UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

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Coram

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UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2023

Statement of Reasons

In exercise of the powers conferred under Section 181(2) (zd) & (zp) of Electricity Act, 2003 (the Act) the Commission had issued draft Uttarakhand Electricity Regulatory Commission (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2023 for the Control Period from FY 2023-24 to FY 2027-28.

The Uttarakhand Electricity Regulatory Commission had previously notified the UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2018 (hereinafter referred to as "previous Regulations" or "RE Regulations, 2018"). The RE Regulations, 2018 governed all the matters relating to determination of generic tariff and project specific tariff for the renewable energy based generating stations. These regulations had a control period of five financial years from the date of notification. The Commission issued the draft RE Regulations for the ensuing control period inviting comments/objections/suggestions on the same from the stakeholders. Last date of submission of comments/objections/suggestions was 02.06.2023. Comments/suggestions/objections received by the Commission have been duly analysed before considering them or rejecting the same.

The Commission also held a public hearing on 13.06.2023 to facilitate oral submission of the stakeholders and other interested persons. The comments/objections/suggestions of the stakeholders have also been considered. List of stakeholders who submitted comments on draft notification is placed at **Annexure-I**. List of participants who attended the hearing is also enclosed at **Annexure-II.**

The Statement of objects and Reasons is being issued with the intent of explaining the rationale which went into finalisation of UERC (Tariff and Other Terms for Supply of Electricity from Renewable Energy Sources and non-fossil fuel based Co-generating Stations) Regulations, 2023 (hereinafter referred to as "RE Regulations, 2023"). However, in case of any deviation/discrepancy in the SOR with respect to RE Regulations, 2023 the provisions of RE Regulations, 2023 shall be applicable. The comments/suggestions/objections received from the stakeholders and public and the views of the Commission on the same are discussed in subsequent paragraphs.

Suggestions and objections of stakeholders and the Commission's views thereon are discussed hereunder:

1.1 First and Second Proviso to sub-regulation (3) of Regulation 2, i.e. Scope and extent of application.

The Commission had proposed the following in the draft Regulations:

"Provided that implementation of Canal Bank and Canal Top solar PV Plants by the eligible government organization (as specified by MNRE) and implementation of solar PV plants by eligible government organization shall be done through tariff based competitive bidding process. In such cases PPA for sale of power from these plants shall be signed with distribution licensee at a tariff quoted by L-1 bidder;

Provided further than in no case PPA for purchase of power by the distribution licensee shall be executed at a tariff exceeding the ceiling tariff as specified by the Commission in accordance with the regulations."

Stakeholders Comments/Suggestions

1.1.1 UPCL requested the Commission to provide the definition of Eligible Government Organisation and requested the Commission to provide clarify whether Central/State owned PSUs/Generating Companies/Education Institutes shall be covered under the definition of Eligible Government Organisation.

1.1.2 UJVN Ltd. submitted that GoUk has conveyed in-principal approval for development of Solar PV plants on all unutilised land available with the Government department/institutions/corporations of Uttarakhand. Thus, the expense for administrative and Liaisoning of UJVN Ltd. in the area of solar development on various small land parcel across the State have to be met out so that further development can be done. In absence of signing the PPA at tariff without 10% margin,

the purpose of other entities for initiating the RE projects would be defeated, therefore, provision of 10% should be kept in line with RE Regulations, 2018.

Commission's Views

1.1.3 With regard to the comment of UPCL, the following definition shall be inserted in the final regulations:

"'Eligible Government organization' means organisation of Government of India or State Government or any Public Sector Undertaking of the Govt. of India or any State Government."

1.1.4 During the public hearing, UJVNL was directed to submit the details of expenses incurred towards canal based solar power plants. UJVN Ltd. submitted the expected employee expenses of Rs. 6.75 Lakh for FY 2023-24 towards solar power plants and also submitted the details of expenditure incurred towards consultancy for preparation of DPR and other documents amounting to Rs. 82.88 Lakh. UJVN Ltd. also submitted the details of O&M expenses incurred for the last five years.

1.1.5 The Commission gone through the given data and observed that total expenses incurred for preparation of DPR and other administration works are amounting to Rs. 89.63 Lakh and considering the total installed capacity of solar power plants of 26.264 MW, per MW expenses incurred by UJVN Ltd. works out to Rs. 3.42 Lakh/MW which has an impact of approximate only approximately 2% on the tariff. However, considering the fact that with the increase of number of solar power plants, more O&M expenses will be required for paperwork and other official procedures. Further, there shall be no motive for engaging in such activities for installation of Solar power plants if the entire tariff discovered through bidding is transfer to the L-1 bidder. Accordingly, a reasonable return should be there to motivate eligible government organisation to execute such activities to ensure smooth installation and operations of solar power plant. Therefore, the Commission has decided to fix 8% additional tariff over and above tariff quoted by L-1 bidder. However, the same shall be applicable only for implementation of canal bank and canal top solar power plants implemented by eligible Government organisations.

Accordingly, based on the aforesaid discussion, first Proviso to Sub-regulation (3) of Regulation 2 shall be read as follows:

"Provided that implementation of Canal Bank and Canal Top Solar Power Plants by the eligible government organisation shall be done through tariff based competitive bidding process. In such cases PPA for sale of power from these plants shall be signed with distribution licensee at a tariff which shall be 8% higher than the tariff quoted by L-1 bidder, however, the tariff plus a margin of 8% shall not exceed the generic tariff determined by the Commission for the year of commissioning.

Provided further than in no case PPA for purchase of power by the distribution licensee shall be executed at a tariff exceeding the ceiling tariff as specified by the Commission in accordance with the regulations.*"*

1.2 Clause (x) of sub-regulation (1) of Regulation 3, i.e. definition of "Captive Generating Plant".

The Commission had proposed as follows in the draft Regulations:

""Captive Generating Plant" *means a power plant set up by any person to generate electricity primarily for his own use and includes a power plant set up by any cooperative society or association of persons for generating electricity primarily for use of members of such cooperative society or association where not less than twenty six percent of the ownership is held by the captive user(s), and not less than fifty one percent of the aggregate electricity generated in such plant, determined on an annual basis, is consumed for the captive use."*

Stakeholders Comments/Suggestions

1.2.1 UREDA and CEEW submitted that the current definition does not cover Group Captive Plants and there is also a need to define "Behind the meter" system in the Regulations for the consumers installing plants to meet their own consumptions needs.

Commission's View

1.2.2 It is pertinent to mention that the definition of Captive power plant does not restrict any person or persons or a group from developing more than one power plant for generating electricity primarily for own use provided other conditions are fulfilled and they satisfy the requirements of captive plant as laid down in the Electricity Rules. Accordingly, the Commission is of the view that no separate definition is required to define Group Captive Plants.

1.2.3 Further, UREDA and CEEW requested the Commission to provide the definition of Behind the meter in the RE Regulations. As per Solar Policy, 2023 'Behind the meter

solar PV projects' refers to Solar PV projects designed for self-consumption with reverse power flow relay to ensure that electricity generated from rooftop PV projects is not fed into the network of the Distribution Licensee, then such installation needs to be treated as grid-connected captive plants behind the meter rooftop solar installation which does not exchange electricity with the grid. It is pertinent to mention that such plants are already covered in the definition of captive power plants. Accordingly, the Commission has not used the term 'Behind the meter solar PV projects' in the draft regulations. Accordingly, the Commission does not find it prudent to insert the definition of 'Behind the meter solar PV projects'.

1.3 Clause (xv) of sub-regulation (1) of Regulation 3 i.e. Definition of "Date of Commercial Operation"

The Commission had proposed the following in the draft Regulations:

"Date of commercial operation or Commissioning (CoD)" *in relation to a unit means the date declared by the generator on achieving maximum continuous rating through a successful trial run and in relation to the generating station, the date of commercial operation means the date of commercial operation of the last unit or block of generating station and expression 'commissioning' shall be construed accordingly.*

Provided that in case of Small Hydro Plants the date of commissioning shall not be linked to achieving maximum continuous rating, nevertheless the generator will have to demonstrate the same within three years of commissioning.

Provided further that in case of Solar PV plant, date of commercial operation or Commissioning (CoD) shall be considered as the date of first injection of power into the licensee's grid after completion of project in all respect subsequent to compliance of all the following pre-requisites:

(a) Installation of energy meter as certified by the concerned Executive Engineer of the distribution licensee.

(b) Project completion report as verified by UREDA, the State nodal agency.

(c) Issuance of Clearance Certificate by the Electrical Inspector.

Further, such generator has to demonstrate minimum 75% Performance Ratio based on the rated installed capacity in kW or MW at the time of inspection for initial commissioning"

Stakeholders Comments/Suggestions

1.3.1 Akshay Urja Association submitted that the Commission may review the definition based on the Suo-moto Order dated 09.12.2021 which states as follows:

"The date of commissioning of Solar PV plant shall be considered as the date of first injection of power into the licensee's grid after completion of the project in all respect subsequent to compliance of initial three prerequisites, i.e. (i) installation of energy meter as certified by the concerned Executive engineer of the distribution licensee; (ii) project completion report as verified by UREDA and (iii) issuance of Clearance Certificate by the Electrical Inspector

Provided that minimum 75% Performance Ratio based on the rated installed capacity in kW or MW is demonstrated within Three months from the date of first injection of power into licensee's grid on compliance of aforesaid three pre-requisites.

Provided further, that if the specified limit of Performance Ratio is not achieved within Three months from the date of first injection of power into licensee's grid on compliance of aforesaid three pre-requisites, the actual date of demonstration of minimum 75% Performance Ratio, based on the rated installed capacity in kW or MW, shall be considered the commissioning date of the Solar PV plant."

1.3.2 Further, Akshay Urja Association also requested the Commission to provide the definition of Deemed Generation in the regulations.

Commission's View

1.3.3 The Commission vide its Suo-moto Order dated 09.12.2021 in the matter of clarification sought by Akshay Urja Association regarding Performance Ratio which is one of the pre-requisites for declaration of commercial operation of Solar PV Plants provided the modified definition of Date of Commercial Operation for Solar Power Plants. Akshay Urja Association has requested the Commission to make necessary modification in the definition of Date of Commercial Operation provided in the draft Regulations to incorporate observations of the Commission in the Suo-moto Order dated 09.12.2021. The Commission agrees to the request of the stakeholder. Accordingly, definition of 'Date of commercial operation or Commissioning (CoD)' shall be read as follows:

"Date of commercial operation or Commissioning (CoD)" *in relation to a unit means the date declared by the generator on achieving maximum continuous rating through a successful trial run and in relation to the generating station, the date of commercial*

operation means the date of commercial operation of the last unit or block of generating station and expression 'commissioning' shall be construed accordingly.

Provided that in case of Small Hydro Plants the date of commissioning shall not be linked to achieving maximum continuous rating, nevertheless the generator will have to demonstrate the same within three years of commissioning.

The date of commissioning of Solar PV plant shall be considered as the date of first injection of power into the licensee's grid after completion of the project in all respect subsequent to compliance of initial three prerequisites, i.e.

(i) installation of energy meter as certified by the concerned Executive engineer of the distribution licensee;
(ii) project completion report as verified by UREDA and
(iii) issuance of Clearance Certificate by the Electrical Inspector

Provided that minimum 75% Performance Ratio based on the rated installed capacity in kW or MW is demonstrated within Three months from the date of first injection of power into licensee's grid on compliance of aforesaid three pre-requisites.

Provided further, that if the specified limit of Performance Ratio is not achieved within Three months from the date of first injection of power into licensee's grid on compliance of aforesaid three pre-requisites, the actual date of demonstration of minimum 75% Performance Ratio, based on the rated installed capacity in kW or MW, shall be considered the commissioning date of the Solar PV plant."

1.3.4 Further, the stakeholder also requested the Commission to provide the definition of Deemed Generation. Accordingly, a new definition of Deemed generation shall be inserted as follows:

"Deemed Generation" *means the energy which a generating station was capable of generating but could not generate due to conditions of grid or power system, beyond the control of the generating station resulting in spillage of renewable resources."*

1.4 Clause (xxiii) and (xxiv) of sub-regulation (1) of Regulation 3, i.e. Definition of "GRPV and GSPV"

The Commission had proposed the following in the draft Regulations:

"Grid interactive roof top solar PV plants (GRPV)" *means Solar PV plant installed on the rooftop of a building under net metering arrangement having maximum capacity as specified under these Regulations.*

"Grid interactive small solar PV plants (GSPV)" *means Solar PV plants installed in the premises of a buildings (either entirely on the land or partly on the land and partly on the roof) and connected to the grid under net metering arrangement having maximum capacity as specified under these Regulations.*

Stakeholders Comments/Suggestions

1.4.1 UREDA submitted that to avoid confusion, it is recommended to merge the two definitions. MNRE defines rooftop solar system as "system installed mainly on the roof of a building and includes installation on open contiguous land within the area of premises wherein valid and live electricity connection has been provided by the concerned Distribution utilities/companies". In addition, such bifurcation is not provided in Uttarakhand State Policy, 2023 and may lead to misinterpretation.

Commission's View

1.4.2 The Commission accepts the comments of UREDA and has decided to merge the two definitions to be in sync with the definition of solar rooftop system as laid down by MNRE and also to avoid any misinterpretation. Accordingly, the above definition shall be read as:

"Grid interactive roof top solar PV plants (GRPV)/ Grid interactive small solar PV plants (GSPV)" *means Solar PV plant installed on the rooftop of a building and includes plants installed on open contiguous land within the premises and connected to the grid under net metering arrangement having maximum capacity as specified under these Regulations.*

1.5 Clause (xxv) of sub-regulation (1) of Regulation 3, i.e. definition of "Group Net Meter"

"Group Net Meter" *means an arrangement whereby surplus energy is generated and injected from a solar power plant through net meter and such surplus energy exported shall be adjusted in more than one electricity service connection(s) of the same consumer either at the same or different premise located within the same distribution licensee's area of supply."*

Stakeholders Comments/Suggestions

1.5.1 UREDA requested the Commission to provide the definition of Group Net Metering also.

Commission's View

1.5.2 The definition provided in the draft regulations is of Group Net Metering, however, inadvertently, it was mentioned as Group Net Meter. Accordingly, definition of "Group Net Metering" shall be read as follows:

*""**Group Net Metering**" means an arrangement whereby surplus energy is generated and injected from a solar power plant through net meter and such surplus energy exported shall be adjusted in more than one electricity service connection(s) of the same consumer either at the same or different premise located within the same distribution licensee's area of supply."*

1.6 Clause (xlix) of sub-regulation (1) of Regulation 3, i.e. definition of "Prosumer"

""Prosumer" means a consumer who is also a producer of Solar Power"

Stakeholders Comments/Suggestions

1.6.1 UREDA submitted that the definition of prosumer is not limited to solar power. Electricity (Right of consumers) Rules, 2020 defined prosumer as *"a person who consumes electricity from the grid and can also inject electricity into the grid for distribution licensee, using same point of supply."*

Commission's View

1.6.2 With regard to the comment of the Stakeholder, it is to be noted that generally, under net metering arrangement, a consumer generates electricity and inject surplus electricity into the grid after meeting out its own requirement and net metering arrangement is available only for solar power plants in the State. However, to align the definition with the provisions of Electricity (Right of consumers) Rules, 2020, the Commission decides to replace the definition of Prosumer provided in the draft regulations with the following:

***"Prosumer'"** means a person who consumes electricity from the grid and can also inject electricity into the grid of distribution licensee, using same point of supply."*

1.7 Sub-regulation (2) of Regulation 4, i.e. "Eligibility Criteria for qualifying as Generating Station based on Non-Conventional/ Renewable Energy Source"

The Commission had proposed the following in the draft Regulations:

"(2) At present, generation from following sources and technologies shall qualify to be covered under these Regulations:

(a) Small hydro project– Generating Stations being developed in accordance with the prevalent policies of the State Government in this regard and using new plant and machinery with capacity lower than or equal to 25 MW, at single location.

(b) Wind power project – located at the wind sites having minimum annual mean Wind Power Density (WPD) of 200 Watt/m2 measured at hub height of 50 meters and using new wind turbine generators.

(c) Solar PV, Canal bank & Canal top Solar PV, Solar Thermal and Grid interactive Roof Top and Small Solar PV Power Projects – Based on Technologies approved by MNRE.

(d) Biomass/Biogas power project - Biomass power projects using new plant and machinery based on Rankine Cycle technology and using biomass fuel sources, without use of fossil fuel;

(e) Non-fossil fuel based Co-generating Stations - The project shall qualify to be termed as a non-fossil fuel based co-generation project, if it is using new plant and machinery and is in accordance with the definition and also meets the qualifying requirement outlined below:

...

…

(f) Biomass Gasifier based Power Project – The project shall qualify to be termed as a biomass gasifier based power project, if it is using new plant and machinery and having a Grid connected system that uses 100% producer gas engine, coupled with gasifier technologies approved by MNRE.

(g) Biogas based Power Project – The project shall qualify to be termed as a biogas based power project, if it is using new plant and machinery and having grid connected system that uses 100% Biogas fired engine, coupled with Biogas technology for co-digesting agriculture residues, manure and other bio waste as may be approved by MNRE.

(h) Municipal solid waste based power projects – The project shall qualify to be termed as a Municipal solid waste based power project, if it is using new plant and machinery based on Rankine cycle technology and using Municipal solid waste as fuel sources.

(i) Refuse derived fuel based power projects – The project shall qualify to be termed as a Refuse derived fuel based power project, if it is using new plant and machinery based on Rankine cycle technology and using Refuse derived fuel as fuel sources.

(j) Hybrid Wind-Solar power Plant- The project shall qualify to be termed as a hybrid Wind-Solar power plant, if Solar photovoltaic (PV) array coupled with a wind turbine and configured to operate at the same point of grid connection.

(3) Any new source or technology would qualify as 'renewable energy', only after the technology for the same has been approved by MNRE approval. Further, the Commission shall determine tariffs separately for each technology after the approval of the technology by MNRE."

Stakeholders Comments/Suggestions

1.7.1 UREDA submitted that as per Uttarakhand Solar Policy 2023, one of the objectives is to showcase the potential of agro-voltaics to boost the agricultural income in the State. Therefore, the draft Regulation can specifically include this category and its definition. This is similar to the inclusion of Canal Bank Solar PV and Canal Top Solar PV Plants as a separate category.

Commission's View

1.7.2 It is to be noted that as per Solar Policy, 2023 agro-voltaic projects refers to solar power plants set up on cultivable or non-cultivable agricultural land. In this regard, the GoI has also launched Kusum Scheme to boost agricultural income. Hence, the Commission accepts the proposal of UREDA in this regard and decides to include agro-voltaic also in RE category. However, at present no tariff is being specified for the same and the same shall be determined separately when such projects are being implemented considering the MNRE guidelines and development in the country. Accordingly, clause (c) would be inserted in Regulation 4(2) to include agro-voltaic projects. The final clause (c) of Regulation 4(2) shall be read as follows:

"(c) Solar PV, Canal bank & Canal top Solar PV, Solar Thermal, Agro-voltaic and GSPV/GRPV – Based on Technologies approved by MNRE."

1.8 Regulation 5, i.e. Environmental and other clearances.

"(1) The RE Based Generating Stations and Co-generating Stations shall abide by the emission standards/environmental norms as may be set by the Union/State Government, and for that purpose it shall obtain all the required environmental and pollution clearances from the Central/State Pollution Control authorities, wherever applicable.

(2) The RE Based Generating Stations and Co-generating Stations shall obtain necessary clearances from the State Government/Uttarakhand Renewable Energy Development Agency (UREDA), wherever necessary"

Stakeholders Comments/Suggestions

1.8.1 Akshay Urja Association submitted that as solar power generation through PV cells is considered under white category by Ministry of Environment, Forest and Climate Change, therefore, to reduce the lethargic process of getting clearances and long documental process, no environmental clearances shall be required including wind power and mini hydel power (less than 25 MW). At present Dept of Industry and Commerce asks for the environment clearance before subsidy disbursement of solar power projects.

