy into the Grid.

2.3. UCPL submitted that the Petitioner has requested for connectivity to the Grid and has not explained as to why the plant cannot be operated as an Off Grid System or Stand Alone System.

In reply, the Petitioner submitted that the said plant cannot be operated as Stand Alone System as it will be generating in parallel to the Grid and the plant requires grid synchronization for reference voltage to operate inverters and all the safety measures has been taken care of to restrict back feeding of energy to UPCL network. Further, IS 14153:1994 of BIS also provides that generation from Grid tied sources should not adversely affect the quality of the existing power of distribution system and should not endanger the safety of its operation and therefore, there should be no mismatch in frequency, current, voltage to ensure the safety of operations. Further, as per IS/IES 61683:1999 a stand-alone system needs a grid interface.

In counter reply, UCPL submitted two separate solar system have been defined under IS 14153:1994 and IS/IES 61683:1999, i.e. Stand Alone System and Grid Connected

System. IS 14153:1994 permits the PV power generating system to operate in parallel with the grid and thus power may flow to or from the grid. Accordingly, there is no relevance for seeking grid connectivity without power interaction with grid. Further, IS 14153:1994 recommends stand alone system with storage for Remote-Industries.

2.4. UPCL submitted that the Commission in its letter has clarified that provisions of RE Regulations, 2013 and amendments thereof do not apply in the case of the Petitioner as Electricity Act, 2003 allows the generating company or person to construct, maintain or operate a captive generating plant and such plants will be commissioned for captive use only. UPCL also submitted that the solar plant cannot be considered as captive generation power plant as the Petitioner has entered into a PPA with M/s Asahi India Glass Ltd.

In reply, the Petitioner submitted that the proposed plant to be installed at rooftop of M/s Asahi India Glass Ltd. is not a "Captive Generating Plant" as defined in Rule 3(1) of the Electricity Rules, 2005 as it is setup under the purely RESCO-Developer/Third Party model. The Petitioner is the solar power generator and the plant has been established with the condition that the entire electricity generated will be consumed at the premise of M/s Asahi India Glass Ltd. only. Therefore, the said plant set up for use by M/s Asahi India Glass Ltd. does not meet the terms and conditions of "Captive Generating Plant" under the relevant clause of Electricity Rules, 2005. Further, both Ownership model and Third-Party model have been identified and permitted in Hon'ble APTEL judgement dated 10.04.2015 in appeal no. 31 of 2015 taking into account the fact that there is no difference between the 2 models from an operational stand-point and the difference is only in the business model. The Petitioner also submitted that the ownership of the plant on part of M/s Asahi India Glass Ltd. is only on account of the business model adopted and it should not become a ground for preventing the establishment of the plant.

3. Commission's Analysis and view

3.1. The present Petition has been filed under Regulation 49 and Regulation 50 of RE Regulations, 2013 seeking clarification regarding non-applicability of Regulation 35, i.e. Grid interactive roof top and small solar PV plants, to grid interactive rooftop solar PV plant having capacity of 3600 kW for captive consumption or specific order of relaxation

for development of plant of 3600 kW capacity for captive consumption.

3.2. The Commission has gone through the submissions made by the Petitioner and the Respondents and has found out that the issues are whether the rooftop solar PV plant having capacity more than 500 kW, as per RE Regulations, 2013 can be installed as grid connected plant, whether such plant is a captive plant and the requirement of grid connectivity.

3.3. With respect to the question whether the generating plant is captive or not, the Commission has analysed the submissions of the Petitioner and found that the Petitioner has entered into a PPA with M/s Asahi India Glass Ltd., i.e. a consumer for the supply of entire power of such plant. The Petitioner also submitted that the said plant is setup under third party model where the Petitioner is a generator who has installed a solar PV plant at the rooftop of M/s Asahi India Glass Ltd. for consumption by the consumer. Accordingly, such plant does not fall under the definition of Captive Generating Plant as per Electricity Rules, 2005. This is a mere arrangement for supply of power from generating company to its consumer as per Section 10(2) of the Electricity Act, 2003.

