सत्यमेव जयते

The Gazette of Meghalaya

EXTRAORDINARY

PUBLISHED BY AUTHORITY

No. 123 **Shillong, Wednesday, May 15, 2024** **25th Vaisakha, 1946 (S. E.)**

PART-IIA

MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION

NOTIFICATION

The 9th May, 2024.

No.MSERC/Green Tariff/Regn/2023/01. – In exercise of the powers conferred under section 181, of the Electricity Act, 2003 (36 of 2003), read with section 42, section 61 and section 86 thereof and all other powers enabling in this behalf, the Meghalaya State Electricity Regulatory Commission after previous publication hereby makes the following Regulations, namely -

Meghalaya State Electricity Regulatory Commission (Terms and Conditions of Green Energy Open Access) Regulations 2023

CHAPTER 1

PRELIMINARY

1. Short Title, Extent and Commencement

(1) These Regulations may be called the Meghalaya State Electricity Regulatory Commission (Terms and Conditions of Green Energy Open Access) Regulations, 2023.

(2) These Regulations shall come into force from the date of their notification in the Official Gazette of Meghalaya.

(3) These Regulations shall extend to the whole of the State of Meghalaya.

2. Objective

The objective of these regulations is to provide a methodology for the determination of Open Access charges and Banking charges for Green Energy Open Access consumers.

3. Definitions

(1) In these regulations, unless the context otherwise requires,

(a) **"Act"** means the Electricity Act, 2003 (36 of 2003);

(b) **"Banking"** means the surplus green energy scheduled and injected into the grid and credited with the distribution licensee by the Green Energy Open Access consumers;

(c) **"Banking Cycle"** means a continuous period of 3 months starting from the date of commencement of banking provided that the Distribution Licensee depending upon the feasibility and for reasons to be recorded in writing shall be entitled to extend the period of banking cycle not beyond the end of a financial year and such extension of banking cycle shall not be altered more frequently than once in a financial year.

(d) **"Central Commission"** means the Central Electricity Regulatory Commission referred to in sub-section (1) of Section 76 of the Electricity Act 2003;

(e) **"Central Nodal Agency"** means a Central Nodal Agency as notified by the Central Government to set up and operate a single window green energy open access system for renewable energy;

(f) **"Commission"** means the Meghalaya State Electricity Regulatory Commission constituted under the Electricity Act 2003;

(g) **"Day Ahead Market (DAM)"** means a market where Day Ahead Contracts are transacted on the Power Exchange(s);

(h) **"Forum of Regulators"** means the Forum as referred to in sub-section (2) of section 166 of the Act;

(i) **"Fossil Fuel"** means fuels such as coal, lignite, gas, liquid fuel or combination of these as its primary source of energy, which are used in Thermal Generating Station for generating electricity;

(j) **"Green Energy"** means the electrical energy from renewable sources of energy including hydro and storage (if the storage uses renewable energy) or any other technology as may be notified by the Government of India from time to time and shall also include any mechanism that utilizes green energy to replace fossil fuels including production of green hydrogen or green ammonia as may be determined by the Central Government;

(k) **"Green Energy Open Access Consumer"** means any person who has contracted demand or sanctioned load of 100 kW or more or such other limit as may be specified

by Commission from time to time, except for captive consumers, who are supplied with electricity from green energy sources for their own use by a licensee or the Government or by any other person engaged in the business of supplying electricity to the public under this Act or any other law for the time being in force and includes any person whose premises are for the time being connected for the purpose of receiving green energy with the works of a licensee, the Government or such person, as the case may be.

(l) **"Medium-term open access"** means the open access for a period exceeding three months but not exceeding three years.

(m) **"Month"** means a calendar month as per the Gregorian calendar;

(n) **"State Nodal Agency"** means the nodal agency defined in Regulation 7 of these regulations;

(o) **"Open access"** means the non discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a generating company in accordance with these regulations and includes long- term open access, medium-term open access and short-term open access.

(p) **"Rules"** means the Electricity (Promoting use of Renewable Energy Through Green Energy Open Access) Rules, 2022 and subsequent amendments;

(q) **"Renewable Energy Sources"** means renewable electricity generating sources such as small hydro, wind, solar, biomass, bio fuel, cogeneration (including biogases based co-generation), urban or municipal waste and such other sources as recognized or approved by MNRE or State Government;

(r) **"SERC"** means the State Electricity Regulatory Commission;

(s) **"Short-term open access"** means open access for a period up to one month at a time.