Commission's View

1.8.2 In the matter, it is to be noted that as per proposed regulation, the RE based generating stations and co-generating stations will be required to obtain clearances from the State Government or UREDA or any other department only if it is required under any law. RE based generators are obligated to obtain clearances only if it is mandatory under the bye laws of any department. The Developer may continue to develop the plant without any approval if no such clearance is required. Accordingly, the Commission does not find any reason to change the aforesaid regulation.

1.9 Sub-regulation (8) of Regulation 6, i.e. Obligations and Duties of Generating Station.

The Commission had proposed as follows in the draft Regulations:

"(8) The RE Based Generating Stations and Co-generating Stations shall coordinate with State Transmission Utility/Distribution Licensee for the purpose of planning and coordination relating to intra-state transmission/distribution system as provided under the Act."

Stakeholders Comments/Suggestions

1.9.1 UREDA requested the Commission to add the following provision can be added in compliance with Solar Policy, 2023:

"and the State Transco assess transmission needs and conduct medium to long-term transmission planning in consultation with the discom and UREDA. Transco/Discom(s) of Uttarakhand shall strengthen the upstream system on a priority basis. Supervision charges levied by the Uttarakhand Transco/Discom(s) may be exempted for all solar power plants except utility-scale solar power plants."

1.9.2 Akshay Urja Association submitted that the obligations and duties to be fulfilled by the generating stations are dependent on the availability of various electrical parameters of the grid. For eg. in case high voltage or very low voltage beyond permissible limits as per state grid codes are allowed to flow in the discom infrastructure interconnected to the generating station then such conditions would jeopardize the safety and operation parameters of generating stations. This would hamper the compliance of obligation and duties to be fulfilled by the generating station.

Hence, in the large interest of safety and in the equality of law, it is requested that the obligations and duties of the discom in same context may also be listed out.

Commission's View

1.9.3 In the matter, it is pertinent to mention that distribution is a licensed activity and the distribution licensee is governed not only by the provisions of Electricity Act, 2023 but also by the various regulations and rules made thereunder. For instance, Section 53 of the Electricity Act, 2003 casts responsibility on the distribution licensee alongwith other duties to protect the public including generator from damage arising from generation. Further, distribution/transmission licensee is governed by State Grid Code, Supply Code and CEA technical parameters. Furthermore, Distribution/transmission Licensee is also required to provide connectivity subject to technical feasibility and technical standards for construction of electricity lines and connectivity with the grid as may be specified by CEA. Therefore, the Commission does not find it prudent to cast any other obligation on the distribution/transmission licensee as already laid down in the Act/Rules.

1.10 Sub-regulation (1)&(2) of Regulation 7, i.e. Sale of Power

The Commission had proposed as follows in the draft Regulations:

"(1) All RE Based Generating Stations and Co-generating Stations shall be allowed to sell power, over and above the capacity required for their own use, to the distribution licensee provided that distribution licensee is willing to enter into a PPA or to local rural grids at the rates determined by the Commission or to any consumer/person within the State or outside the State at mutually agreed rates (provided that such consumer has been allowed Open Access under Open Access Regulations).

(2) The distribution licensee on an offer made by the said RE based Generating Stations and Co-generating Stations may enter into a power purchase agreement in conformity with these Regulations and relevant provisions of other Regulations and the Act. However, if the distribution licensee intends to purchase power from such generator it shall sign the PPA within two months of offer made by the generating company. Otherwise, if the distribution licensee is not willing to purchase power from such generator it shall intimate the same to the generating company within one month of offer made by it.

3. xxx

Provided further that the application for approval of PPA should be accompanied with an unconditional Technical Feasibility Report and the connectivity agreement signed with the Transmission/Distribution licensee shall form part of the PPA."

Stakeholders Comments/Suggestions

1.10.1 UJVN Ltd. submitted that Uttarakhand State Hydro policy states as follows:

"The entire power generated from the project having capacity upto 25 MW will mandatorily be purchased by UPCL at tariff as determined by UERC. If the appropriate action will not be taken by UPCL within the stipulated time as defined in the regulations issued by the Commission from time to time, then the penalty imposed by the Government of Uttarakhand after due deliberation shall be payable by UPCL."

1.10.2 The stakeholder requested the Commission to align the above regulation in accordance with the provisions of Hydro Policy. Further, UJVN Ltd. also submitted that there should be clear timeline for providing connectivity by state licensee to ensure that commissioning of RE based project should not be delayed owing to connectivity constraints.

1.10.3 Akshay Urja Association submitted that in context of GRPV and GSPV plants, it may be mentioned that sale of power would also be allowed as per Virtual Net metering and the same may be installed in own or third party premises or at any other location in the State under CAPEX or RESCO model which is covered by discom's distribution area. Further, timeline of 1 month for signing of PPA may be mandated.

1.10.4 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. also submitted that it should be binding on Discom to enter into all PPAs offered by SHPs at generic tariff or project specific tariff.

1.10.5 M/s Chamoli Hydro Power Pvt. Ltd., M/s Birahi Ganga Hydro Power Ltd., M/s Himalaya Hydro Pvt. Ltd., Uttar Bharat Hydro Power P. Ltd. and All India Renewable Energy Protection Association submitted that UPCL meets its power deficit from IEX at very high rates. It would be benefit the state if regulations would make it obligatory for the discom to purchase power generated from upcoming SHPs. It would help to meet the RPO.

Commission's View

Many stakeholders requested the Commission to make it mandatory for distribution licensee to purchase power generated from upcoming SHPs. In the matter, the Commission is of the view since the current Hydro Policy makes it mandatory distribution licensee to execute PPA with SHP developershence, there seems no need to add any provisions in the Regulations to this regard.

1.10.6 UJVN Ltd. submitted that there should be clear timelines for providing connectivity to all the RE based generating stations irrespective of the PPA's with discom. In the matter, it is to mention that the generating stations approach the distribution licensee well in advance so that the licensee can plan to provide connectivity to the RE based generating station. If Technical feasibility exists for the evacuation of power, the licensee may allow connectivity to the project within one month of the date of application subject to availability of capacity. However, if any new evacuation infrastructure has to be developed for providing connectivity to any generator the time line for the same may be decided mutually between the licensee and the generator.

1.10.7 With regard to Akshay Urja Association request to mandate 1 month timeline for signing of PPA. It is to be noted that when a developer approaches the distribution licensee, it requires time to evaluate its power requirement, existing network capacity alongwith other technical aspects of the proposed power plant's location which is a time-consuming exercise. Therefore, the Commission does not find it prudent to cut short the time period for signing a PPA from two months to one month. Further, as far as GRPV and GSPV plants under virtual net metering and group net metering is concerned, it is pertinent to mention that all the Solar Power Plants will qualify for virtual net metering or group net metering which fulfil the conditions specified under these regulations for virtual net metering and group net metering.

Accordingly, based on the above, regulation is modified to the extent as given below:

"(1) All RE Based Generating Stations and Co-generating Stations shall be allowed to sell power, over and above the capacity required for their own use, to the distribution licensee provided that distribution licensee is willing to enter into a PPA or to local rural grids at the rates determined by the Commission or to any consumer/person within the State or outside the State at mutually agreed rates (provided that such consumer has been allowed Open Access under Open Access Regulations).

(2) The distribution licensee on an offer made by the said RE based Generating Stations and Co-generating Stations may enter into a power purchase agreement in conformity with these Regulations and relevant provisions of other Regulations and the Act. However, if the distribution licensee intends to purchase power from such generator it shall sign the PPA within two months of offer made by the generating company. Otherwise, if the distribution licensee is not willing to purchase power from such generator it shall intimate the same to the generating company within one month of offer made by it.

Provided that where a GRPV/GSPV plant, is installed in the Premises, by a third party who intends to sell net energy (i.e. after adjustment of entire consumption of owner of the premise) to the distribution licensee, a tripartite agreement will have to be entered into amongst the third Party, the Eligible Consumer and such Distribution Licensee.

(3) The distribution licensee shall make an application for approval of power purchase agreement entered into with the generating company in such form and manner as specified in these regulations and UERC (Conduct of Business) Regulations, 2014 as amended from time to time within one month of the date of signing the PPA.

Provided further that the application for approval of PPA should be accompanied with an unconditional Technical Feasibility Report and the connectivity agreement signed with the Transmission/Distribution licensee shall form part of the PPA."

1.11 Regulation 8 (2) & (4), i.e. Green Energy

In the draft Regulation, the Commission had proposed as follows:

"(1) xxx

(2) The tariff for the green energy shall be specified by the Commission in the Tariff Orders of Distribution Licensee which shall comprise of the average pooled power purchase cost of the

renewable energy, cross-subsidy charges if any, and service charges covering the prudent cost of the distribution licensee for providing the green energy.

(3) xxx

(4) The green energy purchased from distribution licensee or from Renewable Energy sources other than distribution licensee in excess of Renewable Purchase Obligation of the obligated entity shall be counted towards Renewable Purchase Obligation compliance of the distribution licensee."

Stakeholders Comments/Suggestions

1.11.1 UREDA requested the Commission to define green tariff and the intent of introducing such tariff to encourage consumers to switch towards green energy and become early mover by announcing economically attractive green tariff rates. This is also in accordance with Solar Policy, 2023. UREDA also requested the Commission to replace the existing clause (4) of regulation 8 with the following so that the benefits of RPO shall only be for energy procured by distribution licensee:

"The green energy purchase from distribution licensee or from Renewable Energy Source other than distribution licensee in excess of Renewable Purchase Obligation of the obligated entity shall be counted towards Renewable Purchase Obligation compliance of the distribution licensee."

Commission's View

1.11.2 With regard to comments of UREDA on the provisions of green energy, it is pertinent to mention that Ministry of Power, GoI has notified Green Open Access Rule, 2022 on 06.06.2022 and Rule 4(2)(C)(c) of Green Open Access Rules, 2022 specifies that the tariff for the supply of green energy by distribution licensee shall be determined by the appropriate Commission. Moreover, Solar Policy, 2023 also specifies that the Commission shall introduce Green Tariff in its Regulations allowing all electricity consumers to opt for green energy.

Further, as far as UREDA comment for allowing benefit of RPO to distribution licensee against the renewable energy procured by it is concerned, it is pertinent to mention that the Commission has incorporated the aforesaid regulation to align with the provisions specified under Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022. The Commission does not find it prudent to deviate from the provisions specified by MoP, GoI. Further, to align with the

provisions specified by MoP, GoI under aforesaid rule, the Commission decides to insert the following sub-regulation (2) after sub-regulation (1) of Regulation 8:

"(2) The consumer may purchase on voluntary basis, more renewable energy, than he is obligated to do and for ease of implementation, this may be in steps of twenty five percent and going upto hundred percent."

1.12 Regulation 9, i.e. Open Access

In the draft regulations, the Commission had proposed as follows:

"(1) Non-discriminatory Open access in State Transmission/Distribution System shall be allowed to all RE based Generating stations and Co-generating Stations for captive use and to those covered under Regulation 70, which shall be subject to the provisions of the Open Access Regulations.

Provided that the 'open access' shall be allowed subject to the availability of surplus capacity in the State Transmission/Distribution System.

Provided that the Captive user shall be required to pay Parallel Operation Charges to Distribution Licensee and Transmission Licensee, as the case may be, for utilization of grid support from Distribution Licensee and/or Transmission Licensee. The Commission shall specify the Parallel Operation Charges in its Tariff Orders for distribution licensee or transmission licensee, as the case may be, on annual basis.

(2) Such open access shall be subject to payment of transmission/wheeling charges and adjustment of average transmission/distribution losses in kind as determined in accordance with the Regulation 41 of these Regulations.

(3) If any question arises as to the availability of surplus capacity in the State transmission system or the State distribution system, the matter shall be adjudicated and decided by the Commission."

Stakeholders Comments/Suggestions

1.12.1 UREDA requested the Commission to insert the following after first proviso of sub-regulation (1):

"Distribution licensee shall update the status of open access application for the intra-state network within 21 days. In the absence of any response of intimation from the distribution licensee to the applicant within 21 days, the application shall be deemed to be approved,

unless the distribution licensee shall seek additional time (maximum upto 15 days) citing the valid reasons for the extension."

Further, the Stakeholder also requested the Commission to insert following after sub-regulation (2):

"Whereas captive/group-captive solar plants shall be exempted from paying transmission and wheeling charges. Whereas GRPV projects installed by residential, institutional and agricultural consumers shall be exempted from paying transmission charges, wheeling charges, cross subsidy and additional surcharge."

UREDA and Akshay Urja Association requested the Commission to notify "Green Energy Open Access Regulations and compensation of charges by GoUk due to open access waiver as per Solar Policy, 2023.

1.12.2 Akshay Urja Association requested the Commission to reduce or remove the charges to promote green energy open access. Further, Commission may reduce or remove the open access charges to promote green energy open access. Further, the Stakeholder submitted that grant of connectivity to generators seeking Green Energy Open Access should be in line with MoP, GoI notification dated 06.06.2022.

1.12.3 M/s Amplus solar submitted that Section 7 of Electricity Act, 2003 and Technical Standards prescribed by CEA do not recognize any special conditions of grid-connectivity for captive generating plants. Further, cost of grid operations is recovered primarily through transmission or wheeling charges for power that is transmitted by the generators and utilised or drawn by the distribution licensee or consumers, at various points in the grid. The grid interacts with the generator and the support is given to each other depending on various factors. Therefore, imposing grid support charges/Parallel Operation Charges to a particular category of grid user, i.e. captive generating plants is not justifiable.

The stakeholder also submitted that the Parallel charges may only be levied when power is consumed by industrial loads with co-located generating station. Power consumed by industrial loads with dedicated transmission line or through grid shall not be charged Parallel operation charges because the charges towards grid usage is already recovered in the form of transmissions and wheeling charges. Therefore, it is requested to delete the clause pertaining to imposition of grid support charges.

Commission's View

1.12.4 UREDA requested the Commission to insert provision regarding updating status of open access application from the intra-state network within 21 days and in the absence of any response from distribution licensee, the application may be considered approved unless licensee seeks additional time with proper justification. The Stakeholder also requested the Commission to incorporate appropriate provision regarding exemption of transmission and wheeling charges for captive/group-captive solar plants. Further, the Stakeholder also requested the Commission to notify 'Green Energy Open Access Regulations'.

With regard to notifying 'Green Energy Open Access Regulations', it is pertinent to mention that the Commission has issued draft UERC (Green Open Access) Regulations, 2023 and the same will be notified after public hearing and considering Stakeholders comments. Further, as far as exemption of transmission/wheeling charges to captive/group-captive power plants is concerned, the Commission observes Clause 8.2.3 (II) 'Incentives' of Solar Policy 2023 specifies that grid connected solar captive power Projects (including storage systems) or group captive projects shall attract 100% exemption from transmission and wheeling charges for a period of 5 years from the date of commissioning of the project. The Commission decides to insert a provision to align with the provisions specified under Solar Policy, 2023.

1.12.5 Further, Stakeholder has requested the Commission to direct UPCL to update status of open access application from the intra-state network within 21 days and in the absence of any response from distribution licensee, the application may be considered approved unless the distribution licensee seeks additional time with proper justification. It is pertinent to mention that the open access application is dealt by SLDC. As far as request for provision regarding specifying time limit for approving an open access application, it is pertinent to mention that the matter has already been dealt in the Open Access Regulations and hence, there is no need to specify the same here again.

1.12.6 With regard to the comments of M/s Amplus Solar on applicability of parallel operation charges on the captive power plants in the premises of consumer and captive power plant evacuating power from the different location through open access or dedicated transmission line.

The Commission is of the view that the Parallel operation is an activity where one electrical system operates with the connectivity to another system in similar operating conditions. The captive power plants opts for parallel operations to seek safety, security and reliability of operation with the support of a much larger and stable system as afforded by the grid. Captive power plants, which are designed to meet the electricity needs of a specific entity or facility, often require access to the grid for synchronization and backup power supply. Parallel Operation Charges are imposed to cover the costs associated with granting grid access and providing necessary technical support for parallel operation, including system stability, voltage regulation, and frequency control for grid access and support. Further, Captive power plants, when operated in parallel with the grid, become part of the interconnected power system. Grid operators have to ensure the stability, reliability, and overall performance of the grid even when additional power sources are connected. Parallel Operation Charges contribute to the funds needed to manage the integration of captive power plants into the grid and ensure the system remains balanced and secure.

Accordingly, the Commission decides that second proviso to sub-regulation (1) of Regulation 9 shall be read as follows:

"Provided that the captive power plants shall be required to pay Parallel Operation Charges to Distribution Licensee and/or Transmission Licensee, as the case may be, for utilization of grid support from Distribution Licensee and/or Transmission Licensee. The Commission shall specify the Parallel Operation Charges in its Tariff Orders for distribution licensee or transmission licensee, as the case may be, on annual basis.

Provided that levy of Open Access Charges on captive projects shall be governed by the relevant provisions of the Act and policies issued by Central/State Government from time to time."

1.13 Regulation 10 i.e. Minimum Quantum of electricity to be purchased by distribution licensees from 'non-fossil fuel based co-generation and generation of electricity from renewable energy sources.

In the draft Regulation, the Commission had proposed as follows:

"(1) In line with the provisions of the Act, National Electricity Policy, the Tariff Policy to promote development of renewable and non–conventional sources of energy, all existing and future distribution licensees, captive users and open access customers, hereinafter referred to as "Obligated Entity", in the State shall be obliged to procure minimum percentage of their total

electricity requirement for own consumption, as indicated below, from eligible renewable energy sources as defined under Regulation 4. The same shall be called the Renewable Purchase Obligation (RPO) of the Obligated Entities.

Year	***Wind RPO***	***Hydro Purchase Obligation (HPO)***	***Other RPO***
2023-24	*1.60%*	*0.66%*	*24.81%*
2024-25	*2.46%*	*1.08%*	*26.37%*
2025-26	*3.36%*	*1.48%*	*28.17%*
2026-27	*4.29%*	*1.80%*	*29.86%*
2027-28	*5.23%*	*2.15%*	*31.43%*
2028-29	*6.16%*	*2.51%*	*32.69%*
2029-30	*6.94%*	*2.82%*	*33.57%*

a. *Wind RPO shall be met only by energy produced from Wind Power Projects (WPPs), commissioned after 31st March 2022.*

b. *HPO shall be met only by energy purchased from HPPs (including PSPs and Small Hydro Projects (SHPs)), commissioned after 8th March 2019.*

c. *Other RPO shall be met by energy produced from any RE power project not mentioned in (a) and (b) above.*

Percentage RPO as stipulated above denotes Minimum Quantum of purchase from non-fossil fuel based co-generation and generation of electricity from renewable energy sources' as a percentage of total energy purchased from all sources/generated by the Obligated Entity during the year for own consumption.

Where, total energy purchased for different obligated entities shall be as under:

a. *For Discoms, total energy purchased from all sources during the year for own consumption; and*

b. *For Open Access consumers, total energy purchase through Open Access shall be metered consumption recorded at drawl/consumption point during the year for own consumption.*

c. *For Captive users, total energy purchased shall be metered consumption recorded at drawl/consumption point during the year for own consumption.*

Provided that HPO obligation of the Distribution licensee may be met out of the free power being provided to the State from HPPs (including PSPs and SHPs), commissioned after 8th March 2019 as per agreement at that point of time excluding the contribution towards LADF, if consumed within the Discom. Free Power (not that contributed for Local Area Development) shall be eligible for HPO benefit.

Provided that any shortfall remaining in achievement of 'Other RPO' category in a particular year can be met with either the excess energy consumed from Wind Power Plants, commissioned after 31st March 2022 beyond 'Wind RPO' for that year or with excess energy consumed from eligible HPPs (including PSPs and SHPs), commissioned after 8th March 2019 beyond 'HPO' for that year or partly from both. Further, any shortfall in achievement of 'Wind RPO' in a particular year can be met with excess energy consumed from Hydro Power Plants, which is in excess of 'HPO' for that year and vice versa.

(2) For the purpose of this RPO framework, for every obligated entity, own consumption would mean gross energy consumed or purchased by the obligated entity from all sources for its own use or for the purpose of supply to its consumers within its area of supply, excluding any inter-se sale of electricity amongst the Licensees or outside consumers.