3.4. With regard to need of connectivity of the plant with the distribution licensee, the Petitioner and Respondent has referred IS 14153:1994 and IS/IES 61683:1999 of Bureau of India. The Petitioner has submitted that there should be no mismatch in frequency, current, voltage of solar generation and Grid supply in order to ensure the safety of operations to avoid adverse affect on the quality of the existing power of distribution system. Whereas, UPCL submitted that IS 14153:1994 and IS/IES 61683:1999 of BIS recommends stand alone system with storage. The Commission has gone through the aforesaid standards and observes that for a standalone system, storage will be required compulsorily. However, it will not be financially viable for a generator to install multiple batteries to store the electricity to be generated from its rooftop solar PV plant having capacity of 3.6 MW. Further, grid connectivity will provide synchronization with the frequency, current and voltage which will be required for smooth operations of the Glass process plant.

Further, with regard to the steps to be taken to stop injection of solar energy into the grid, the Petitioner has submitted that PLC based controller are proposed to be installed to keep the solar generation lower than the load of M/s Asahi India Glass Ltd.

Further, additional check is introduced through the conventional Physical Reverse Power Relay, which ensures that in case there is excess generation of energy from the solar PV system, the entire portions of the plant connected to the grid will trip and prevent the flow of energy into the Grid. The Commission understands the concern of the distribution licensee regarding sudden gird disturbance due to failure of any of the protection measures taken by the Petitioner. Moreover, Section 86(1)(e) of the Electricity Act, 2003 specifies one of the function of the State Commission is to promote congeneration and generation of electricity from renewable sources of energy by **providing suitable measures for connectivity with the grid** and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licencee. **Therefore, the Commission directs UPCL to provide grid connectivity after mutually deciding with the Petitioner for additional protection measure, if any required, to stop injection of solar energy into the grid apart from the aforesaid protection measures taken by the Petitioner within one month from the date of order.**

3.5. With regard to the capping of the capacity of rooftop based solar PV plant, RE Regulations, 2013 specifies that rooftop and small solar PV plant having installed capacity only upto 500 kW can be established at the premises of the eligible consumer under net metering arrangement.

However, Section 10 (2) of the Electricity Act, 2003 allows the generating company to supply power to any consumer subject to provisions of the Act and Regulations made thereunder. Section 10(2) of the Electricity Act, 2003 stipulates as follows:

*"**10. Duties of generating companies:***

(1) XXX

(2) *A generating company may supply electricity to any licensee in accordance with this Act and the rules and regulations made thereunder and **may, subject to the regulations made under sub-section (2) of Section 42, supply electricity to any consumer."***

(Emphasis added)

Accordingly, a generating company is free to supply power to any consumer subject to the regulations made under Section 42(2) of the Act, 2003. Hence, all the

Rooftop Solar PV plants & small Solar PV plants having capacity of more than 500 kW can be installed by any generating company as per Electricity Act, 2003 and rules & regulations made thereunder. However, such plants shall not be eligible for net metering as specified in Regulation 42 of RE Regulations, 2013 as the said Regulation specifies net metering scheme for rooftop Solar PV plants having capacity of only upto 500 kW and for sale to distribution licensee.

Further, as mentioned in above Para, the generating company is free to supply power to any consumer subject to regulations made under Section 42(2) of the Electricity Act, 2003. Section 42(2) of the Electricity Act, 2003 specifies as follows:

"***Section 42. (Duties of distribution licensee and open access):***

(1) XXX

(2) The State Commission shall introduce open access in such phases and subject to such conditions, (including the cross subsidies, and other operational constraints) as may be specified within one year of the appointed date by it and in specifying the extent of open access in successive phases and in determining the charges for wheeling, it shall have due regard to all relevant factors including such cross subsidies, and other operational constraints:

Provided that such open access shall be allowed on payment of a surcharge in addition to the charges for wheeling as may be determined by the State Commission:

Provided further that such surcharge shall be utilised to meet the requirements of current level of cross subsidy within the area of supply of the distribution licensee:

Provided also that such surcharge and cross subsidies shall be progressively reduced in the manner as may be specified by the State Commission:

Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use:

Provided also that the State Commission shall, not later than five years from the date of commencement of the Electricity (Amendment) Act, 2003, by regulations, provide such open access to all consumers who require a supply of electricity where the maximum power to be made available at any time exceeds one megawatt."