(t) **"SLDC"** means the State Load Dispatch Centre established under sub section (1) of section 31 of the Electricity Act 2003;

(u) **"State Grid Code"** means the State Grid Code notified by the Commission under clause (h) of sub-section (1) of section 86 of the Act, applicable on the date of commencement of these regulations and as amended from time to time;

(v) **"Standby charges"** means the charges applicable to green energy open access consumers against the standby arrangement provided by the distribution licensee, in case such green energy open access consumer is unable to procure/schedule power from the generating sources with whom they have the agreements to procure power due to outages of generator, transmission systems and the like;

(w) **"State Transmission Utility (STU)"** means the State Electricity Board or the Government Company notified by the State Government under sub-section (1) of section 39 of the Electricity Act 2003;

(x) **"Wheeling"** means the operation whereby the distribution system and associated facilities of a transmission Licensee or distribution Licensee, as the case may be, are used by another person for the conveyance of electricity on payment of charges to be determined under section 62 of the Electricity Act 2003;

(2) Words and expressions used and not defined in these regulations but defined in the Act or IEGC or State Grid Code or any other regulation of the Commission shall have the meaning assigned to them under the Act or the IEGC or the State Grid Code or any other regulation of the Commission as the case may be.

4. Scope and Applicability

These regulations shall be applicable for allowing Open Access of electricity generated from green energy sources as defined under clause (1) of Regulation 3 of these Regulations, including the energy from non-fossil fuel-based Waste-to-Energy plant for use of Intra-State Transmission System (InSTS) or distribution system or both, which are incidental to Inter- State Transmission of electricity.

CHAPTER 2

GENERAL PROVISIONS OF OPEN ACCESS

5. Categorization of Open Access :

The open access consumers shall be classified into the following categories based on the duration of use of the Intra - state transmission and/or distribution system

i. Long-term Open Access consumers - persons availing or intending to avail the open access for a Period equal to or more than three years,

ii. Medium-term Open Access consumers - persons availing or intending to avail the open access for a period more than three months and less than 3 years,

iii. Short-term Open Access consumers- persons availing or intending to avail the open access for a period of one month at a time.

Provided that the short-term open access consumers shall be eligible & re-eligibie to obtain fresh entitlement on filing of application after the expiry of his term and subject to availability. Such eligibility shall be on priority determined on the basis of the date of application.

6. Eligibility criteria for Green Energy Open Access :

1. Subject to the provisions of these Regulations and system availability, consumers, licensee and/or "Green Energy" generating stations shall be eligible for Green Energy Open Access to the inter-state as well as intra-state transmission.

2. The consumers who have contracted demand or sanctioned load of hundred kW (100 kW) and above shall be eligible to take power through Green Energy Open Access and there shall be no limit of supply of power for the captive consumers taking power under Green Energy Open Access.

3. The limit of open access that can be granted will be subject to the voltage level to which the Green Energy Open Access consumer is connected.

    i. For consumers connected at 11 KV level, the open access that can be granted is between 100 KW but less than 2 MW.

    ii. For consumers connected at 33 KV level, the open access that can be granted is between 2 MW but less than 5 MW.

    iii. For consumers connected at 33 KV level and above, the open access that can be granted is above 5 MW in which case, the consumer would be deemed a "User" of the intra state transmission network.

4. Provided that such open access shall be for a minimum twelve time blocks of 15 minutes time interval during a day, for which the consumer shall not change the quantum of power consumed through open access subject to the condition that all such open access bids for such continuous time blocks had been cleared by the power exchanges. In the event of non-clearing of open access bids for continuous time blocks the resultant power flow, if any, shall be deemed to have been availed from the distribution utility for the quantum that was placed as bids