(3) Distribution licensee shall be eligible to utilise the gross Solar energy generated from the GRPV or GSPV of non-obligated entities for meeting its 'Other RPO' compliance based on the gross energy generated meter reading of such GRPV or GSPV.

(4) The following percentage of total energy consumed shall be solar/wind energy alongwith/through storage

Financial Year	***Storage (on Energy basis)***
2023-24	*1.0%*
2024-25	*1.5%*
2025-26	*2.0%*
2026-27	*2.5%*
2027-28	*3.0%*
2028-29	*3.5%*
2029-30	*4.0%*

(5) The Energy Storage Obligation shall be calculated in energy terms as a percentage of total consumption of electricity and shall be treated as fulfilled only when and at least 85% of the total energy storage in the Energy Storage System (ESS), on an annual basis, is procured from renewable energy sources.

(6) The Energy Storage Obligation to the extent of energy stored from RE sources shall be considered as a part of fulfilment of the total RPO as mentioned under sub-regulation (1) of this regulation.

(7) UREDA will maintain the data related to compliance of RPO Obligation."

Stakeholders Comments/Suggestions

1.13.1 UREDA submitted that Solar Policy, 2023 highlights the need for specifying Solar RPO to create the demand for solar in the State. There is need to introduce SPO Obligation to create confidence in the sector and also in compliance with the Solar Policy. Further, UREDA requested the Commission to issue guidelines and tariff for the battery energy storage system so that energy storage obligation in the State may be achieved.

1.13.2 UJVN Ltd. also requested the Commission to specify Solar RPO. The Stakeholder submitted that GoUk has conveyed in-principal approval to UJVN Ltd. for development of Solar PV plants on unutilised land available with Govt. department. For UJVN Ltd. PPA for 17 MW Solar plant is under process and further Solar PV Plants of 100 MW are in pipeline. UREDA is also taking proactive steps for development of RE power in the State. Therefore, separate RPO category for solar energy should be provided in these regulations.

1.13.3 Akshay Urja Association also requested for separate Solar RPO. The Stakeholder suggested to designate UREDA as nodal agency not only for data collection but also to ensure implementation and compliance of RPO targets. RPO Regulatory fund may be setup to be created and managed by UREDA and utilise the same as per the directions of the Commission. If Obligated Entity fails to meet RPO, Obligated Entity may be directed to deposit into a separate fund such amount as the Commission may determine on the basis of shortfall. Further, such RPO fund may be utilised for development of evacuation infrastructure related to RE generating stations.

1.13.4 IEX submitted that MoP has notified RPO framework vide notification dated 22.7.2022 and corrigendum 19.09.2022 wherein compliance of RPO through REC is also recognized. Further, additional provision allowing purchase of RECs to obligated entities for fulfilment of RPO should be inserted.

Commission's View

1.13.5 Akshay Urja Association has requested the Commission to designate UREDA to ensure implementation and compliance of RPO targets. In the matter, it is pertinent to mention that the Commission has issued RPO Compliance Regulations, 2010 specifying the responsibilities of UREDA. Accordingly, the Commission does not find it prudent to reiterate the responsibilities and duties of UREDA.

1.13.6 Further, Akshay Urja Association suggested if Obligated Entity fails to meet RPO, Obligated Entity may be directed to deposit into a separate fund such amount as the Commission may determine on the basis of shortfall. Further, such RPO fund may be utilised for development of evacuation infrastructure related to RE generating stations.

With regard to a separate fund, this issue has been dealt in UERC RPO Compliance Regulations 2010 and hence, the same is not being reiterated again.

1.13.7 UREDA has requested the Commission to issue guidelines and tariff for the battery energy storage system so that energy storage obligation in the State may be achieved. In this regard, in the absence of data regarding norms and technologies, it will not be possible to specify the tariffs for battery storage system. However, as and when norms and benchmark costs are available the Commission will separately determine the tariffs for battery storage systems.

1.13.8 MoP, GoI vide Order dated 22.07.2022 has specified trajectory for Wind RPO, HPO and other RPO. The Commission adopted the same trajectory in the draft regulations. However, many Stakeholders have requested the Commission to issue separate Solar RPO trajectory for the promotion of solar power plants development in the state.

1.13.9 Further, during the public hearing, many Stakeholders requested the Commission to introduce separate trajectory of solar purchase obligation. In the matter, the Commission has gone through the Solar Policy, 2023 and observed that GoUk has set a target of cumulative installed capacity of 2500 MW in the State by December 2027 through a diversified project portfolio across consumer categories, locations and application. Further, State policy, 2023 states that the Commission will specify the Solar RPO trajectory for the obligated entities. Accordingly, taking cognizance of the target of Solar capacity set by the State Government and comments of the stakeholders, the Commission decides to amend the proposed draft Regulation. The final Regulation shall be read as follows:

"*(1) In line with the provisions of the Act, National Electricity Policy, the Tariff Policy to promote development of renewable and non–conventional sources of energy, all existing and future distribution licensees, captive users and open access customers, hereinafter referred to as "Obligated Entity", in the State shall be obliged to procure minimum percentage of their total electricity requirement for own consumption, as indicated below, from eligible renewable energy*

sources as defined under Regulation 4. The same shall be called the Renewable Purchase Obligation (RPO) of the Obligated Entities.

Year	Wind RPO	Hydro Purchase Obligation (HPO)	Other RPO		
			Solar RPO	Other than Solar	Total of Other RPO
2023-24	1.60%	0.66%	5.00%	19.81%	24.81%
2024-25	2.46%	1.08%	5.31%	21.06%	26.37%
2025-26	3.36%	1.48%	5.68%	22.49%	28.17%
2026-27	4.29%	1.80%	6.02%	23.84%	29.86%
2027-28	5.23%	2.15%	6.33%	25.10%	31.43%
2028-29	6.16%	2.51%	6.59%	26.10%	32.69%
2029-30	6.94%	2.82%	6.77%	26.80%	33.57%

a. *Wind RPO shall be met only by energy produced from Wind Power Projects (WPPs), commissioned after 31st March 2022.*

b. *HPO shall be met only by energy purchased from HPPs (including PSPs and Small Hydro Projects (SHPs)), commissioned after 8th March 2019.*

c. *(i) Solar RPO shall be met by energy produced from solar energy based power plants.*

   (ii) Other than Solar RPO shall be met by energy produced from any RE power project not mentioned in (a) and (b) and (c)(i) above.

Percentage RPO as stipulated above denotes Minimum Quantum of purchase from non-fossil fuel based co-generation and generation of electricity from renewable energy sources' as a percentage of total energy purchased from all sources/generated by the Obligated Entity during the year for own consumption.

Where, total energy purchased for different obligated entities shall be as under:

a. *For Discoms, total energy purchased from all sources during the year for own consumption; and*

b. *For Open Access consumers, total energy purchase through Open Access shall be metered consumption recorded at drawl/consumption point during the year for own consumption.*

c. *For Captive users, total energy purchased shall be metered consumption recorded at drawl/consumption point during the year for own consumption*

Provided that HPO obligation of the Distribution licensee may also be met out of the free power being provided to the State from HPPs (including PSPs and SHPs), commissioned after 8th March 2019 as per agreement at that point of time excluding the contribution towards LADF, if

consumed within the Discom. Free Power (not that contributed for Local Area Development) shall be eligible for HPO benefit.

Provided that any shortfall remaining in achievement of 'Solar RPO' category in a particular year can be met with excess energy consumed from eligible HPPs (including PSPs and SHPs), commissioned after 8th March 2019 beyond 'HPO' for that year or with excess energy consumed from eligible 'Other than Solar RPO' under category of 'Other RPO' for that year.

Provided further that any shortfall remaining in achievement of 'Other than Solar RPO' under 'Other RPO' category in a particular year can be met with either the excess energy consumed from Wind Power Plants, commissioned after 31st March 2022 beyond 'Wind RPO' for that year or with excess energy consumed from eligible HPPs (including PSPs and SHPs), commissioned after 8th March 2019 beyond 'HPO' for that year or with excess energy consumed from solar plants beyond 'Solar PRO' for that year or partly from all above three category..

Provided further that any shortfall in achievement of 'Wind RPO' in a particular year can be met with excess energy consumed from Hydro Power Plants, which is in excess of 'HPO' for that year and vice versa.

(2) For the purpose of this RPO framework, for every obligated entity, own consumption would mean gross energy consumed or purchased by the obligated entity from all sources for its own use or for the purpose of supply to its consumers within its area of supply, excluding any inter-se sale of electricity amongst the Licensees or outside consumers.

(3) Distribution licensee shall be eligible to utilise the gross Solar energy generated from the GRPV /GSPV of non-obligated entities for meeting its 'Solar RPO' compliance based on the gross energy generated meter reading of such GRPV/GSPV.

(4) The following percentage of total energy consumed shall be solar/wind energy alongwith/through storage

Financial Year	***Storage (on Energy basis)***
2023-24	*1.0%*
2024-25	*1.5%*
2025-26	*2.0%*
2026-27	*2.5%*
2027-28	*3.0%*
2028-29	*3.5%*
2029-30	*4.0%*

(5) The Energy Storage Obligation shall be calculated in energy terms as a percentage of total consumption of electricity and shall be treated as fulfilled only when and at least 85% of the

total energy storage in the Energy Storage System (ESS), on an annual basis, is procured from renewable energy sources.

(6) The Energy Storage Obligation to the extent of energy stored from RE sources shall be considered as a part of fulfilment of the total RPO as mentioned under sub-regulation (1) of this regulation.

(7) UREDA will maintain the data related to compliance of RPO Obligation."

1.14 Regulation 11, i.e. Tariff

The Commission had proposed the following in the draft Regulations:

"(1) The tariff determined under these Regulations shall be applicable for sale of electricity to the distribution licensees and to local rural grids only. The Commission shall as far as possible be guided by the principles and methodologies, if any, specified by the CERC, National Electricity Policy and the Tariff policy.

(2) The RE Based Generating Stations and Co-generating Stations, except those mentioned under second Proviso to sub- Regulation (1) of Regulation 2, may opt for the generic tariff, as determined based on norms specified in these Regulations for different technologies, or may file a petition before the Commission for determination of "Project Specific Tariff". For this purpose, RE Based Generating Stations and Co-generating Stations shall give its option to the distribution licensee at least 3 months in advance of date of commissioning of the project or commissioning of the first unit, in case of multiple units. This option once exercised shall not be allowed to be changed during the validity period of the PPA.

Provided that the option of seeking project specific tariff shall not be available to the following:

(i) Any type of solar power plant,

(ii) Wind Energy Power Plants; and

(iii) Other RE based power projects having installed capacity upto 1 MW.

Provided further that if generating company does not give its option to the distribution licensee within above stipulated time, generic tariff shall be applicable based on the date of commissioning of the project or commissioning of the first unit, in case of multiple units.

(3) Project Specific Tariff, on case to case basis, shall be determined by the Commission in the following cases:

(a) For projects opting to have their tariffs determined on the basis of actual capital cost instead of normative capital cost as specified for different technologies under Chapter 5 subject to 1st Proviso of Regulation 11(2) above, the CUF (generation) for recovery of fixed charges shall be taken as that envisaged in the approved DPR or the normative CUF specified under Chapter 5 for the relevant technology, whichever is higher;

(b) Other hybrid projects include renewable–renewable or renewable–conventional sources, for which renewable technology is approved by MNRE;

(c) Projects having old plant and machinery or equipment;

(d) The RE generating company for meeting the expenditure on Renovation, Modernisation and Up-gradation (RMU) for the purpose of extension of life beyond the useful life of its RE based power plant shall make an application before the Commission for in-principle approval of the proposal alongwith a DPR giving complete scope, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule of completion and other details as required by the Commission and the Commission while fixing their tariffs, shall be guided by the tariff norms specified in the Regulations based on actual capital cost subsequent to the completion of the RMU activities and such other factors considered relevant by the Commission;

(e) Any other new renewable energy technologies approved by MNRE.

Provided that the Commission while determining the Project Specific Tariff shall be guided by the provisions of Chapter 4 & 5 of these Regulations for technologies specifies therein."

Stakeholders Comments/Suggestions

1.14.1 UREDA requested the Commission to provide feed-in-tariff for the solar power plants and other RE plants installed under net metering arrangement.

1.14.2 UJVN Ltd. commented that keeping in view of the market rates, the Commission should make provision for option of seeking project specific tariff for Solar plants also.

1.14.3 UJVN Ltd. submitted that while carrying out RMU, several equipments are not replaced in view of the condition of a particular item and similarly depending on conditions of structure civil work may also not be required to be taken up in the scope

of RMU works of the projects keeping in view the cost effectiveness and quantum of investment. However, after certain period say 10-15 year (post RMU) the need of carrying out civil works or replacement of items which were not replaced during RMU of plant may arise due to ageing or technological obsolescence.

Keeping in view the above, the provision of such additional capital expenditure may kindly be made in regulations and additional tariff may be determined at that time.

Commission's View

1.14.4 With regard to request of UREDA, it is pertinent to mention that the Commission in accordance with the provisions of RE Regulations determines the generic tariff on annual basis for solar energy based power plants which should be considered as feed-in-tariff for the solar power plants installed under Solar Policy, 2023. Further, with regard to the comments of the stakeholder on project specific tariff for Solar Power Plants, it is pertinent to mention that Ministry of New and Renewable Energy, GoI has issued various guidelines and frameworks for the determination of solar plant tariffs through competitive bidding. These guidelines provide the framework for conducting transparent and competitive bidding processes for solar projects in the country. Therefore, the Commission does not find it prudent to allow project specific tariff for Solar Energy based power plants.

1.14.5 With regard to the concern raised by UJVN Ltd., it is to be noted that 70% of GFA is used for repayment of normative loan while balance 20% excluding 10% scrap value, remains with the developer. Subsequently, 20% of RMU cost remains with the developer after repaying the loan with depreciation. Accordingly, this retained depreciation amount can be utilised by the developer for incurring additional capital expenditure post RMU for replacement of items which were not replaced during RMU. Further, the developer can also save money through efficiency and utilise the said for additional capitalisation as and when required, as it would not be possible to revisit the tariffs for so many plants after every 15 years.

1.15 Sub-regulation (2) of Regulation 14, i.e. Petition and proceedings for determination of Project Specific Tariff

The Commission had proposed as follows in the Draft Regulations:

"(2) Till fixation of final tariff, a RE Based Generating Station or Co-generating Station may either accept the generic tariff as provisional tariff or make an application for determination of provisional tariff in advance of the anticipated date of completion of the project based on the capital expenditure actually incurred up to the date of making the application or a date prior to making of the application, duly audited and certified by the statutory auditors. The provisional tariff as may be determined by the Commission may be charged from the Commercial Operation Date (CoD) of the respective unit of the generating station.

Provided that the RE Based Generating Stations and Co-generating Stations shall be required to make a fresh application for determination of final tariff based on actual capital expenditure incurred up to the date of commercial operation or commissioning of the generating station within 18 months from the actual CoD."

Stakeholders Comments/Suggestions

1.15.1 Him Urja Pvt. Ltd. submitted that draft Regulation specifies that provisional tariff may be determined based on the actual expenditure incurred upto the date of making the application. The financial institutions are putting up conditions that the provisional tariff should be known to them before more than certain percentage of loan is disbursed. The developer has to move the application to the Commission after getting the expenditure audited when the actual expenditure incurred may be about 30% of the project cost.

Therefore, it is requested that the Commission may determine provisional tariff based on the Capital cost in DPR, Cost taken by financial institution, cost approved by concerned government, cost of other projects being approved by the Commission and all other material facts necessary for determination of the provisional tariff. The Provisional tariff may be determined by the Commission any time after financial closure of the project. This will facilitate the SHPs in getting finances of the project.

Commission's View

1.15.2 The Commission agrees that the financial institutions sanction the loan amount based on the expected revenue from the project. Therefore, the Commission allows the developers to approach the Commission for determination of provisional tariff based on the actual expenditure incurred upto the date of making an application. Initially, the project developers infuse equity and based on the same, financial institutions disburse

proportionate loan amount. However, it is worth mentioning that the Commission provides two option to the developers, either to approach Commission based on the actual expenditure for determination of provisional tariff or the developer can accept generic tariff as provisional tariff till the fixation of final tariff. Accordingly, the developer may accept generic tariff, if the actual expenditure incurred are not sufficient to get a suitable provisional tariff. Accordingly, the request of the stakeholder w.r.t determination of the provisional tariff based on the Capital cost in DPR, Cost taken by financial institution, cost approved by concerned government, cost of other projects being approved by the Commission is not proper. The Electricity Act, 2003 provides for determination of cost-plus tariff and cost must be actually incurred costs and not projected costs. Hence, the request of the stakeholder in this regard is rejected.

1.16 Sub-regulation (4) & (7) of Regulation 14, i.e. Tariff Structure.

The Commission had proposed as follows in the draft Regulations:

"(1) The tariff for renewable energy technologies shall be single part tariff (in Rs./kWh) and ex-bus, i.e. after auxiliary consumption and transformation losses at the interconnection point as defined in Regulation 3(1)(xxxiv).

Provided that for renewable energy technologies having fuel cost component, like biomass/biogas/biomass gasifier power projects, Refuse derived fuel and non-fossil fuel based cogeneration, tariff with two components, namely fixed cost component and fuel cost component, shall be determined.

(2) The Tariff shall consist of the following fixed cost components:

(a) Return on equity;

(b) Interest on loan capital;

(c) Depreciation;

(d) Interest on working capital;

(e) Operation and maintenance expenses;

(3) The generic tariff is being determined separately for each kind of renewable source and for each type of renewable technology for which norms have been specified in these Regulations.

(4) The generic tariff is based on normative parameters as per the norms specified in these Regulations for each type of source and the year of commissioning of the plant. Tariff in respect of a RE Based Generating Stations and Co-generating Stations under these Regulations shall be applicable for the whole generating station.

Provided that the generic tariff for supply of electricity from the plant, having more than one unit commissioned during currency of different control period, shall be based on weighted average of the tariffs specified under different Regulations for the total capacity of the plant.

(5) The levelised tariffs for the useful life of the project shall be specified for the RE Based Generating Stations and Co-generating Stations.

Provided that for renewable energy technologies having tariff (in Rs./kWh) with two components, for fixed cost component tariff may be determined on levelised basis considering the year of commissioning of the project while the fuel cost component shall be specified on year of operation basis.

(6) For the purpose of levelised tariff computation, the discount factor equivalent to weighted average cost of capital shall be considered. For determination of weighted average cost of capital, the pre-tax return on equity would be adjusted for tax at the applicable rates.

(7) The tariffs determined under these regulations being levelised, any shortfall or gain due to performance or other reasons is to be borne/retained by the RE Based Generating Stations and Co-generating Stations and no true up of any parameter, including additional capitalisation for whatsoever reasons, shall be taken up during the validity of the tariff for projects opting generic tariff or those opting project specific tariff. The tariff for supply of electricity between the period of synchronization and the commissioning of the unit (Infirm Power) shall be equal to 50% of fixed cost component of levelised generic tariff for the useful life of the project. However, renewable energy technologies having fuel cost component, like biomass/biogas/biomass gasfier power projects, Refuse derived fuel and non-fossil fuel based cogeneration, shall also be entitled to get the fuel cost component of tariff for that year in addition to 50% of the levelised generic tariff:

Provided that where project specific tariff is being determined the revenue generated from infirm power shall be used to reduce the capital cost of the project after giving credit for cost of fuel consumed, wherever applicable;

Provided that any additional expenditure of capital nature which becomes necessary for restoration works only on account of damages caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company), after prudence check by the Commission, shall be allowed as additional capitalisation after duly adjusting the proceeds from any insurance scheme for all the generating stations covered under these Regulations. For additional capital expenditure admitted, as above, appropriate adjustment in tariff shall be allowed for balance life of that project based on the norms given in Chapters 4 & 5 of the Regulations;

Provided that additional capitalisation on this account would only be allowed if appropriate and adequate insurance cover was available for the generating station at the time of occurrence of natural calamities referred to above. The generating company shall intimate the Commission and Distribution Licensee within seven days from the occurrence of any such force majeure event resulting into shut down of plant. The Commission may in such case direct the distribution licensee and State nodal agency to visit the damaged plant and assess the nature & type of damages and restoration works required in coordination with the generator/developer."