Based on the aforesaid provision of the Act, a electricity consumer who is

willing to procure power from any source except from the State licensee, shall be liable to pay Open Access Charges, Wheeling Charges, Cross Subsidy Surcharge, Additional Surcharge as determined by the Commission. In the present case, the Commission observes that the grid will not be used for supply of power to the consumer as the solar PV plant has been installed at the premises, i.e. roof top of the consumer M/s Asahi India Glass Ltd.

Accordingly, the consumer will not be liable to pay Wheeling Charges and transmission charges as the grid will not be used for supply of power from generating plant to the consumer. However, a continuous support from the grid will be provided for reference voltage synchronization to operate inverters. Section 2(47) of the Act defines open access as "the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;".

Hence, the arrangement of taking continuous support of the grid by the generator for supplying power to the consumer is akin to sale under open access. Therefore, the consumer shall be liable to pay cross subsidy surcharge and additional surcharge, if any, as determined by the Commission from time to time. The consumer is not required to apply for open access since it is not using the lines of the licensee. In this regard, Hon'ble ATE in its Judgment dated February 09, 2010 in Appeal No. 119 of 2009 and Appeal No. 125 of 2009 has also held as under:

"..Admittedly, they have not used any line of the distribution system. If that is so, then there is no necessity for directing the Aryan Plant to go for license or go for open access."

However, sale of electricity directly by the generator to the consumer will result in decrease of sales of distribution licensee which in turn will reduce the amount of cross subsidy which the discom was entitled to recover and hence, there will be a necessity to charge cross subsidy surcharge from such consumers. The Cross Subsidy Surcharge is payable when the consumer draws power supply from a source other than the distribution licensee of his area by availing the open access. In this regard, Hon'ble ATE in its Judgment dated February 09, 2010 in Appeal No. 119 of 2009 and Appeal No. 125 of 2009 has held as under:

"17. The cross subsidy surcharge, which is dealt with under the proviso to sub-section 2 of Section 42, is a compensatory charge. It does not depend upon the use of Distribution licensee's line. It is a charge to be paid in compensation to the distribution licensee irrespective of whether its line is used or not in view of the fact that but for the open access the consumers would have taken the quantum of power from the licensee and in the result, the consumer would have paid tariff applicable for such supply which would include an element of cross subsidy of certain other categories of consumers. On this principle it has to be held that the cross subsidy surcharge is payable irrespective of whether the lines of the distribution licensee are used or not.

…

25. Thus it is clear that the Act read with Regulations as referred to above contemplated consumer receiving the supply of electricity from the source other than the licensee, thus making a proviso to compensate the licensee for the loss in the area thereof. The perusal of the above Regulation would show that there is provision for the payment of cross subsidy charges and by that process it safeguards the interest of the distribution licensee in whose

area the consumer is located."

Thus, from the above it is apparent that cross subsidy surcharge is a compensation payable to the discom irrespective of the fact whether its line is used or not. Similarly additional surcharge, if any, approved by the Commission will also be payable by the consumer.

Accordingly, the Commission directs the Petitioner to furnish to UPCL a copy of the bill raised by it on M/s Asahi India Glass Ltd. on monthly basis alongwith the copy of the MRI and UPCL is directed to raise the bill towards cross subsidy surcharge, if any, and additional surcharge on the consumer.

3.6. Ordered accordingly.

(Subhash Kumar)
Chairman