5. Provided further that such consumer of a distribution licensee shall be entitled for seeking open access provided he is connected through an independent feeder emanating from a grid sub-station. In case of more than one such consumer on such independent feeder, the following condition shall apply :-

    i. A group of two or more consumers of a distribution licensee having a contracted demand or sanctioned load of hundred (100) kW and above connected to the distribution system of licensee at 11 kV or above through an independent feeder emanating from a grid substation, shall also be entitled for seeking open access if all such consumers collectively apply for open access through a group representative to be nominated by all such consumers on that feeder provided that all such consumers shall have necessary infrastructure for time-block wise energy metering and accounting installed at their premises and provided further that schedule of power through open access of individual consumers shall also be supplied by the group representative.

    ii. However, all the individual consumers of the group shall have to separately pay the prescribed application fee and SLDC charges.

    iii. Alternately if such a group of consumers agree for a single point connection, the group as a whole shall be treated as a single consumer for all practical purposes including scheduling, metering and billing and in that case individual ABT metering equipment will not be required. The application fee and SLDC charges shall also be charged for a

single application. The billing shall be done based on ABT meter installed on the independent feeder at the sub-station and the contract demand of the group shall be taken as the sum of the contract demands of the individual consumers.

iv. Provided further that the consumers of a distribution licensee with contract demand of 100KW or above who are not on independent feeders may be allowed open access subject to the condition that they agree to the system constraints as well as the power cut restrictions imposed by the distribution licensee serving them. In such cases, under drawl, if any, on account of power cut restrictions shall not be compensated.

v. Provided further that the grant of open access to such consumers shall be subject to the condition that if power is scheduled to be sold/procured through open access in any timeslot of the day, it shall not be less than 100 KW.

vi. Provided further that such consumers, having been declared insolvent or bankrupt or having outstanding dues against him for more than two months billing of the distribution/ transmission licensee or having a case of unauthorized use of electricity/theft of electricity pending against him at the time of application, shall not be eligible for open access.

vii. The maximum admissible drawl in any time block during the day for green energy open access consumer shall be the difference of sanctioned contract demand and scheduled entitlement.

viii. Green Energy Open Access consumer shall have the requisite communication system in place to facilitate seamless communication of data from the Green Energy Open Access consumer or Green Energy generating station to State Nodal Agency (SLDC), ALDC (Area Load Despatch center) and LMU (Load Management Unit) as the case may be depending on the voltage level of connectivity. Provided that the data of generators having collective capacity of 1 MW and above shall be utilized by the state Nodal Agency (SLDC) for energy accounting and real time grid management.

7. Nodal Agency :

(1) The Central Government has notified the 'POSOCO' as the Central Nodal Agency to set up and operate single window green energy open access system for renewable energy.

(2) SLDC shall be the State Nodal Agency for grant of green energy open access for short term (upto a month) for consumers connected at 33 KV and above , while the distribution licensee shall be the nodal agency for grant of Green Energy Open Access for short term (upto a month) for consumers connected at 11 KV and below. The State Transmission Utility (STU) shall be the Nodal Agency for grant of Green Energy Open Access for medium (three months to three years) and long term (more than three years).

(3) All the applications related to connectivity and green energy open access shall be received and processed at STU Headquarter in accordance with the procedure and formats devised by STU. The STU may be guided by the procedure prepared by POSOCO (The Grid Controller of India Ltd.) for grant of green energy open access.

8. Procedure for grant of Green Energy Open Access :

(1) The detailed procedure for grant of connectivity and Green Energy Open Access including the application format and applicable Bank Guarantees/Fee/Charges etc., shall be prepared by the State Nodal agency, within a period of 30 days from the date of notification of these regulations and filed in this Commission for approval.

(2) All the applications for the Green Energy Open Access complete in all respects, shall be submitted on the portal set up by the Central Nodal Agency and these applications shall get routed to the State nodal agency as specified by the Commission under these Regulations for grant of green energy open access.

(3) The State Nodal Agency shall, by an order in writing, approve the applications for the Green Energy Open Access within a period of fifteen days from the date of receipt of complete application for connectivity / open access, failing which it shall be deemed to have been approved subject to the fulfillment of the technical requirements as specified by the Commission :

Provided that the order of processing of such applications for Green Energy Open Access shall be first in first out.

(4) The Short term and medium term open access shall be allowed, if there is sufficient spare capacity available in the transmission system without any augmentation whereas for long term open access, the transmission system may be augmented if required :

Provided that priority shall be given to long term in the existing system if spare capacity is available and further, open access for non-fossil fuel sources shall be given priority over the open access from the fossil fuel.