Stakeholders Comments/Suggestions

1.16.1 Akshay Urja Association submitted that the billing should be allowed to the Solar PV plant according to the inverter based performance ratio achievement. Further, some provision must be incorporated so that RE generating station (solar) may seek reassessment of generic tariff in case the generating station is not able to meet the financial and normative parameters considered for single tariff calculation.

Further, change in performance as well as financial outputs due to reasons attributable to discom such as grid non connectivity or curtailment or damage to plant due to natural calamities would negatively affect the financial parameters of the project.

1.16.2 Uttar Bharat Hydro Pvt. Ltd. submitted that when SHPs are damaged by force majeure events, in addition to the additional capital requirement to restore the project, they also suffer loss of revenue, i.e. they do not recover the AFC they are entitled to, during the period of subsistence of the force majeure event, even though fixed costs are continued to be incurred. The non-recovery of AFC during the subsistence of the Force Majeure

even places an undue financial burden on the SHP since it continues to incur various fixed charges and debt even though it has no revenues coming in.

Force majeure clause in PPA approved by the Commission and Implementation Agreement already provides for extension of the time of the agreement, equal to the time period during which the force majeure event subsists, i.e. the period during which the SHP is restored. Under the circumstance, it is submitted that suitable clarification may be provided in the regulations.

Commission's View

1.16.3 With regard to the request of the stakeholder, it is pertinent to mention that Generic tariffs are designed to provide a standardized pricing structure that ensures cost control and stability for both consumers and utility providers. Allowing additional capitalization could result in increased costs, which may not align with the objectives of a generic tariff. Further, in accordance with provision of Regulation 12 of these Regulations, benchmark capital cost of the solar power plants shall be reviewed annually. Therefore, reassessment of generic tariff, in case of failure to meet financial and normative parameters will defeat the purpose of determination of levelised tariff to be recovered during the life of the project. Besides tariffs for solar determined by the Commission each year is a ceiling tariffs and solar projects are allotted based on competitive bidding conducted by UREDA hence, reviewing the financial as well as performance parameters would defeat the purpose of such bidding.

Therefore, the developers are advised to bid the rates taking in consideration all the financial and normative paraments and should try to meet the normative CUF which is already lower than that specified in other States. The developers should endeavour to recover the entire cost based on the CUF and other paraments specified by the Commission.

1.16.4 With regard to comment of Uttara Bharat Hydro Power Pvt. Ltd. on revenue loss due to non-recovery of AFC when SHPs are damaged, it is pertinent to mention that the Commission determines single part availability based tariff wherein the payment by distribution licensee is made on the electricity supplied by generating station. Insurance company provides insurance against the revenue loss along with the

insurance of the power plant. In general practice, generating stations should get the insurance to cover revenue losses as well as loss of assets/project.

Further with regard to clarification in the regulation regarding extension of useful life due to stoppage of plant because of any force majeure event, the Commission in the current regulation while defining the 'Useful Life' of the project inserted a provision to cater to the life in case stoppage of plant due to force majeure event which specifies as follows:

> *"Provided that where the operation of a plant was stopped due to a force majeure event, the life of the plant shall be extended by the period of such stoppage and accordingly, the PPA shall be extended."*

This will extend the life of the project and will compensate to some extent for the loss of revenue incurred by the generator during force majeure event.

1.17 Sub-Regulation (1) of Regulation 16, i.e. Financial Principles- Capital Cost.

The Commission had proposed as follows in the draft Regulations:

"(1) ***Capital Cost***

(a) The norms for the Capital Cost as specified in the subsequent technology specific provisions in Chapter 5 shall include the expenditure incurred or projected to be incurred, initial spares, interest during construction (IDC) and financing charges, incidental expenditure during construction (IEDC), any gain or loss on account of foreign exchange risk variation during construction on loans arrived in the manner specified in sub-regulation (2) below upto the date of commercial operation or commissioning of the project, as admitted by the Commission after prudence check. The capital cost shall also include the expenditure incurred or projected to be incurred towards the switchyard etc. upto the point of interconnection (i.e. it does not include cost of dedicated line and associated equipment from point of interconnection upto the nearest sub-station of transmission or distribution licensee to which generating station is connected).

(b) In case of additional costs on account of IDC, Finance charges and IEDC due to delay in achieving the Schedule CoD, the generating company shall be required to furnish detailed justification with supporting documents for such delay including the details of IDC, Finance Charges and IEDC during the period of delay and liquidated damages recovered or recoverable corresponding to the delay:

Provided that if the delay is not attributable to the generating company and is due to uncontrollable factors, such expenditures may be allowed after due prudence check;

Provided further that where the delay is attributable to an agency or contractor or supplier engaged by the generating company, the liquidated damages recovered from such agency or contractor or supplier shall be kept in view while computing the capital cost.

(c) In case individual generating company opts to construct, at its own cost, the evacuation infrastructure from point of inter-connection to the nearest sub-station of transmission or distribution licensee to which the generating station is connected, it shall be allowed a normative levelised tariff of 5 paise/unit over and above the generic tariff determined at the point of inter-connection. However, in case of a solar generating company a normative levelised tariff of 12 paise/unit over and above the generic tariff determined at the point of inter-connection shall be allowed. The said normative tariff for evacuation infrastructure has been arrived at considering the cost of normative line length of 10 kms. (including cost of terminal equipments) for different capacities of generating stations as per normative cost given below:

(i) Upto 3MW, 11 kV S/C	*- Rs. 44 lakh*
(ii) Above 3MW and upto 13 MW, 33 kV S/C	*- Rs. 85 lakh*
(iii) Above 13 MW and upto 25 MW, 33 kV 2 x S/C or DC	*- Rs. 170 lakh*

Provided that in case more than one generating stations construct, at its own cost, a common evacuation infrastructure including pooling switching station, in accordance with Regulation 41 of these Regulations, for evacuation of power of their generation, then the above normative levelised tariff shall be apportioned among all such generating stations on the basis of their installed capacity.

(d) The distribution licensee will have to pay the additional tariff, specified above to, the generating company(s) provided ownership of such lines remains with such generating company(s). However, the first option shall be given to the distribution licensee for either buying the evacuation infrastructure of the generating company(s) at the depreciated cost indicated in the latest audited accounts of the said company(s), or pay additional tariff as per these regulations.

Provided that the distribution licensee will be required to exercise the option within one year from the date of commissioning of the generating station(s)."

Stakeholders Comments/Suggestions

1.17.1 UPCL requested to consider the provision for calculation of allowed normative levelized tariff on pro-rata basis in cases where partial length of the feeder are constructed by the generator(s).

1.17.2 UJVN Ltd. submitted that no clarity has been provided in the Regulations for additional tariff over and above generic tariff if the project developer is constructing transmission line of more than 10 km. It requested that additional tariff for construction of transmission line more than 10 km may also be indicated.

Further, in case of project specific tariff cost of power evacuation infrastructure should be allowed on actual basis and not on normative cost basis.

1.17.3 Akshay Urja Association submitted that the cost of 11 kV line should be Rs. 15 Lakh/km and cost of 33 kV line should range between Rs. 18.50 Lakh/km to Rs. 40 Lakh/km. These rates are as per UPCL's cost estimation. Based on these cost, additional tariff for Solar Power plants works out to 50 paisa/kWh.

1.17.4 M/s Siyangad Hydro P Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that SHPs generators should have an option to choose just 13 year period PPA.

1.17.5 M/s Chamoli Hydro Power P. Ltd., M/s Birahi Ganga Hydro Power Ltd., M/s Himalaya Hydro Pvt. Ltd. and All India Renewable Energy Protection Association submitted that the Commission had first time provided that the RE generators can construct their own evacuation infrastructure at a cost of 5 paisa/kWh in 2010. The cost of material has increased. Supply Code Regulations specify a cost of Rs. 1.25 Crore for a 10 km 33 kV line as against Rs. 85 Lakh specified in draft Regulations. Further, the Commission has approved total cost of Rs. 6.31 Crore for 33 kV lines of length 24.3 km which means the average cost of 33 kV line is about of Rs. 26 lakh/km. The Stakeholders submitted that this cost was incurred in year 2020 which is three years ago and if the same is escalated by 5.72%p.a. the cost today would be Rs. 30.85 Lakh/km. However, considering the actual input material and labour cost, 1 km length of 33 kV transmission line would at least cost Rs. 35 Lakh/km.

The stakeholders requested to specify normative evacuation infrastructure cost that takes into account the increase in the input costs over the past 13 year.

1.17.6 Uttar Bharat Hydro Power Pvt. Ltd. submitted that there has been no increase in the normative cost in the last 10 years. The actual cost of these transmission circuits is substantially higher and the same must be taken into account in order to compensate the IPP for construction of the same.

Commission's View

1.17.7 With regard to UJVN Ltd. request for allowing evacuation infrastructure cost on actual basis in case of project specific tariff, it is pertinent to mention that capital cost actually incurred by the developers is considered for determination of tariff where the developer opt for Project Specific Tariff and the actual capital cost incurred is inclusive of all the expenditures pertaining to development of hydro power plant and evacuation infrastructure. Further, clause (c) of Regulation 16(1) of draft regulations explicitly mentions that SHP shall be allowed normative tariff over and above the generic tariff. It is understood from the above clause that developers opting for generic tariff, shall only be eligible for additional normative tariff if developer opts to construct the evacuation infrastructure from the point of inter-connection to the nearest sub-station of distribution licensee or transmission licensee to which the generating station is connected at its own cost.

1.17.8 Further, with regard to the comments of the stakeholders regarding escalation for inflation on the assumed benchmark Capital Costs, the Commission is of the view that because of indexation, the generators would be inclined to delay the commissioning of their projects so as to take benefit of higher tariffs and, therefore, provision of escalation of capital cost has not been incorporated. Moreover, the SHP generator has an option to opt for determination of project specific levelised tariff. Accordingly, proposal of escalation of capital cost is not acceptable. Hence, no change is being made in the Regulation in this regard.

1.17.9 With respect to the request of the stakeholder for the option to choose PPA for a period of 13 year, the Commission is of the view that the majority of the costs are recovered in initial 15 years by way of Depreciation and interest on loan and hence, the tariff becomes front loaded. Therefore, it will be injustice with the consumers of the State to have a PPA only for the period where majority of the cost are recovered from the consumers and be deprived of the cheaper power in the later years. The levelised tariffs are determined based on the fixed cost to be recovered from the consumers of

the State for the entire useful life of the plant and, accordingly, the benefit of the economic useful life of the plant should also be provided to the consumers of the State. Further, with regard to inflation in rupee rates, it is to be noted that the future tariffs are derived considering suitable escalation in the O&M cost on year-on-year basis and then levelised tariff is determined by the Commission based on the time value of money. Hence, inflation will not have any impact on the real tariff. In view of the above discussion, no change is required in the said Regulation.

1.17.10 Many of the stakeholders raised the issue that cost of transmission line has increased. The Commission had first time provided the RE generators to construct their own evacuation infrastructure at a cost of 5 paisa/kWh in 2010. The cost of material has increased. Supply Code Regulations specify a cost of Rs. 1.25 Crore for a 10 km 33 kV line as against Rs. 85 Lakh specified in draft Regulations. The Commissioned agrees with the comments of the Stakeholders and decides to revise the cost of evacuation infrastructure. The Commission has considered the base cost of the transmission line as specified under State Grid Code, 2020 which is as follows:

(i) Upto 3MW, 11 kV S/C	*- Rs. 8.00 Lakh/km*
(ii) Above 3MW and upto 13 MW, 33 kV S/C	*- Rs. 12.50 Lakh/km*
(iii) *Above 13 MW and upto 25 MW, 33 kV 2 x S/C or DC*	*- Rs. 25.00 Lakh/km*

Accordingly, if a generating station opts to construct the evacuation infrastructure from point of inter-connection to the nearest sub-station of transmission or distribution licensee to which the generating station is connected, it shall be allowed a normative levelised tariff specified in the Regulations over and above the generic tariff determined at the point of inter-connection. However, in case of a solar generating company a normative levelised tariff specified in the Regulations over and above the generic tariff determined at the point of inter-connection shall be allowed.

1.17.11 During the proceedings in the matter, it was brought to the notice of the Commission that in several cases, UPCL is paying 5 paisa/kWh or 12 Paisa/kWh as the case may be even where transmission line has not been constructed by generator till the sub-station of UPCL. In the matter, the Commission is of the view that per unit rate may be recovered based on proportionate line constructed by the developer.

Accordingly, based on the above discussions, final regulation shall be read as follows:

"(1) ***Capital Cost***

(a) The norms for the Capital Cost as specified in the subsequent technology specific provisions in Chapter 5 shall include the expenditure incurred or projected to be incurred, initial spares, interest during construction (IDC) and financing charges, incidental expenditure during construction (IEDC), any gain or loss on account of foreign exchange risk variation during construction on loans arrived in the manner specified in sub-regulation (2) below upto the date of commercial operation or commissioning of the project, as admitted by the Commission after prudence check. The capital cost shall also include the expenditure incurred or projected to be incurred towards the switchyard etc. upto the point of interconnection (i.e. it does not include cost of dedicated line and associated equipment from point of interconnection upto the nearest sub-station of transmission or distribution licensee to which generating station is connected).

(b) In case of additional costs on account of IDC, Finance charges and IEDC due to delay in achieving the Schedule CoD, the generating company shall be required to furnish detailed justification with supporting documents for such delay including the details of IDC, Finance Charges and IEDC during the period of delay and liquidated damages recovered or recoverable corresponding to the delay:

Provided that if the delay is not attributable to the generating company and is due to uncontrollable factors, such expenditures may be allowed after due prudence check;

Provided further that where the delay is attributable to an agency or contractor or supplier engaged by the generating company, the liquidated damages recovered from such agency or contractor or supplier shall be kept in view while computing the capital cost.

(c) In case individual generating company opts to construct, at its own cost, the evacuation infrastructure from point of inter-connection to the nearest sub-station of transmission or distribution licensee to which the generating station is connected, it shall be allowed a normative levelised tariff of 7 paise/unit over and above the generic tariff determined at the point of inter-connection. However, in case of a solar generating company a normative levelised tariff of 14 paise/unit over and above the generic tariff determined at the point of inter-connection shall be allowed. The said normative tariff for evacuation infrastructure has been arrived at considering the cost of line and equipments specified under UERC (The Electricity Supply code, Release of New Connections and Related matters) Regulations, 2020 as per normative cost given below:

(i) Upto 3MW, 11 kV S/C - Rs. 8.00 lakh/km

(ii) Above 3MW and upto 13 MW, 33 kV S/C - Rs. 12.50 lakh/km

(iii) Above 13 MW and upto 25 MW, 33 kV 2 x S/C or DC - Rs. 170 lakh/km

Provided that in case more than one generating stations construct, at its own cost, a common evacuation infrastructure including pooling switching station, in accordance with Regulation 43 of these Regulations, for evacuation of power of their generation, then the above normative levelised tariff shall be apportioned among all such generating stations on the basis of their installed capacity.

Provided further that where the transmission line from inter-connection point to nearest sub-station is partly constructed by distribution licensee and partly by generating company, normative levelised tariff of 7 paise/kWh or 14 paisa/kWh, as the case may be, shall be as per length of the line constructed by the generating company in proportion to the overall length of the line i.e. from inter-connection point to sub-station of the distribution/transmission licensee..

(d) The distribution licensee will have to pay the additional tariff, specified above to, the generating company(s) provided ownership of such lines remains with such generating company(s). However, the first option shall be given to the distribution licensee for either buying the evacuation infrastructure of the generating company(s) at the depreciated cost indicated in the latest audited accounts of the said company(s), or pay additional tariff as per these regulations.

Provided that the distribution licensee will be required to exercise the option within one year from the date of commissioning of the generating station(s)."

1.18 Sub-regulation (2) of Regulation 17, i.e. Interest on Loan

The Commission had proposed as follows in the draft Regulations:

"(2) For the purpose of computation of generic tariff, the normative interest rate shall be considered as average State Bank of India (SBI) Marginal Cost of Funds based Lending Rate (MCLR) (one year tenor) prevalent during the last available six months plus 300 basis points.

For the purpose of computation of project specific tariff, interest rate shall be considered as lower of the actual interest payable to the financial institutions or the average State Bank of India (SBI) Marginal Cost of Funds based Lending Rate (MCLR) (one year tenor) prevalent during the last available six months from the date of Petition plus 300 basis points

Stakeholders Comments/Suggestions

1.18.1 Akshay Urja Association submitted that currently, the landed interest rates on the collateral-based loans is around 11% while for the loans under Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) is around 14.50% to 15%.

1.18.2 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that SHPs in Uttarakhand have had difficulty in repaying loans due to many factors and natural calamities and FIs are unlikely to offer loan at less than MCLR+400 basis points.

1.18.3 Him Urja Hydro Power Pvt. Ltd. submitted that developers opting for project specific tariff has been adversely affected by considering higher of actual repayment of loan & normative repayment and considering lower of actual loan interest and normative loan. Hence, actual interest payment should be considered with actual tenure. Further, repayment tenure should be considered on actual basis for developers opting for project specific tariff.

Commission's View

1.18.4 Akshay Urja Association submitted that the landed interest rate on collateral based loans are around 11%. Further, some of the Stakeholders submitted that SHPs in Uttarakhand have difficulty in repaying loans due to many factors and natural calamities and FIs are unlikely to offer loan at less than MCLR+400 points.

The Commission agrees with the comments of the stakeholders that frequent natural calamities and other factors affects the operations as well as the financials of the SHPs which impacts the repaying power of the developers. Taking cognizance of the above factors, the Commission had increased the spread of 200 basis points by additional 100 basis points while finalising the RE Regulations, 2018 which is already higher than the normative interest rate specified by CERC and SERCs of neighbouring states. Hence, the Commission does not find it prudent to increase the spread by 100 basis points once again.

1.18.5 With regard to comments of M/s Him Urja Hydro Power Pvt. Ltd., it is pertinent to mention that in the draft Regulations for projects opting for project specific tariffs depreciation has been spread over considering loan tenure equivalent to 15 years, however, for calculating interest on loans repayment has been considered equal to the

depreciation or actual repayments whichever is higher which will impact the developer whose loan tenure would be less than 15 years, hence, on extra repayments considered it does not get extra depreciation which is fixed at 15 year tenure which is not so in the case of projects opting for generic tariff where loan repayment has been considered as equal to depreciation. Thus, to remove this disparity the Commission has kept the provisions of loan repayment same for both projects opting for generic tariffs and those opting for project specific tariffs, where repayment shall be considered equal to the depreciation allowed.

1.19 Sub-regulation (2) of Regulation 19, i.e. Return on Equity.

The Commission had proposed as follows in the draft Regulations:

*"(1) The value base for the equity shall be as determined under Regulation 16**Error! Reference s ource not found.**.*

(2) The normative Return on Equity (Post tax) shall be 16% for the Renewable energy source based power projects. The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternative Tax (MAT) rate for the first 15 years of the Tariff Period and by the latest available notified Corporate Tax rate for the remaining Tariff Period to work out the pre-tax RoE."

Stakeholders Comments/Suggestions

1.19.1 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that for SHP's RoE should be 17% post tax. The risk for SHP developers has increased during this period due to many extraneous factors and natural calamities that have adversely affected the SHP sectors.

Commission's Viewg

1.19.2 Considering the risk free return of 7% and market risk premium of 700 basis points over the prevailing average G-Sec rates prevalent during the last available six months of the relevant year of the Control Period for the determination of tariff, the RoE allowed of 16% appears adequate. Besides, the Commission has also taken cognizance of the fact that the risk of the developers has increased in the State of Uttarakhand as compared to other States and accordingly, has decided not to modify the RoE specified in the draft Regulations. Therefore, the request of the Stakeholders is rejected.

1.20 Regulation 23, i.e. Rebate

The Commission had proposed as follows in the Draft Regulations:

"Rebate

For payment of bills of the generating company through any mode within the specified period below, a rebate shall be allowed to the distribution licensee as follows:

No. of days from the date of presentation of bill within which payment is credited in generating company account	***Applicable Rebate (%)***
Within 7 days	*1.65*
From 8th day to 15th day	*1.50*
From 16th day to 23rd day	*1.35*
From 24th day to 30th day	*1.25*

Explanation: The number of days shall be counted consecutively without considering any holiday. However, in case the last day is official holiday, last day for the purpose of rebate shall be construed as the immediate succeeding working day."

Stakeholders Comments/Suggestions

1.20.1 Akshay Urja Association submitted that UPCL is taking at least 1% rebate for the payment done between 40-45 days which is a significant loss in revenue of RE generator. The same needs to be considered in tariff. Further, this clause is detrimental to the interest of the developers as all developers are MSME and rules for purchase from MSME should be taken into account. The MSME developers have suppled goods in the previous month and subsequently granting rebate to the purchase for making payment in next month is not tenable. Clause of rebase should be removed as it is ultra-virile. The Stakeholder also submitted that the practice of rebate is also creating discrepancy in financial accounting of developers as actual billing amount and amount paid by UPCL is different and not getting settled in books.

1.20.2 Mr. Chankrakant Rawat submitted that Meter reading, JMR generation, verification, approval and finally submission of bills by the developers is taking more than 30 days which leads to delay in submission of invoice and thereafter payment. It is requested that strict timelines at the cost of penalty are issued to UPCL for metering, JMR generation and approval so that billing is expedited for developers.

1.20.3 UREDA submitted that to gain to gain investors' confidence, the Solar Policy has suggested creating an ESCROW account or provide letter of credit to developers which

can be pledged as guarantees to developer on behalf of the buyers. This provision may also be included.

Commission's View

1.20.4 With regard to comment of Akshay Urja Association regarding deduction of 1% rebate by UPCL even after elapse of 30 days, it is pertinent to mention that no such issue has been brough before the Commission in the past. The Commission is surprised to know that the Stakeholder, representative of developers of the States, has not raised the issue ever. Moreover, if the generator receives payment in time by offering some rebate to UPCL, it will save its working capital requirement and interest thereon which has been allowed as cost in the generic tariff so worked out, and the same will offset the impact of rebate passed on to UPCL.

1.20.5 Further, with regard to the comment of Sh Chandrakant Rawat, the Commission directs the distribution licensee that Joint Meter Reading should be done within 5 working days from the last date of billing cycle. Further, within next three days of receipt of monthly bill, MRI documents alongwith JMR at divisional level, the concerned division shall ensure delivery of the same to UPCL at the office of Chief Engineer (Commercial) within next 5 working days. However, the bill date shall be construed as the date on which the bill is received in the divisional office of UPCL and accordingly, due date shall be calculated.

1.20.6 With reference to period of payment towards electricity supplied by the developers, it is worth mentioning that MSME specifies that the payment by the buyer has to be made before 15 days of the date of delivery and if there is any agreement this period should not exceed 45 days. Accordingly, distribution licensee can make a payment on the 45th day from the receipt of bill.

1.20.7 To encourage the distribution licensee to make payment before the 45th day from the receipt of the bill, rebate is allowed and the same decreases with the lapse of time. Further, the distribution licensee shall not be eligible for any kind of rebate if the payment is made after 30th day from the bill date.

1.20.8 With respect to the comment of UREDA regarding opening of escrow account, considering the number of solar developers in the State, it would be an herculean task for UPCL to manage so many accounts alongwith reconciling the same. Hence, this

comment is rejected.

1.20.9 To ensure the payment security to the small developers, the Commission decides to make necessary changes in the draft Regulation w.r.t. letter of credit. Accordingly, final regulation shall be read as follows:

"For payment of bills of the generating company through Letter of Credit or any other mode within the specified period below, a rebate shall be allowed to the distribution licensee as follows:

No. of days from the date of presentation of bill within which payment is credited in generating company account	***Applicable Rebate (%)***
Within 7 days	*1.65*
From 8th day to 15th day	*1.50*
From 16th day to 23rd day	*1.35*
From 24th day to 30th day	*1.25*

"

1.21 1st Proviso of Regulation 25, i.e. Subsidy or incentive by the Central/State Government.

In the draft regulation, the Commission had proposed the 1st proviso as follows:

"Provided that only 75% of the capital subsidy for the financial year of commissioning as per applicable scheme of MNRE shall be considered for tariff determination.

Stakeholders Comments/Suggestions

1.21.1 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that the developers should be allowed to be retained by SHP developers as equity to compensate for the high risks and hurdles faced in implementation SHP specifically in Uttarakhand.

Commission's View

1.21.2 The Commission is of the view that the subsidy is provided to the renewable sources to make their tariff viable so that they can compete in the market and, hence, it is imperative to adjust the capital subsidy available to them for enabling their competitiveness in the market. In the existing Regulations, the developer has been allowed to retain 25% of the capital subsidy as an incentive and also to compensate it for the time and efforts expended by it on getting the subsidy released from the Government. Accordingly, no change is required in the said Regulation.

1.22 Regulation 25, i.e. Taxes and Duties.

In the draft regulation, the Commission had proposed as follows:

"Tariff determined under these regulations shall be including direct taxes on income but exclusive of other taxes and duties as may be levied by the appropriate Government.

Provided that the taxes, duties and cess levied by the appropriate Government other than direct taxes shall be allowed as pass through on actual incurred basis."

Stakeholders Comments/Suggestions

1.22.1 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that any cess or other charges on water levied by State/Centre for hydropower generation or any kind of cess/fees duties should be reimbursed by licensee as a pass though.

Commission's View

1.22.2 The Commission has already specified in the aforesaid Regulation that all taxes levied by the Central/State Government shall be allowed as pass through. Accordingly, no change is required in the aforesaid Regulation.

1.23 Regulation 28, i.e. Applicability of Merit Order to RE Sources

The Commission had proposed as follows in the draft Regulations:

"Since RE Sources are dependent on vagaries of nature and are of small capacities, the principle of merit order dispatch/purchase shall not be applicable to supply of power from such sources to the distribution licensee or local rural grids within the State, i.e. they shall be treated as must run stations."

Stakeholders Comments/Suggestions

1.23.1 UREDA submitted that State Load Despatch Centre must also regularly maintain the data on the quantum and reasoning behind the curtailment of RE power, if any, in a transparent manner.

Commission's View

1.23.2 It is pertinent to mention that renewable power plants are must run plants and are not curtailed by SLDC. Further, it has been observed that no energy schedule is submitted by the RE based power plants to SLDC. Accordingly, the Commission does not find it prudent to direct SLDC to regularly maintain the data in the absence of submission of

details by the RE Generators. UREDA, being a nodal agency for development of renewable power plant in Uttarakhand, is responsible to inform the generators regarding submission of schedule of energy to SLDC in accordance with the provisions of UERC DSM Regulations

1.24 Regulation 29, i.e. Technology specific parameters for Small Hydro Generating Plants.

In the draft regulation, Regulation 16(8) specifies as under:

"The technology specific parameters for determination of generic tariffs for Small Hydro Generating Stations commissioned or to be commissioned on or after 01.04.2023 of these regulations shall be as follows:

Project Size	***Capital Cost***	***O&M Expenses for year of commissioning***	***Capacity Utilization Factor****	***Auxiliary Consumption***
	(Rs. Lakh/ MW)	***(Rs. Lakh/MW)***	***(%)***	***(%)***
Upto 5 MW	*1150*	*59.43*	*Generic Tariff- 40%* *Project Specific- 45%*	*1%*
> 5 MW & upto 15 MW	*1125*	*53.33*		
> 15 MW & upto 25 MW	*1100*	*47.54*		

** for the recovery of Annual Fixed Charges.*

NOTE: For the purpose of this Regulation, normative CUF is based on Energy Sent Out at interconnection point and for tariff purposes energy net of free power to the home State, if any, committed by the developer shall be factored. For generic tariff determination, home State share has been taken as 18% from 16th year onwards."

Stakeholders Comments/Suggestions

1.24.1 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that proposed capital cost is very less. It should be enhanced to Rs. 1500 Lakh, Rs. 1475 Lakh and Rs. 1450 Lakh for plants having capacity upto 5 MW, 6 MW to 15 MW and 16 MW to 25 MW respectively. All the inputs have increased. Benchmark cost may be obtained from AHEC-IIT Roorkee and IREDA. The Stakeholders also submitted that Annual escalation for inflation on the assumed benchmark capital costs for levelized generic tariff for SHPs may be allowed. Capital cost for SHPs having COD during FY 2027-28 will be higher than SHPs having COD in FY 2023-24.

The Stakeholders also requested to allow 10% higher generic capital cost and 10% higher levelized tariff for SHPs located at high altitudes of over 2000 m, due to

increased labour, material, construction and transportation costs. SHPs in Uttarakhand are located in high seismic zones and also subject to natural calamities such as earthquakes, cloudburst, floods landslides etc which require to be insured at high insurance premiums. Insurance premium of 1.5% of capital cost should be further added in O&M cost.

Generic tariff may be posted on the website of the Commission. The total average levelized generic tariff recovered at 45% should be allowed even on CUF over 45% as risk for any under recovery of revenue for CUF below 40% is also borne by SHP developers.

1.24.2 M/s Chamoli Hydro Power Pvt. Ltd., M/s Birahi Ganga Hydro Power Ltd., M/s Himalaya Hydro Pvt. Ltd. and All India Renewable Energy Protection Association submitted that due to extremely hilly and difficult terrain in Uttarakhand, the normative capital cost for SHPs would be at least Rs. 14-15 Crore/MW.

The Stakeholders submitted that the Commission has allowed capital cost of Rs. 28.76 Crore for UJVNL's Dunao SHP (1.5 MW) where translates into Rs. 19.17 Crore/MW. Vyasi HEP (120 MW) has a declared capital cost of Rs. 15.80 Crore/MW. Further, cost of reinforcement Steel, MS Steel, Cement, Diesel & Oil, wages has increased which will be more than 5.72% p.a.

1.24.3 M/s Uttar Bharat Hydro Power Pvt. Ltd. submitted that the cost provided for SHPs having capacity above 5 MW and upto 15 MW is very low. It should be around Rs. 15 Crore to Rs. 18 Crore per MW based on terrain, location in mountainous state. Even large hydro projects constructed by NHPC, UJVNL, SJVNL are costing in excess of Rs. 15 Crore/MW.

The Stakeholder also submitted that silt content in the river of Uttarakhand rivers is very high and this is driving up the maintenance costs of electro-mechanical and hydro-mechanical components of the hydro power projects. As such the O&M costs must be adjusted taking into account the ground realities so that the projects remain viable over the course of their useful life of 35 years.

1.24.4 M/s Him Urja Pvt. Ltd. submitted that the Commission had noticed in 2013-14 that the small hydro is not able to achieve the stipulated CUF of 45% due to various reasons. Therefore, the Commission had reduced the CUF for the calculation of generic tariff

from 45% to 40% for recovery of Annual Fixed Charges and consequently determination of generic tariff. However, though the Projects with Project specific tariff also face similar challenges but such benefit of reduction of CUF was not extended for them. Therefore, it is requested to the Commission to extend the benefit to project specific tariff also. The CUF linked to DPR may be dispensed with and same CUF of 40% may be allowed to Project Specific Tariff. The stakeholder submitted that in most of the DPRs the PLF is less than 45% PLF, therefore, unlinking CUF as reported in the DPR is of hardly of any consequence.

The stakeholders also submitted that the Commission may revisit the technical parameters of hydropower projects. The cost of the projects is highly inadequate considering the cost of labour and material. The project Lakhwar Vyasi has accepted the capital of Rs. 18 Crore per MW with O&M Expenses claimed at Rs. 72 Lakh per MW. Normally capital cost of small hydro cost is more than the cost of large projects as also the O&M charges of the small projects is more than large projects. Therefore, the capital cost and O&M charges may also be allowed at a rate more than allowed in the case of Lakhwar Vyasi.

M/s Siyangad Hydro P Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that SHPs in Uttarakhand are located in high seismic zones and also subject to natural calamities such as earthquakes, cloudburst, floods landslides etc which require to be insured at high insurance premiums. Insurance premium of 1.5% of capital cost should be further added in O&M cost.

M/s Chamoli Hydro Power P. Ltd., M/s Birahi Ganga Hydro Power Ltd., M/s Himalaya Hydro Pvt. Ltd. and All India Renewable Energy Protection Association that reinforcement Steel, MS Steel, Cement, Diesel & Oil, wages has increase which will be more than 5.72%. M/s Uttar Bharat Hydro Power P. Ltd. submitted that silt content in the river of Uttarakhand rivers is very high and this is driving up the maintenance costs of electro-mechanical and hydro-mechanical components of the hydro power projects. As such the O&M costs must be adjusted taking into account the ground realities so that the projects remain viable over the course of their useful life of 35 years.

Commission's View

1.24.5 The Commission has specified the normative O&M expenses considering all the necessary expenses, such as expenditure on manpower, repairs, spares, consumables, insurance and overheads which are required for the smooth operation of the plant. Further, the aforesaid components of O&M expenses have direct correlation with the annual inflation indices of varied nature and, hence, the escalation factor is based on the fundamental rationale. Besides, this escalation factor is normative and shall apply for the entire life of the project to cover the situation where in some years the inflation is lower than the escalation factor and in some years the inflation may be more. Accordingly, no change is required in the said Regulation.

1.24.6 With regard to annual escalation in the capital cost, the Commission is of the view that because of indexation, the generators would be inclined to delay the commissioning of their projects so as to take benefit of higher tariffs, accordingly, provision of escalation of capital cost was not incorporated. Moreover, the SHP generator has an option to opt for project specific determination of levelised tariff. Accordingly, if any of the developer feels that the actual capital cost of its SHP would be more than the benchmark capital cost approved by the Commission for determination of generic tariff, it may approach the Commission for determination of project specific tariff. Further, Stakeholders submitted that the capital cost proposed by the Commission is on a lower side as compared to the actual expenses being incurred for Dunao and Vyasi Project. In this regard, it is to be noted that every project has its own unique features which cannot be compared with the other projects, like terrain, discharge, head etc. Capital cost of Vyasi HEP has been referred to by some stakeholders, which is a large hydro project, whose capital cost is yet to be approved by the Commission and, hence, it will be irrational to compare the same for fixation of normative O&M expenses or capital costs.

1.24.7 Further, with regard to different capital cost for hilly terrain, the Commission has gone through the Capital cost specified for SHPs by the State Commissions having majority of hills terrain. Detail of the same is as follows:

Capacity	Himachal Pradesh (Rs. Lakh/MW)*	Arunachal Pradesh (Rs. Lakh/MW)	Assam (Rs. Lakh/MW)#
Upto 500 kW MW	1100	1400	1000
Above 500 kW to below 1 MW		1200	
1 kW to 2 MW		Project Specific	
Above 2 MW to 5 MW	1100		
Above 5 MW to 25 MW	1100		900

**as per Draft Regulations issued on 20.07.2023.*
#*as per RE Regulations 2017*

It can be observed from the above table, that the neighbouring State, i.e. Himachal Pradesh has specified the benchmark capital cost lower than the capital cost proposed by this Commission. Further, HPERC has considered the same capital cost as specified by CERC irrespective of installation capacity. Assam ERC has specified benchmark capital cost as specified by Central Commission vide its repealed RE Regulations, 2017. Further, as per Section 61 of the Act, the State Commissions shall be guided by the principles and methodology specified by the Central Commission for tariff determination. Accordingly, the Commission does not find it prudent to change the capital Costs in the final Regulation.

1.24.8 **During the finalisation of RE Regulations, 2018, with regard to revision of O&M expenses, most of the SHP developers requested the Commission for revision of the O&M expenses and allow O&M expenses equivalent to the Large Hydro Projects. Accordingly, to bring parity between the O&M expenses for LHP and SHP, the Commission had revised the normative O&M expenses. However, now some of the SHP developers have claimed that the O&M expenses of SHPs are more than Large Hydro Plants. However, supporting documents have not been submitted by the stakeholders to validate their claim. Accordingly, the Commission does not find it prudent to review the O&M expenses.**

1.24.9 Further, with regard to the comment of M/s Him Urja Associate regarding equal CUF of 40% for generators opting for generic tariff and generator opting for project specific tariff, since the developers have an option to get their tariff determined based on the actual capital cost, accordingly, their CUF should also be considered to be equal to that provided in the DPR as that would be the close to the actual CUF that can be attained by the project based on the past studies. This dispensation has been allowed since RE Regulations 2010, based on Hon'ble ATE's Judgment dated 18.09.2009 in Techman Infra Ltd. vs. HPERC and others. Hence, no change is warranted in this regard.

1.25 Regulation 34, 35, 36 & Regulation 37, i.e. Technology specific parameters for "Solar PV Power Project", "Canal Bank Solar PV Plants and Canal Top Solar PV Plants", "Solar Thermal Power Project" and "Grid Interactive Roof-top Solar PV Plants (GRPV)/Grid Interactive Small Solar PV Plants (GSPV)".

In the draft regulation, the Commission had proposed Regulation 34, i.e. Solar PV Power Project, as follows:

"Norms for Solar Photovoltaic (PV) power under these Regulations shall be applicable for grid connected PV systems that directly convert solar energy into electricity and are based on the technologies such as crystalline silicon or thin film etc. as may be approved by MNRE. The technology specific parameters for determination of generic tariffs for Solar PV Power Projects commission or to be commissioned on or after 01.04.2023 shall be as follows:

Capital Cost	***O&M Expenses for year of commissioning***	***Capacity Utilization Factor***
(Rs. Lakh/MW)	***(Rs. Lakh/MW)***	
360.47	*16.24*	*19 %*

"

In the draft regulations, the Commission had proposed Regulation 35, i.e. Canal bank Solar PV Plants and Canal top Solar PV Plants, as follows:

"Norms for canal bank Solar PV Power Plants and canal top Solar PV Power Plants under these Regulations shall be applicable for grid connected PV systems that directly convert solar energy into electricity and are based on the technology specific parameters for determination of generic tariffs for such power projects commissioned or to be commissioned on or after 01.04.2023 shall be as follows:

Type Solar PV Plant	***Capital Cost***	***O&M Expenses for year of commissioning***	***Capacity utilization Factor***
	(Rs. Lakh/ MW)	***(Rs. Lakh/MW)***	
Canal Bank Solar PV Plant	*550.00*	*16.24*	*19%*
Canal Top Solar PV Plant	*575.00*		

"

In the draft regulations, the Commission had proposed Regulation 36, i.e. Solar Thermal Power Project, as follows:

"Norms for Solar thermal power under these Regulatihons shall be applicable for Concentrated solar power (CSP) technologies viz. line focusing or point focusing, as may be approved by MNRE, and uses direct sunlight, concentrating it several times to reach higher energy densities and thus higher temperatures whereby the heat generated is used to operate a conventional power cycle to generate electricity. The technology specific parameters for determination of generic tariffs

for Solar Thermal Power Projects commissioned or to be commissioned on or after 01.04.2023 shall be as below:

Capital Cost	*O&M Expenses for year of commissioning*	*Capacity Utilization Factor*	*Auxiliary Consumption*
(Rs. Lakh/MW)	*(Rs. Lakh/MW)*		
1200	*22.14*	*23%*	*10%*

"

In the draft regulation, the Commission had proposed Regulation 37, i.e. Grid interactive rooftop and small solar PV plants, as follows:

"*(1) The technology specific parameters for determination of generic tariff for GRPV and GSPV commissioned or to be commissioned on or after 01.04.2023 shall be as below:*

Project Size	*Capital Cost*	*O&M Expenses for year of commissioning*	*Capacity Utilization Factor*
	(Rs./kW)	*(Rs./kW)*	
Upto 10 kW	*46709*	*2149*	*19 %*
>10 kW & upto 100 kW	*42852*	*1912*	
>100 kW & upto 500 kW	*40207*	*1735*	
>500 kW and upto 1 MW	*39249*	*1624*	

(2) GRPV and GSPV can be installed for injecting power into the distribution system of a licensee by any Eligible consumer:

Provided that the maximum GRPV and GSPV installed capacity at any Eligible Consumer's premises shall be upto a maximum of 100% of consumer's sanctioned load/contract demand;

Provided that in case of Domestic Consumer, such installed capacity of GRPV and GSPV shall be irrespective of consumer's sanctioned load/contract demand;

Provided, the maximum installed capacity of GRPV and GSPV at the premises of eligible consumer shall not be more than 1 MW.

(3) Injection from GRPV and GSPV owned by the Eligible consumer or by third party shall be settled on Net Energy basis at the end of each Billing period.

(4) The tariff, as per tariff orders of the Commission, in respect of the supply of electricity to the consumers by the distribution licensee shall be applicable for the Net Energy supplied by the licensee in a billing period if the supplied energy by the licensee is more than the energy injected by the GSPV and GSPV of the consumer or by third party:

Provided that such eligible consumer shall be exempted from payment of monthly minimum charges/monthly minimum consumption guarantee charges, if any, equivalent to the capacity of GRPV and GSPV installed at the premises;

Provided further that no open access charges including surcharges shall be leviable on such eligible consumers for the captive use of power.

(5) If in a billing period the supplied energy by the licensee is less than the energy injected by the GRPV and GSPV of the consumer/prosumer or the third party, subject to provisions in sub-Regulation (3) above, the licensee would pay to such prosumer at the generic tariff as may be specified by the Commission or at the rate discovered through tariff based bidding process whichever is lower for such Net Energy supplied to it.

(6) Provisions of Deemed Generation shall not be applicable on GRPV and GSPV.

(7) The cumulative capacity of GRPV and/or GSPV which can be connected to a single transformer shall not exceed the capacity of such transformer.

(8) In case any augmentation is required for the purpose of connecting GRPV and/or GSPV, Distribution Licensee shall facilitate and bear the capital expenditure on account of such system strengthening/augmentation upto the interconnection point from nearest sub-station.

(9) Virtual Net Metering Framework shall be applicable for consumers under domestic category, offices of Government /Local Authorities."

Stakeholders Comments/Suggestions

1.25.1 UREDA submitted that due to increase in GST, import duty and exchange rate, the module cost has increased. Therefore, the capital cost of the solar projects may also be increased. UREDA also requested to provide technical paraments and capital cost for agro photovoltaics plants.

Further, UREDA also requested to add the following after first proviso of sub-regulation (2) of Regulation 37:

"Provided that in case of behind the meter captive rooftop solar system (with or without storage) shall be irrespective of consumer's sanctioned load/contracted load"

UREDA also requested to replace sub-regulation (5) with the following:

"If in a billing period the supplied energy by the licensee is less than the energy injected by the GRPV and GSPV of the consumer/prosumer or the third party, subject to provisions in sub-Regulation (3) above, the licensee would pay to such prosumer at the generic tariff as may be specified by the Commission ~~or at the rate discovered through tariff based bidding process whichever is lower~~ for such Net Energy supplied to it."

1.25.2 Akshay Urja Association submitted that module cost has increased due to increase in GST and import duty on cells and modules. Further, circle rate has also gone up. CUF is between 13% to 15% in the state of Uttarakhand. Furthermore, under Mukhyamantri Saur Swarajgar Yojna, GoUk has considered capital cost of Rs. 5 Crore/MW. Due to the above factors, cost of Canal bank and Canal Top Solar PV plants may also increase. The stakeholder also submitted that interest rates have increased significantly, hence, IDC has also increased in same proportion. This hike results in overall increase in the project's capital cost.

The Stakeholder also requested to allow deemed generation provision for GRPV and GSPV in case of interconnection to 11 kV evacuation as they would stand to be classified as must run stations.

1.25.3 UJVN Ltd. submitted that the current average cost of Solar PV plant is Rs. 5 Crore/MW. HPERC has taken project cost of Rs. 4.07 Crore/MW for solar PV plants for FY 2023-24. Design and installation of Solar capacity on DC side should be left to the developer. Therefore, the Commission is requested to consider the minimum escalation of 20% on cost of Solar PV modules on account of AC/DC ratio. Further, UJVN Ltd. also requested the Commission to specify category wise tariff for Solar PV plants on MW basis (i) Less than 5 MW, (ii) 5 MW to 15 MW and (iii) 15 MW to 25 MW.

With regard to Canal Bank and Canal Top Solar PV Plants, UJVN Ltd. submitted that land is available over a lengthy stretch due to various structures and encroachment on the banks in between, land is not available in continuity. Due to which substantial cost is incurred on civil work, water supply pipelines, fencing, lighting security and O&M. Recently, Canal Bank Solar PV DPR are also prepared based on current market survey. The project cost has been worked out to Rs. 6 Crore/MW.

1.25.4 M/s DS Solar Energy Pvt. Ltd and M/s Fairdeal Solar Energy Pvt. Ltd. submitted that GST has increased from 5% to 12% and the cost of other materials including steel & manpower for installation & commissioning work has also increased by 25% to 40%. Capital cost of the project installed is Rs. 4.20 Lakh/MW without GST and Rs. 4.80 Lakh/MW with GST.

Commission's View

1.25.5 With regard to the comments of Akshya Urja Association that there is increase in cost and IDC due to increase in interest rate of borrowings, it is to be noted that the Commission is reviewing the capital cost of solar projects each year considering all the financial factors inclusive of current material rates, bank rates and the gestation period and accordingly, has fixed the benchmark capital costs and tariffs therein. Hence, no change is warranted in this regard. Further, the stakeholder requested the Commission to allow deemed generation for GSPV and GRPV in case of interconnection to 11 kV evacuation as they would stand to be classified as must run stations. In the matter, it is pertinent to mention the solar power plants installed under net metering arrangement and installed solely for selling power to distribution licensee are same in technology. Further, it is pertinent to mention that the solar power plants under net metering is installed with a motive of self-consumption only and excess energy, if any, is injected into grid. However, commercial solar power plants are installed with a motive to supply energy to the distribution licensee, however, if the generating station fails to generate due to conditions of grid beyond the control of the generating station resulting in commercial loss to it as it would not be able to recover the invested amount. Based on above discussion, the Commission does not find it prudent to allow deemed generation for solar power plants is installed under net metering arrangement.

1.25.6 With regard to the comment of UREDA for insertion of behind the meter captive roof top solar power plant irrespective of sanctioned load/contract load is concerned, it is pertinent to mention that the consumer is at liberty to install a captive power plant based on its requirement irrespective of the sanctioned load. The Distribution licensee does not have any role in the matter. However, in case of Solar power plant, a continuous grid support is required from distribution licensee for voltage reference. Accordingly, the developer can install a captive solar power plant of any capacity by paying Parallel Operation Charges defined under these Regulations. The Stakeholder also requested the Commission to determine the capital cost for agrovoltaic projects. In the matter, the Commission in the above discussions has already stated that as and when the norms are available for Agrovoltaic projects, it will determine the tariffs for the same. Further, the Stakeholder also requested the Commission to allow the supply of excess energy into the grid at the generic tariff as specified by the Commission. In

the matter, it would be wrong to allow recovery of excess energy injected into the grid at the generic tariff if the solar power plant are allotted to the developer including consumer/prosumer or third party based on competitive bidding. Accordingly, the Commission rejects the proposal. Further, insertion of sub-regulation "Group Net metering framework shall be applicable for all consumers". The Commission does not find it prudent to enter the same under Regulation 37 as the same has already been dealt in Regulation 40.

1.25.7 With regard to the comments of UJVN Ltd. on categorisation of capital cost based on the capacity of Solar power plant and AC-DC ratio, it will not be feasible to determine the tariffs based on capacities. In any way a project having a larger capacity is bound to have lower tariffs due to economies of scale, hence, to promote the development of solar projects the Commission has decided to retain a single tariff for solar PV projects.

1.25.8 The Commission in the past has approved the benchmark capital cost of Rs. 3.88 Crore/MW for FY 2018-19, Rs. 3.56 Crore/MW for FY 2019-20 which was extended till FY 2021-22 due to COVID-19 Pandemic. Subsequently, the Commission approved the capital cost of Rs. 372.21 Crore/MW for FY 2022-23. Further, the module cost has also declined significantly from FY 2018-19 to FY 2023-24 as follows:

Financial Year	Average Module cost USD/Wp
FY 2018-19	0.317
FY 2019-20	0.241
FY 2020-21	0.241
FY 2021-22	0.210
FY 2022-23	0.218

From the above table, it is explicitly clear that with the passage of time, cost of solar technology is declining. There is a decline of 31.50% in the cost of modules in the last five years. Further, in the month of May 2023, the average of module cost was USD 0.193/Wp and now which has further reduced to USD 0.166/Wp.

The Commission in its draft Regulations had considered the cost of Solar PV Module as Rs. 360.47 Lakh/MW considering the exchange rate of Rs. 82.23/USD based on then available exchange rate for the last six months, considering the module cost of 0.193 USD/Wp, degradation of 0.50% and 20% additional cost for duties and other expenses. As per the website of www.pvinsights.com which provides the spot price of modules in international market, the latest Solar PV Module Weekly support Price, as

accessed on 02.08.2023, is as under:-

Item	Average (USD/Wp)
Poly Module	0.143
Mono PERC Module in China	0.147
Thin Film Solar Module	0.209

The average of these works out to 0.166 USD/Wp against 0.193 USD/Wp considered in Draft Regulations. Further, average exchange rate for the last six months works out to Rs. 82.28/USD against Rs. 82.23/USD considered exchange rate of last six months. Accordingly, based on the above discussion and considering the degradation of 0.50%, the module cost works out to Rs. 136.69 Lakh/MW. The Government of India has announced levy of import duty, w.r.f. 01.04.2022, on the import of Solar PV cells and Solar PV modules @ 25% and 40% respectively. Moreover, the GST rate for the goods component has also been increased from 5% to 12%. Apart from the above, the Government of India has provided for the production linked incentive of Rs. 4500 Crore, in addition to the production linked incentive of Rs. 19500 Crore provided for the budget proposed for FY 2022-23 which is applicable for current year also. All the factors would have overlapping and diverse effects and may also increase the competitiveness. Such factors shall impact the market rates at which the Solar PV cells and Solar PV modules shall be available from various sources. Moreover, the difference in the cost of Solar PV cells and module as well as taxes thereon, if availed optimally, can also facilitate marginal reduction in the over-all cost of the panels.

After taking all related factors into account and comments of various stakeholders regarding bank charges for conversion of INR to USD, taxes & duties and overheads, the Commission decides to escalate the module cost by 28%. Accordingly, the module cost works out to Rs. 180.04 Lakh/MW.

The Commission would like to clarify that the escalation on account of additional taxes is being provided purely on normative basis after balancing various factors affecting the market conditions as discussed above and shall be applicable irrespective of the actual channel of procurement of the Solar PV modules. In fact, in case of procurement from indigenous sources the BCD/SGD will not be applicable at all. The Commission feels that this approach will not only enable the developers to procure the modules in the most economical manner but may also encourage procurement from indigenous sources.

Further, the Commission decides to retain the CUF specified under the draft regulations as the same is lower than the CUF specified by the neighbouring States and Central Commission. Further, it is pertinent to mention that the CUF of 19% was fixed considering Poly Silicon Solar Module and Thin Film Solar Module. However, in the present Order, the Commission has considered Mono PERC Solar Module which is an advance technology in comparison to Thin film Solar Module and results into higher CUF which in turn reflects higher generation from the said modules. Moreover, the Commission has considered the spot prices which are generally on a higher side, and the developers will have the benefit of economies of scale on bulk purchase as well as enjoy bulk purchase discount. Furthermore, the Commission in the current regulations has retained additional 300 points for interest on normative loan above the average SBI MCLR (one year) prevailing for last available six months in accordance with the provisions specified by CERC which has been reduced to 200 basis points vide RE Regulations, 2020 by CERC. Moreover, the Commission has approved annual O&M expenses on a very higher side in comparison to other States. Accordingly, the solar power developers in the State will gain additional interest benefit of 1% as the Commission has kept the interest rate based on 300 basis points and increased the O&M expenses which may offset the increase under one head by decrease under the other head.

Further, with regard to Land cost, some of the stakeholder submitted that due to increase in circle rates, the land cost will increase. In the matter, it is pertinent to mention that under most of the schemes the projects are proposed to be installed in barren lands of hilly terrain. Further, stakeholders have not submitted any supporting documents to support their claim. The Commission has considered 5 acres of land for Solar PV plant having capacity of 1 MW. However, as discussed earlier, with the change in technology lesser area is required for installation of Solar PV plants. Accordingly, saving in the land cost can be utilized to make the land suitable for installation of Solar PV plant. Moreover, as per Solar Policy, 2023 the detailed guidelines for lease rent determination will be notified by UREDA on their website from time to time in consultation with Uttarakhand Solar Power Land Allotment Committee. Accordingly, the Commission may review the land cost while determining the capital cost for solar energy based projects in ensuing year based on the information of lease rent available with UREDA.

The Commission had earlier approved the cost for other components for FY 2022-23 of Rs. 108.96 Lakh/MW escalating by 20% to factor in the hike in prices and change in technology then. Now for FY 2023-24, the Commission has escalated the said amount based on the average of CPI and WPI of last three years giving equal weightage. Accordingly, the Capital cost for Solar PV plants works out to Rs. 345.11 Lakh/MW.

Further, with regard to capital cost of Canal Bank Solar PV Plants and Canal Top Solar PV plants, on one hand UJVN Ltd is proposing a higher capital cost and on the other, the tariff bidded by its developers in the range of Rs. 4.18 per unit to Rs. 4.26 per unit. Hence, there seems no reason to specify higher capital cost for the same. Further, the land is already owned by it and any increase in other cost components can be offset by the land costs which is a saving to it. Hence, the Capital Cost for Canal Bank Solar PV plant has been specified as Rs. 400 Lakh/MW and Capital cost for Canal Top Solar PV Plant as Rs. 425 Lakh/MW

1.25.9 Accordingly, based on the above discussion, Regulation 34 shall be read as follows:

Regulation 34: Solar PV Power Projects

"Norms for Solar Photovoltaic (PV) power project under these Regulations shall be applicable for grid connected PV systems that directly convert solar energy into electricity and are based on the technologies such as crystalline silicon or thin film etc. as may be approved by MNRE. The technology specific parameters for determination of generic tariffs for Solar PV Power Projects commission or to be commissioned on or after 01.04.2023 shall be as follows:

Capital Cost	***O&M Expenses for year of commissioning***	***Capacity Utilization Factor***
(Rs. Lakh/MW)	***(Rs. Lakh/MW)***	
345.11	*16.24*	*19 %*

"

1.25.10 Based on the above discussion, Regulation 35 shall be read as follows:

Regulation 35: Canal Bank Solar PV Plants and Canal top Solar PV Plants

"Norms for canal bank Solar PV Power Plants and canal top Solar PV Power Plants under these Regulations shall be applicable for grid connected PV systems that directly convert solar energy into electricity and are based on the technology specific parameters for determination of generic tariffs for such power projects commissioned or to be commissioned on or after 01.04.2023 shall be as follows:

Type Solar PV Plant	Capital Cost	O&M Expenses for year of commissioning	Capacity utilization Factor
	(Rs. Lakh/ MW)	(Rs. Lakh/MW)	
Canal Bank Solar PV Plant	400.00	16.24	19%
Canal Top Solar PV Plant	425.00		

"

1.25.11 Based on above discussion, Regulation 37 shall be read as follows:

Regulation 37 i.e. Grid interactive Roof-top Solar PV Plants (GRPV)/Grid Interactive Small Solar PV Plants (GSPV)

"(1) The technology specific parameters for determination of generic tariff for GRPV/GSPV commissioned or to be commissioned on or after 01.04.2023 shall be as below:

Project Size	Capital Cost	O&M Expenses for year of commissioning	Capacity Utilization Factor
	(Rs. /kW)	(Rs./kW)	
Upto 10 kW	47691	2149	19 %
>10 kW & upto 100 kW	43753	1912	
>100 kW & upto 500 kW	41276	1735	
>500 kW and upto 1 MW	40074	1624	

(2) GRPV/GSPV can be installed for injecting power into the distribution system of a licensee by any Eligible consumer:

Provided that the maximum GRPV/GSPV installed capacity at any Eligible Consumer's premises shall be upto a maximum of 100% of consumer's sanctioned load/contract demand;

Provided that in case of Domestic Consumer, such installed capacity of GRPV/GSPV shall be irrespective of consumer's sanctioned load/contract demand;

Provided, the maximum installed capacity of GRPV/GSPV at the premises of eligible consumer shall not be more than 1 MW.

(3) Injection from GRPV/GSPV owned by the Eligible consumer or by third party shall be settled on Net Energy basis at the end of each Billing period.

(4) The tariff, as per tariff orders of the Commission, in respect of the supply of electricity to the consumers by the distribution licensee shall be applicable for the Net Energy supplied by the licensee in a billing period if the supplied energy by the licensee is more than the energy injected by the Roof-Top Solar PV plant of the consumer or by third party:

(4) The tariff, as per tariff orders of the Commission, in respect of the supply of electricity to the consumers by the distribution licensee shall be applicable for the Net Energy supplied by the licensee in a billing period if the supplied energy by the licensee is more than the energy injected by the GSPV/GSPV of the consumer or by third party:

Provided that such eligible consumer shall be exempted from payment of monthly minimum charges/monthly minimum consumption guarantee charges, if any, equivalent to the capacity of GRPV/GSPV installed at the premises;

Provided further that no open access charges including surcharges shall be leviable on such eligible consumers for the captive use of power.

(5) If in a billing period the supplied energy by the licensee is less than the energy injected by the GRPV/GSPV of the consumer/prosumer or the third party, subject to provisions in sub-Regulation (3) above, the licensee would pay to such prosumer at the generic tariff as may be specified by the Commission or at the rate discovered through tariff based bidding process whichever is lower for such Net Energy supplied to it

(6) Provisions of Deemed Generation shall not be applicable on GRPV/GSPV.

(7) The cumulative capacity of GRPV/GSPV which can be connected to a single transformer shall not exceed the capacity of such transformer.

(8) In case any augmentation is required for the purpose of connecting GRPV/GSPV, Distribution Licensee shall facilitate and bear the capital expenditure on account of such system strengthening/augmentation upto the interconnection point from nearest sub-station.

(9) Virtual Net Metering Framework shall be applicable for consumers under domestic category, offices of Government /Local Authorities."

1.26 Regulation 40, i.e. Virtual Net Metering and Group Net Metering

The Commission had proposed as follows in the Draft Regulations:

"(1) The capacity of the renewable energy plant under Group Net Metering or Virtual Net Metering framework to be installed by any consumer(s) shall not be less than 5 kW and more than 75 kW.

(2) The Procedure for billing and energy accounting of electricity connection(s) under Group Net Metering shall be in accordance with the provision of these regulations.

A. <u>Procedure for billing and energy accounting under Group Net Metering</u>

(3) Where the export of units during any billing period exceeds the import of units at the connection where solar power plant is located, such surplus units injected into the grid shall be adjusted against the energy consumed in the monthly bill of the service connection(s) in a sequence indicated in the priority list provided by the consumer. The

sequence of priority for adjustment shall be deemed to being with the service connection where the solar power plant is located.

(4) The priority list for adjustment of the balance surplus energy against other electricity connection(s) may be revised by the consumer once in every financial year with an advance notice of two months

(5) The electricity consumption in any time block (e.g., peak hours, off-peak hours, etc.) shall be first compensated with the electricity generation in the similar time blocks in the same billing cycle of the consumer where the solar power plant is located and any surplus units injected shall be adjusted against the energy consumed in the monthly bill of service connection(s) in a sequence indicated in the priority list provided by the consumer as if the surplus generation/ Energy Credit occurred during the non peak time block of Time of Day (ToD) consumers and normal time block for Non-ToD consumers.

(6) Where during any billing period the export of units either in Non-ToD tariff or ToD Tariff exceeds the import of units by the electricity service connection(s), such surplus units injected by the consumer shall be billed to licensee at the generic tariff as may be specified by the Commission or at the rate discovered through tariff based bidding process whichever is lower.

B. <u>Procedure for billing and energy accounting under Virtual Net Metering Framework</u>

(1) The energy generated from solar power plant shall be credited in the monthly electricity bill of each participating consumer(s) as per the ratio of procurement from solar power plant indicated under the agreement/MoU entered by the consumer(s).

(2) The consumer(s) shall have the option to change the share of credit of electricity from solar power plant subject to the ratio of procurement from solar power plant indicated under the agreement/MoU entered by the consumer(s) once in the financial year with an advice notice of two months.

(3) Where the service connection of any participating consumer(s) is disconnected due to any reason under any law for the time being in force, the unadjusted units/remaining credits of that consumer shall be paid by the distribution licensee at the end of financial year.

(4) The electricity consumption in any time block (eg. Peak hours, off-peak hours, etc.) shall be first compensated with the electricity generation in the similar time blocks in the same billing cycle of the participating consumer(s). Any surplus generation over consumption in any time block in a billing cycle shall be accounted as if the surplus generation/ energy credits occurred during the non-peak time block.

(5) Where the units credited during any billing period of any participating consumer exceeds the import of units by that consumer, licensee would be billed at the generic tariff as may be specified by the Commission or at the rate discovered through tariff based bidding process whichever is lower for such surplus."

Stakeholders Comments/Suggestions

1.26.1 UJVN Ltd. submitted that the capacity of RE plants under Group Net Metering or Virtual Net Metering framework to be installed by any consumer shall not be less than 5 kW or more than 1000kW.

1.26.2 Akshay Urja Association submitted that a separate net-metering policy incorporating Virtual Net Metering should be drafted in sync with Solar Policy, 2023. The stakeholder also submitted that provisions w.r.t. Virtual Net Metering and Group as mandated by MNRE and incorporated in Solar Policy, 2023 much be included in the regulations. With regard to Virtual Net Metering, Akshay Urja Association submitted that the provisions of the regulations may be aligned with the provisions of Solar Policy, 2023. No open access charges may be levied for plants installed under Virtual Net Metering for sale to Discom or captive use or third party sale as per provisions of virtual net metering. Further, installation of GRPV and GSPV may be allowed in any location under distribution area in the entire state.

The Stakeholder requested the Commission to increase the maximum limit specified for virtual net metering and group net metering, i.e. from 75 kW to 1 MW. The Stakeholder also submitted that the adjustment of net energy with UPCL under virtual net metering may be allowed in the same financial year instead of one billing cycle.

1.26.3 UREDA submitted that surplus power injected by the prosumer should be billed at the generic tariff as specified by the Commission.

Commission's View

1.26.4 With regard to increase in upper capacity limit of 75 kW for installation of solar power plant under Virtual Net Metering (VNM) and Group Net Metering (GNM), the Commission does not agree with the proposal of the stakeholder as VNM and GNM are in nascent stages. Further, capacities upto 75 kW may be installed at LT network of the distribution licensee without any requirement of any augmentation of the existing infrastructure. The Commission will revisit the same in future based on the development of the same.

1.26.5 Some of the Stakeholders requested the Commission to align the provisions of virtual net metering and group net metering with the various guidelines issued by MNRE and Solar Policy, 2023. In the matter, it is to be noted that the Commission has drafted the regulations in accordance with the provisions specified by MoP/MNRE vide its various notification in the matter.

1.26.6 With regard to the comments of Akshya Urja regarding waiver of open access charges, it is pertinent to mention that the Commission has already dealt with the issue above in the Statement of Reasons above. Accordingly, the Commission does not find it prudent to reiterate the same. Further, for the sake of clarify, it is worth mentioning that solar power plants installed by the Prosumer for self-consumption and sale of surplus power to distribution licensee shall not attract open access charges. However, where the solar power plant installed under virtual net metering for sale to third party shall attract open access charges subject to exemptions from the State Government in its Policies as issued from time to time.

1.26.7 With regard to the comment of UREDA that surplus energy should be billed at generic tariff specified by the Commission, it is pertinent to mention that Central Government and State Government have many times introduced various schemes through competitive bidding for installation of solar power plants in the State. Further, it would be inappropriate to bill the surplus energy in excess of the bid price to UPCL as it would then defeat the purpose of bidding. Hence, billing of surplus energy injected into the grid shall be at the rates mentioned in the PPA. Accordingly, the Commission does not find it prudent to change the regulation in this regard.

1.27 Sub-regulation (1) of Regulation 41, i.e. Transmission Charges, Wheeling Charges and Losses

In the draft Regulation, the Commission had proposed as follows:

"(1) Transmission Charges: For non-discriminatory 'open access' to the intra-State transmission system for carrying the electricity generated by the RE Based Generating Stations or Co-generating Stations to the destination of use, the RE generator or the consumer, as the case may be, shall have to pay the transmission charges and wheeling charges for use of intra-state transmission system and distribution system which shall be calculated based on the principles specified in UERC (Terms and Conditions of Intra-State Open Access) Regulations, 2015 read with amendments from time to time:

Provided that no Transmission and Wheeling Charges are payable for sale of electricity to distribution licensee or to local rural grid within the State;

Provided further that where a generating company proposes to supply electricity outside the State, such generating company, in addition to transmission/wheeling charges specified above, shall have to bear the transmission/wheeling charges determined by the Commission on case to case basis for the dedicated lines and substation of the transmission/distribution licensee used only for evacuation of such power;

Provided further that where more than one generating company proposes to supply electricity outside the State over common dedicated transmission/distribution system of transmission/distribution licensee for evacuation of their power, such generating companies, in addition to transmission/wheeling charges specified above, shall have to bear the full transmission/wheeling charges determined by the Commission on case to case basis for such dedicated lines and substation of the transmission/distribution licensee used only for evacuation of such power on pro-rata basis of installed capacity."

Stakeholders Comments/Suggestions

1.27.1 UREDA submitted that Solar Policy, 2023 provides exemption of transmission and wheeling charges for captive use of solar energy. Further, the stakeholder requested the Commission to clarify whether the evacuation of power from inter-state transmission system from RE based generating units within the State will also get the benefit of waiver of transmission and wheeling charges.

1.27.2 Akshay Urja Association submitted that transmission and wheeling charges should be exempted for virtual net metering and group net metering plants as per provisions of

Solar Policy, 2023.

Commission's View

1.27.3 With regard to concern of the stakeholders w.r.t. exemption of Transmission and Wheel Charges, it is pertinent to mention that the Commission has already dealt with the issue while discussing the comments on Regulation 9, i.e. Open Access. Accordingly, the draft regulation shall be treated as final.

1.28 Clause (2) of Regulation 42, i.e. Evacuation of Power

The Commission had proposed as follows in the Draft Regulations:

"*(1) Distribution Licensees shall provide connectivity to the RE Based Generating Stations having capacity upto 25 MW at its nearest distribution sub-station preferably within a range of 10 kilometers from the location of such generating station. They may further mutually agree to provide connectivity at appropriate voltage level subject to technical feasibility and technical standards for construction of electrical lines and connectivity with the grid as may be specified by CEA.*

Provided further that where more than one RE based Generating Stations having cumulative installed capacity less than 25 MW are located in a cluster/area and for the purpose of evacuation, these generating stations agree to pool their generation at a common pooling switching station to be constructed by them at their own cost and further beyond such pooling switching station, the Distribution Licensee shall provide connectivity at its nearest sub-station. They may further mutually agree to provide connectivity at appropriate voltage level subject to technical feasibility and technical standards for construction of electricity lines and connectivity with the grid as may be specified by CEA. However, such generating stations shall be eligible for additional levelised tariff as specified under Regulation 16(1)(c) of these Regulations, only if they construct the line from pooling sub-station to the nearest sub-station at their own costs.

(2) Transmission Licensee shall provide connectivity to the RE Based Generating Stations having installed capacity more than 25 MW, at its nearest transmission sub-station preferably within a range of 10 kilometers from the location of such generating station. They may further mutually agree to provide connectivity at appropriate voltage level subject to technical feasibility and technical standards for construction of electrical lines and connectivity with the grid as may be specified by CEA:

Provided that any RE based Generating Station having capacity upto 25 MW is willing to connect and evacuate power through 132 kV & above transmission system, it may do so subject to consent of the Transmission Licensee.

Provided further that where more than one RE based Generating Stations having cumulative installed capacity more than 25 MW are located in a cluster/area and for the purpose of evacuation, these generating stations agree to pool their generation at a common pooling switching station to be constructed by them at their own cost and further beyond such pooling switching station, the Transmission Licensee shall provide connectivity at its nearest sub-station. They may further mutually agree to provide connectivity at appropriate voltage level subject to technical feasibility and technical standards for construction of electricity lines and connectivity with the grid as may be specified by CEA. However, such generating stations shall be eligible for additional levelised tariff as specified under Regulation 16(1)(c) of these Regulations, only if they construct the line from pooling sub-station to the nearest sub-station at their own costs.

Stakeholders Comments/Suggestions

1.28.1 UJVN Ltd. submitted that the timeline for providing connectivity to RE based generating stations from licensees should be defined. Further, granting connectivity upto 10 km may also be removed for promotion of SHPs.

1.28.2 UPCL requested the Commission to allow these provisions even in case the cumulative installed capacity is less than 25 MW located in a cluster/area as most of these generating plants are coming in rural and hilly areas where number of 33/11 kV S/s have practical constraints regarding creation of number of new bays for independent feeders. In such cases, pooling switching station is an effective way to provide independent connectivity to each generator thereby reducing the outages in the evacuation system of the generator and further such pooling switching station may be connected to the nearby s/s of UPCL or PTCUL through a dedicated 11 kV or 33 kV feeder, as the case may be.

1.28.3 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that primary responsibility of evacuation of power from interconnection point at SHP busbar should be of licensee. If the number of SHPs are coming up in a cluster then licensee should setup a pooling station for evacuation of power.

Commission's View

1.28.4 With regard to the comments of the Stakeholders, it is to be noted that prime responsibility of providing connectivity to the grid remains with the licensee(s), i.e. distribution licensee and transmission licensee However, as per clause (c) of sub-Regulation (1) of Regulation 16 of these Regulations, individual generating company shall have an option to construct evacuation infrastructure from point of inter-connection to the nearest sub-station.

The generators and licensees (both Transmission licensee and Distribution licensee) are advised to discuss amongst them the issues and devise a suitable condition/clause in the connectivity agreement/PPA/TSA specifying the liability of either parties in cases where the generating station is ready for commissioning but due to non-availability of proper evacuation system the generating station is unable to achieve COD and is lying idle and also in cases where construction of generating station is delayed while the evacuation infrastructure is completed and ready to evacuate generation.

1.28.5 With regard to the comments of UJVN Ltd. regarding removal of line length limit of 10 km and timeline for connectivity, the connectivity issue has already been dealt above in the SoR. With respect to fixation of line length of 10 km, the same has been so specified so that the generating stations get connected at the nearest sub-station of the licensee at a reasonable distance of 10 km. Hence, no change is required in the Regulations.

1.29 Clause (7) of Regulation 45, i.e. Connectivity and Metering arrangement for GSPV/GRPV

The Commission had proposed as follows in the Draft Regulations:

"The eligible consumer shall be solely responsible for any incidents/accident to human being/ animals whatsoever (fatal/nonfatal/departmental/non-departmental/damages to material of the licensee) that may occur due to back feeding from the solar plant when the grid supply is off and such consumer shall not only bear the cost of the damages to the material of the licensee but also compensate for the life of any human being/animals in case of such incidents/accidents. The distribution licensee reserves the right to disconnect the consumer's installation at any time in the event of such exigencies to prevent accident or damage to man and material."

Stakeholders Comments/Suggestions

1.29.1 There is a need to add provision on verifying whether disconnection by distribution licensee is done to prevent accident or any damage or not. Without any provision for verification, may lead to misuse.

Commission's View

1.29.2 In the matter, it is pertinent to mention that the Commission has specified many provisions under various regulations wherein the distribution licensee is obligated to maintain its network in accordance with the standards and technical norms specified by CEA. Accordingly, the Commission does not find any prudence to incorporate any provision in this regard.

1.30 Regulation 48 i.e. Purchase of Electricity by the Generating station including Start up Power

In the draft Regulation, the Commission had proposed as follows:

"(1) Any person, who establishes, maintains and operates a generating station and normally does not need power from the licensee round the year, may purchase electricity from a generating company or a distribution licensee in case his plant is not in a position to generate electricity to meet the requirement of his own use or for start up and consequently power is required to be drawn from distribution licensee:

Provided that in case electricity generated from the plant is being exclusively sold to the State Distribution Licensee, the electricity (in kWh) procured by the Generating Station from the State Distribution Licensee to meet its requirement of his own use or for startup power, will be adjusted from the electricity sold to the Distribution Licensee on month to month basis. The Distribution Licensee shall make the payment for net energy sold to it by the Generating Company, i.e. difference of the total energy injected into the grid and energy drawn from the grid by the Generating Company.

In case the energy supplied by the distribution licensee is more than the energy injected by the generating company, the net energy (in kWh) thereof shall be charged as per the tariff determined by the Commission for temporary supply under appropriate "Rate Schedule of tariff" for Industrial Consumers considering maximum demand during the month as the contracted demand for that month. The Fixed/Demand charges for that month shall be payable for the number of days during which such supply is drawn.

Provided further that in case electricity generated from the plant is sold to third party other than the Distribution Licensee, then such purchase of electricity by the generating company from the distribution licensee, shall be charged as per the tariff determined by the Commission for temporary supply under appropriate "Rate Schedule of tariff" for Industrial Consumers considering maximum demand during the month as the contracted demand for that month. The Fixed/Demand charges for that month shall be payable for the number of days during which such supply is drawn."

Stakeholders Comments/Suggestions

1.30.1 UJVN Ltd. submitted that the generators selling electricity to third party are treated at par with the generators selling electricity to the state discom which is not justified. The electricity consumption for its own use or for start up from State Distribution Licensee by the RE generator should be at same charges at which electricity is sold to State Distribution licensee. Therefore, the aforesaid proviso should be replaced with:

"In case the energy supplied by the State Distribution Licensee is more than the energy injected by the generating company, the net energy (in kW) thereof shall be charged at equal rate to the tariff of that generating plant."

Commission's View

1.30.2 It is pertinent to mention that the nature of both type of generators, i.e. supplying electricity to distribution licensee or third party is same, as far as purchase of electricity by the generating station including start up power to meet its own requirement is concerned. Both are not the consumers of licensee. Irrespective of sale of power to licensee or third party, both type of generators needs electricity on temporary basis where the plant is not in a position to generate electricity to meet its own requirement. Therefore, the Commission does not find it to prudent to treat generator differently on the basis of the supply of electricity. Besides this provision would also be against the intent of the Electricity Act which restricts discrimination.

1.31 Regulation 49, i.e. Banking of Power (Applicable only in case of Captive RE source Generating Plants & Non-fossil fuel based Co-generating Stations)

In the draft Regulations, the Commission had proposed as follows:

"*(1)The Generating Stations shall be allowed to bank power within a period of one calendar month, for the purpose of withdrawal of the banked power in the event of emergency or shut*

down or maintenance of the plant, subject to following conditions:

(a) Banking of energy upto 100%, as agreed between the plant and the distribution licensee, shall be allowed during the period declared by the Commission as peak hours from time to time in its Tariff Orders.

(b) Withdrawal of power shall be allowed only during the period other than the period declared by the Commission as peak hours from time to time in its Tariff Orders.

(c) The plants shall provide ABT compliant Special Energy Meters and the monthly settlement of energy sales shall be done based on Power supplied during the peak hours as per SEM meter readings shall be considered as banked power.

(d) Upon introduction of intra-state ABT in the State, the banking as well as withdrawal of banked energy shall be subject to day ahead scheduling.

(e) The power withdrawn by the plant as ascertained by SEM readings, which could not be considered as withdrawal from banked power, shall be considered as power purchased by the plant.

(f) The purchase of power by these plants under clause (e) or otherwise shall be charged as per the provisions of Regulation ***Error! Reference source not found.*** *above.*

(g) A Generating Station shall be allowed to withdraw power that was banked during a particular financial year in the same year.

(h) The banked power remaining unutilized on the expiry of the financial year would be treated as sale and the financial settlement shall be made at the tariff determined by the Commission in its Tariff Order for the year during which the power was banked or at the generic tariff specified by the Commission in case of a Non-fossil fuel based Co-generating Stations. No banking charges shall be deducted from such unutilized banked energy.

(i) Banking charges shall be @ 12.5% of the energy banked.

(j) In case of a Non-fossil fuel based Co-generating Stations, which is not a captive generating plant, the facility of banking shall apply only if it has a PPA with the distribution licensee in the State."

Stakeholders Comments/Suggestions

1.31.1 UREDA requested the Commission to add the following provision:

"Excess generation during non-peak hours by distributed solar power plants shall be a deemed purchase by Discom and compensated at the tariff determined by the Commission. Discom shall aggregate the excess generation to create a green pool. This green energy pool shall be made available by the Discom to the consumers at the green tariff rate."

1.31.2 IEX requested the Commission to align the banking provision in line with MoP green Energy Open Access Rules.

1.31.3 M/s Amplus Solar submitted that as per MoP Rule, banking should not necessarily be restricted to monthly basis and can be extended for the year or any other period as deemed appropriate by the Commission. The Stakeholder also submitted that banking should be allowed irrespective of specific time period as RE are intermittent in nature and banking facilities are major enabler for RE open access when consumer's demand schedule and power generation schedule cannot be matched. With regard to banking charges, the Stakeholder submitted that the banking charges are on a higher side and needs to be reduced.

1.31.4 Akshay Urja Association submitted that the banking charges should be reduced to 5% in order to promote solar energy in the State in consideration with Solar Policy, 2023. Further, provision regarding banking or sale of power to 3rd party PPA under RESCO mode for captive power generation may be included.

Commission's View

1.31.5 The Stakeholders requested the Commission to reduce the banking charges stating that the same are too high and banking may be allowed annual basis. In the matter, it is pertinent to mention that the Forum of Regulators issued "Model Regulation on Methodology for calculation of Open Access charges and Banking charges for Green Energy Open Access Consumers" wherein FOR has specified the banking charges and the permitted banking period. Model Regulations specifies that *the Banking Charges shall be adjusted in kind @ 8% of the energy banked* and banking of energy shall be permitted only on monthly basis as per Calendar month. Accordingly, the Commission decides to reduce the banking charges to 8% whereas the request of the stakeholders for permitting the annual adjustment of banking is rejected keeping in view the Model Regulations issued by FOR.

1.31.6 With regard to the comments of IEX, it is pertinent to mention that the Commission has issued draft Green Open Access Regulations, 2023 which covers banking provisions of green energy in line with MoP Green Energy Open Access Rules.

1.31.7 UREDA has requested the Commission to incorporate the provision to consider the excess energy generation by the Solar Power plant as deemed purchase by the distribution licensee and compensated at tariff determined by the Commission. In the matter, it is pertinent to mention that the Commission vide its draft Green Open Access Regulations, 2023 has provided a provision for energy supplied during non-peak hour. Accordingly, to bring parity among the regulations, the Commission decides to insert the following provision:

"(i) Banking charges shall be adjusted in kind @8% of the energy banked.

(k) The energy banked during non-peak hours (TOD slots) shall be permitted to be drawn during non-peak hours (TOD slots) by only paying the banking charges and from non-peak hours (TOD slot) to peak hours (TOD slot) by paying charges in kind @ equivalent to % of difference between the Peak hours energy charge rate and Normal hours energy charge rate (as defined in the respective Tariff Orders issued by the Commission) of the energy banked in addition to the above banking charges specified under these regulations."

Further, the Commission decides to insert the definition of 'non-peak hour' for more clarity in the above regulation:

*"**"Non-Peak Hour"** means other than Peak hours as may be decided by the Commission from time to time."*

1.32 Regulation 50 i.e. Deemed Generation

In the draft Regulation, the Commission had proposed as follows:

"(Applicable only in case of Small Hydro Generating Plants & Solar PV Plants & Solar Thermal Projects excluding Solar power plants installed under net metering arrangement)

(1) After the COD of the Project, loss of generation at the Station on account of reasons attributed to the following, or any one of the following, shall count towards Deemed Generation:

- *Non availability of evacuation system beyond the Interconnection Point; and*
- *Receipt of backing down instructions from the SLDC.*

Provided that the following shall not count towards Deemed Generation:

(i) *The loss of generation at the Station on account of aforesaid factor(s) but attributed to the Force Majeure event(s);*

(ii) *The loss of generation at the Station due to the interruptions/outages attributed to the aforesaid factor(s) during the period in which the total duration of such outages/ interruptions, other than that excluded under above, is within the limit of:*

- *48 hours in a month in case of small hydro project, and*
- *50 hours in a year in case of solar PV and Solar Thermal Project.*
- *Provided that for working out the ceiling of 50 Hrs. in a year for Solar PV and Solar Thermal Projects, the interruptions/outages occurring during 18.00 hours in the evening to 6.00 hours in the morning shall not be counted;*

The distribution licensee shall be required to maintain the voltages at the point of interconnection with the project within the limits stipulated hereunder, with reference to declared voltage:

- *In the case of High Voltage, +6% and -9%; and,*
- *In the case of Extra High Voltage, +10% and -12.5%.*

Any loss in generation due to variations in the voltage beyond the limits specified above shall be reckoned as deemed generation provided such loss of generation results in reduction of more than 25% of capacity output.

(2)The period of outage/interruption on account of such factor(s) specified in sub-Regulation 1 and 2 above, shall be reconciled on monthly basis and the loss of generation at the station towards Deemed Generation after accounting for the events specified under sub-Regulation 1 (i) & (ii) above, shall be computed on following considerations:

(i) *The recovery on the above account shall be admissible if the actual energy generated during the year is less than the normative CUF specified in the Regulation for small hydro projects and Solar PV and solar thermal projects (in case of project opting for generic tariff) or the CUF considered for recovery of fixed charges (in case of project specific tariff is applicable) for small hydro projects and solar PV and solar thermal projects. In case the sum of actual energy generated and the deemed generation during the year exceeds the CUF at which the recovery of fixed charges has been envisaged, then the deemed generation alongwith the actual energy generated will be allowed only upto the CUF considered.*

(ii) The generation loss towards the Deemed Generation in accordance with sub-Regulation (i) above, if any, during the month shall be considered on the pro-rata basis on the number of hours lost based on the actual average generation achieved during that month divided by the total number of hours available during the month reduced by the number of hours outage/interruption occurred in the system.

(iii) The generation loss towards the Deemed Generation (in MWh) in accordance with sub-Regulation (ii) above, if any, during the month shall be considered as the summation of the product of number of hours the variations in voltage beyond the specified limit existed and the Generation lost (in MW) due to the variation in the voltage beyond the specified limit. The Generation lost (in MW) would be the difference between the following:

(a) Minimum of the generation (in MW) before the variation in voltage occurred and the generation (in MW) achieved after 90 minutes immediately after variation in voltage was restored within the specified limit would be treated as the "Actual Generation" during the period when voltage variations occurred; and

Provided that if such variation in voltage continues for the entire month, generation (in MW) before such variation in voltage occurrence would be treated as the "Actual Generation".

(b) The generation achieved during the period when variation in voltages took place.

(3) The distribution licensee shall pay for the saleable deemed generation, on annual basis, for Small Hydro projects and Solar PV and Solar Thermal projects worked out on the basis of the deemed generation on the above lines, at the generic/project specific tariffs as applicable in accordance with the applicable RE Regulations. The settlement of payment towards deemed generation charges shall be carried out within 3 months of the completion of the financial year.

Provided that any charges paid by the distribution licensee towards deemed generation shall not be allowed as an expense to be pass through in tariffs. The distribution licensee will have to bear such charges;

Provided further that the deemed generation conditions stipulated above shall be applicable only on those Small Hydro projects and Solar PV and Solar Thermal projects who have signed a long term PPA with the distribution licensee;

Provided also that the deemed generation conditions shall be applicable only on the Small Hydro projects and Solar PV and Solar Thermal projects where the evacuation line is

connected to 11 kV or higher voltage Grid Sub-station."

Stakeholders Comments/Suggestions

1.32.1 UPCL submitted that the regulation does not provide provision of calculation of deemed generation in case of availability of multiple evacuation networks to the generators. Further, Deemed Generation loss shall be permissible only to those eligible categories of generators who are connected on the Independent feeders. Majority of the plants are installed in rural and hilly areas and many of them are evacuated through mixed feeders on which number of consumers are also connected. These kinds of feeders remain in planned or unplanned shutdowns due to various reasons and exigencies.

With regard to Small Hydro Plants, UPCL submitted that the regulation should explicitly mention that outage of 48 hours shall be excluding force majeure conditions and synchronisation time taken by the generator for synchronising the machines on the grid. Further, no separate time should be allowed on account of the synchronisation time for calculation of the deemed generation loss otherwise generator may be lackadaisical towards prompt and timely synchronisation of the machine and even otherwise it is not technically feasible to examine whether the efforts were made or not. Further, with regard to Solar power plants, UPCL submitted that considering the generation window of 12 hours in a day in case of Solar plants in comparison to 24 hours for SHPs, the duration of outage on proportionate and equitable basis considering same analogy comes out to be 24 hours in a month in place of 50 hours.

1.32.2 UJVN Ltd. submitted that the above clause is not in consonance with State Grid Code (First Amendment) Regulations, 2022. Therefore, the same kindly be amended as under:

"-In case of Below 33 kV Voltage level, +10% and -9%; and,
-In case of 33 kV and above Voltage level as per State Grid Code."

1.32.3 Ashay Urja Association submitted that Separate clause of Solar power plants may be provided as existing clauses are relevant for Hydro. Variation in voltage outage are considered over 90 minutes which does not hold relevance in the case of Solar power plants as power generated is different during different time of the day.

1.32.4 M/s Siyangad Hydro Pvt. Ltd., M/s Jalandharygad Hydro Pvt. Ltd. and M/s Kakoragad Hydro Pvt. Ltd. submitted that the current exclusion of 48 hrs in a month corresponds to 576 hours in a year, i.e. 6.57% of PLF excluded from deemed generation. With the loss of revenue in case of non-generation of power and exclusion from deemed generation upto 48 hrs in a month, the revenue from assumed 45% PLF for levelized generic tariff cannot be met.

1.32.5 M/s Chamoli Hydro Power Pvt. Ltd., M/s Birahi Ganga Hydro Power Ltd., M/s Himalaya Hydro Pvt. Ltd. and All India Renewable Energy Protection Association submitted that in present scenario, the discom appears to have adopted a policy of not complying with the applicable regulations by resorting to vexatious litigating because it is not a pass-through cost. The Calculation of generation losses due to over-voltage is very onerous and virtually impossible since the voltage levels are continuously fluctuating in UPCLs transmission system.

1.32.6 Uttar Bharat Hydro Power Pvt. Ltd. submitted that incurring power generation losses due to grid outages exceeding the allowed 48 hours/month as per RE Regulations. The voltage levels in the distribution licensees 33 kV transmission lines is not maintained in +6% to -9% range as a result of which we are suffering generation losses.

In such situation deemed generation claims are being put to the discom, however discom adopts an approach suggesting that such claims are not provided in the RE policy or the regulations. Under these circumstances, all financial losses are borne solely by SHPs. Suitable changes to the regulations are necessary to restore balance and equity between all stakeholders.

Under present regulations, the calculation of generation losses (due to forced capacity limitation) are being presented as—"due to over-voltage/under-voltage. However, such claims are not acceptable to Discom as they are not as per UERC guidelines.

It would be more appropriate to consider the highest generation recorded in a given 24 hours period, when the voltage was within limits and compute the generation losses for that particular day during the period when the voltage levels were outside the permitted levels.

Commission's View

1.32.7 With regard to multiple evacuation networks to the generator, it is pertinent to mention that the UPCL specifies the connectivity point/Sub-Station, to which the generating plant is to be connected after detailed study of load flow, voltage profile, Sub-station capacity and other technical parameters etc, at the time of execution of PPA with the generator. Besides it is the duty of the distribution licensee to evacuate power and provide connectivity. Further, it is to be noted that deemed generation cannot be disallowed on the basis of connectivity of the plant to independent feeder or mixed feeder. It would be appropriate for distribution licensee to strengthen its distribution network including evacuation system so that the power generated from such plant can be supplied which would in return help the distribution licensee to meet its RPO and also the demand in the State. Accordingly, the Commission does not find it prudent to change the provision of the said regulation in this regard. However, the Commission directs UPCL to strengthen the evacuation systems of that particular area where such plants are connected or proposed to be connected.

Further, force majeure conditions are already excluded from the limit of 48 hours in a month for Small Hydro Plants and such events already are defined in the Regulations. UPCL's comments regarding exclusion of synchronisation time taken by the generator for synchronising the machines on the grid does not find merit as due to outages the generator's machines were forced to stop and no generator would want to delay the synchronization just to claim deemed generation. However, the same can be examined on case to case basis and if in any case it is observed that the generator took exceptionally long time to synchronise the machines the delay may not be allowed.

With respect to UPCL's comments regarding the generation window of 12 hours in a day in case of Solar plants in comparison to 24 hours for SHPs, the duration of outage on proportionate and equitable basis considering same analogy comes out to be 24 hours in a month in place of 50 hours in a year, the Commission accepts the same partially and allows exclusion of 12 hours in a month as force majeure for calculation of deemed generation. Further, the distribution licensee is required to maintain and augment its infrastructure so as to ensure that generation is not lost. Any loss of generation unless due to force majeure conditions would be on account of inefficiency

of the licensee and the same cannot be in any manner allowed to be pass through in tariffs.

1.32.8 In the matter of proposal made by UJVN Ltd. w.r.t. maintenance of voltage range, it is pertinent to mention that the Commission vide UERC (State Grid Code), Regulations, 2022 specified maximum and minimum operating range within which all constituents shall make possible efforts to ensure grid voltage as follows:

Voltage – (kV line)			Minimum (%)	Maximum (%)
Nominal	Maximum	Minimum		
765	800	728	4.58%	-4.84%
400	420	380	5.00%	-5.00%
220	245	198	11.36%	-10.00%
132	145	122	9.85%	-7.58%
66	72	60	9.09%	-9.09%
33	36	30	9.09%	-9.09%

Further, with regard to 11 kV line, UERC (Standard of Performance) Regulations, 2022 specifies that the licensee shall maintain the voltage in the range of +6% and -9% in case of high voltage.

The proposal made by the UJVN Ltd. may create ambiguity among the developers as *"-In case of Below 33 kV Voltage level, +10% and -9%;"* covers LT lines also and as per last proviso of this regulation, deemed generation is applicable only if the SHPs, Solar Thermal and Solar PV are connected to 11 kV line or above.

1.32.9 Based on the above discussions, the Commission decides to change the above provision to align with the State Grid Code and Supply Code. Accordingly, the final regulation shall be read as follows:

"(Applicable only in case of Small Hydro Generating Plants & Solar PV Plants & Solar Thermal Projects excluding Solar power plants installed under net metering arrangement)

(1) After the COD of the Project, loss of generation at the Station on account of reasons attributed to the following, or any one of the following, shall count towards Deemed Generation:

- *Non availability of evacuation system beyond the Interconnection Point; and*
- *Receipt of backing down instructions from the SLDC.*

Provided that the following shall not count towards Deemed Generation:

(i) The loss of generation at the Station on account of aforesaid factor(s) but attributed to the Force Majeure event(s);

(ii) The loss of generation at the Station due to the interruptions/outages attributed to the aforesaid factor(s) during the period in which the total duration of such outages/ interruptions, other than that excluded under above, is within the limit of:

- *48 hours in a month in case of small hydro project, and*
- *12 hours in a month in case of solar PV and Solar Thermal Project.*
- *Provided that for working out the ceiling of 12 Hrs. in a month for Solar PV and Solar Thermal Projects, the interruptions/outages occurring during 18.00 hours in the evening to 6.00 hours in the morning shall not be counted;*

The distribution licensee shall be required to maintain the voltages at the point of interconnection with the project within the limits stipulated hereunder, with reference to declared voltage:

- *In the case of 11 kV voltage level, +6% and -9%; and,*
- *In the case of 33 kV and above Voltage level, as per State Grid Code.*

Any loss in generation due to variations in the voltage beyond the limits specified above shall be reckoned as deemed generation provided such loss of generation results in reduction of more than 25% of capacity output.

(2)The period of outage/interruption on account of such factor(s) specified in sub-Regulation 1 and 2 above, shall be reconciled on monthly basis and the loss of generation at the station towards Deemed Generation after accounting for the events specified under sub-Regulation 1 (i) & (ii) above, shall be computed on following considerations:

(i) The recovery on the above account shall be admissible if the actual energy generated during the year is less than the normative CUF specified in the Regulation for small hydro projects and Solar PV and solar thermal projects (in case of project opting for generic tariff) or the CUF considered for recovery of fixed charges (in case of project specific tariff is applicable) for small hydro projects and solar PV and solar thermal projects. In case the sum of actual energy generated and the deemed generation during the year exceeds the CUF at which the recovery of fixed charges has been envisaged, then the deemed generation alongwith the actual energy generated will be allowed only upto the CUF considered.

(ii) The generation loss towards the Deemed Generation in accordance with sub-Regulation

(i) above, if any, during the month shall be considered on the pro-rata basis on the number of hours lost based on the actual average generation achieved during that month divided by the total number of hours available during the month reduced by the number of hours outage/interruption occurred in the system.

(iii) The generation loss towards the Deemed Generation (in MWh) in accordance with sub-Regulation (ii) above, if any, during the month shall be considered as the summation of the product of number of hours the variations in voltage beyond the specified limit existed and the Generation lost (in MW) due to the variation in the voltage beyond the specified limit. The Generation lost (in MW) would be the difference between the following:

(a) Minimum of the generation (in MW) before the variation in voltage occurred and the generation (in MW) achieved after 90 minutes immediately after variation in voltage was restored within the specified limit would be treated as the "Actual Generation" during the period when voltage variations occurred; and

Provided that if such variation in voltage continues for the entire month, generation (in MW) before such variation in voltage occurrence would be treated as the "Actual Generation".

(b) The generation achieved during the period when variation in voltages took place.

(3) The distribution licensee shall pay for the saleable deemed generation, on annual basis, for Small Hydro projects and Solar PV and Solar Thermal projects worked out on the basis of the deemed generation on the above lines, at the generic/project specific tariffs as applicable in accordance with the applicable RE Regulations. The settlement of payment towards deemed generation charges shall be carried out within 3 months of the completion of the financial year.

Provided that any charges paid by the distribution licensee towards deemed generation shall not be allowed as an expense to be pass through in tariffs. The distribution licensee will have to bear such charges;

Provided further that the deemed generation conditions stipulated above shall be applicable only on those Small Hydro projects and Solar PV and Solar Thermal projects who have signed a long term PPA with the distribution licensee;

Provided also that the deemed generation conditions shall be applicable only on the Small Hydro projects and Solar PV and Solar Thermal projects where the evacuation line is connected to 11 kV or higher voltage Grid Sub-station."

Annexure-I

List of Stakeholders

Sr. No.	Name	Designation	Organisation	Address
1.	Naresh Kumar	Chief Engineer (Commercial)	Uttarakhand Power Corporation Ltd.	Victoria Cross Vijeta Gabar Singh Bhawan, Kanwali Road, Dehradun.
2.	Sh. Rajeev Gupta	Chief Project Officer	Uttarakhand Renewable Energy Development Agency	Urja Park Campus, Industrial Area, Patel Nagar, Dehradun
3.	Sh. Purushottam Singh	Director (Operations)	UJVN Ltd.	"Ujjwal", Maharani Bagh, GMS Road, Dehradun - 248006
4.	Sh. Arun Gupta	Chairman-cum-Managing Director	M/s Him Urja Pvt. Ltd.	S-321, Panchsheel Park, New Delhi-110017
5.	Sh. Manish Kathaith	Secretary	M/s Akshay Urja Association	47/1, Chakrata Road, Vasant Vihar, Dehradun-248006
6.	Sh. Vivek Ranjan	Manager (Regulatory)	M/s Amplus Energy Solutions Pvt. Ltd.	Palm Square Building, 6th Floor, Golf Course Extension Road, Sector-66, Gurgaon, Haryana-122102
7.	Sh. Jogendra Behera	CRO & Vice President (Regulatory & Market Economics)	Indian Energy Exchange Ltd. (IEX)	Plot No. C-001/A/1, 9th Floor, Max Towers, Sector 16B, Noida, Gautam Buddha Nagar, Uttar Pradesh – 201301.
8.	Sh. Neeraj Kuldeep	Senior Programme Lead	Council on Energy, Environment and Water (CEEW)	ISID Campus, 4, Vasant Kunj Institutional Area New Delhi - 110070
9.	Sh. Madhav K. Kejriwal	Director	M/s Siyangad Hydro Pvt. Ltd.	24/73, Birhana Road, Kanpur - 208001, Uttar Pradesh
10.	Sh. Madhav K. Kejriwal	Director	M/s Jalandharygad Hydro Pvt. Ltd.	24/73, Birhana Road, Kanpur - 208001, Uttar Pradesh
11.	Sh. Madhav K. Kejriwal	Director	M/s Kakoragad Hydro Pvt. Ltd.	24/73, Birhana Road, Kanpur - 208001, Uttar Pradesh
12.	Sh. Harindra Kumar Garg	Chairman	SIDCUL Manufacturers Association of Uttarakhand	SMAU Office, 4th Floor, Pentagon Mall, SIDCUL, Haridwar.
13.	Sh. B. Sadasiva Reddy	Director	M/s Chamoli Hydro Power Pvt. Ltd.	Plot No. 813, Road No. 41, Jubilee Hills, Hyderabad-500033
14.	Sh. Sushil Kejriwal	Director	M/s Birahi Ganga Hydro Power Ltd.	32-33, Nehru Place, Flat No-403, New Delhi-110019
15.	Sh. Sandip Kumar Singh	-	M/s D S Solar Energy Private Limited	-
16.	Sh. Satyendra	Dy. GM	M/s Fairdeal Solar	Dehradun

Sr. No.	Name	Designation	Organisation	Address
	Kumar	(Finance)	Energy Private Limited	
17.	Sh. Satyendra Kumar	Dy. GM (Finance)	M/s Divyasky Energy Private Limited	Dehradun
18.	Sh. K.V. Vikram Reddy	Managing Director	M/s Himalaya Hydro Pvt. Ltd.	Plot No. 46, Flat No. 202, MLA & MPs Colony, Road No. 10-C, Jubilee Hills, Hyderabad-500033
19.	-	-	All India Renewable Energy Protection Association	Pocket A1/658, Sector-6, Room No. 2, Rohini, Delhi
20.	Sh. Naresh Goel	CEO	M/s Uttar Bharat Hydro Power Pvt. Ltd.	Plot No. 37, 3rd Floor, Saraswati Kunj, Golf Course Road, Sector-54, Gurugram, Haryana-122002

List of Participants

Sr. No.	Name	Designation	Organisation	Address
1.	Sh. Himanshu Awasthi	Executive Director	UJVN Ltd.	"Ujjwal", Maharani Bagh, GMS Road, Dehradun - 248006
2.	Sh. S.N. Prajapati	Executive Engineer (Solar)	UJVN Ltd.	"Ujjwal", Maharani Bagh, GMS Road, Dehradun - 248006
3.	Sh. S.K. Baunsiyal	Dy. GM	UJVN Ltd.	"Ujjwal", Maharani Bagh, GMS Road, Dehradun - 248006
4.	Sh. Sanjeev Upadhyaya	President	M/s Khutani Power	-
5.	Sh. R.C. Sharma	Director	M/s Khutani Power	-
6.	Sh. Akshay Negi	Member	M/s Akshay Urja Association	47/1, Chakrata Road, Vasant Vihar, Dehradun-248006
7.	Sh. Sandeep Bhatt	Sr. Project Officer	Uttarakhand Renewable Energy Development Agency	Urja Park Campus, Industrial Area, Patel Nagar, Dehradun
8.	Sh. J.S. Bisht	Director	M/s Ados Renewable Pvt. Ltd.	Office: G-28, Nehru Colony, Dehradun
9.	Sh. Arun Gupta	Chairman-cum-Managing Director	M/s Him Urja Pvt. Ltd.	S-321, Panchsheel Park, New Delhi-110017