Provided further that during congestion in the Transmission network, the order of curtailment of open access for non-fossil fuel sources shall be after the curtailment of open access from the fossil fuel.

Provided further that computation of transmission capacity available for open access/Green Energy open access will be in line with the methodology employed for relieving congestion in real time operation as per CERC (Measures relieve congestion in real time operation) Regulations, 2009 at the National, Regional, Inter State and Intra State levels.

(5) No application for open access shall be denied unless the applicant has been given an opportunity of being heard in the matter by the State Nodal Agency and all orders denying open access shall be speaking orders.

(6) Appeals against an order of the State Nodal Agency, shall lie before the Commission, within a period of thirty days from the date of receipt of order.

(7) The Commission shall dispose the appeal within a period of three months and the order issued by it, shall be binding on the parties.

9. Green Energy Certificate

The Nodal agency, as the case may be, shall give Green Energy certificate on yearly basis to the consumers for the green energy supplied by the licensee to consumer on his request beyond the renewable purchase obligation of the consumers.

CHAPTER 3

GREEN ENERGY OPEN ACCESS CHARGES

10. Green Energy Open Access Charges

The charges on Green Energy Open Access consumers shall be as follows : -

(1) Transmission charges;

(2) Wheeling charges;

(3) Cross subsidy Surcharge;

(4) Standby charges wherever applicable;

(5) Banking Charges and

(6) Other fees and charges such as SLDC fees and scheduling charges, deviation settlement (DSM) charges as per the relevant regulations of the Commission.

11. Transmission Charges

a) For use of inter-State transmission system : As specified by the Central Commission from time to time.

b) For use of intra-State transmission system : Charges shall be levied on Green Energy Open Access Consumers as determined by the Commission in Transmission Tariff Orders from time to time :

Provided that, where a dedicated transmission system for open access has been constructed by Transmission Licensee and used for exclusive use of an Open Access Consumer, the Transmission Charges for such dedicated system shall be worked out by Transmission Licensee and shall get the same approved from the Commission. The Charges shall be borne entirely by such Open Access Consumer till such time its surplus capacity, if any, is allotted and used by other persons or for other purposes.

Provided further that after allotment of such surplus capacity to other open access consumers the charges shall be borne proportionately in the ratio of allotment of total capacity amongst open access consumers :

Provided also that after utilization of such surplus capacity for other purposes by the transmission licensee, the charges shall be reduced to the extent surplus capacity is used by the Transmission Licensee :

Provided also that transmission charges shall not be applicable in case dedicated lines (as defined under Section 2(16) of the Act) constructed by generator are being utilized for supply to the Green Energy Open Access Consumer.

Provided also that in addition to the transmission charges, Intra-State transmission loss shall be applicable to consumers seeking Green Energy Open Access as may be determined and notified by the State Load Dispatch Center, Meghalaya State from time to time in accordance with applicable Regulations.

12. Wheeling Charges : Wheeling Charges shall be levied on Green Energy Open Access Consumers as determined by the Commission in Retail Supply Tariff Order issued from time to time :

Provided that, where a dedicated distribution system for open access has been constructed by Distribution Licensee and used for exclusive use of an Open Access Consumer, the Wheeling Charges for such dedicated system shall be worked out by Distribution Licensee and shall get the same approved by the Commission. Such Charges shall be borne entirely by such Open Access Consumer till such time the surplus capacity, is allotted and used by other persons or for other purposes.

Provided further that after allotment of such surplus capacity to other open access consumers, the charges shall be borne proportionately in the ratio of allotment of total capacity amongst the Green Energy Open Access Consumers :

Provided also that after utilization of such surplus capacity for other purposes by the Distribution licensee, the charges shall be reduced to the extent surplus capacity is used by Distribution Licensee :

Provided also that wheeling charges shall not be applicable in case dedicated lines (as defined under Section 2(16) of the Act) constructed by generator are being utilized for supply to the Open Access Consumer.

Provided also that in addition to the wheeling charges, wheeling loss shall be applicable to consumers seeking Green Energy Open Access as determined in the Retails Supply Tariff Order of the Commission issued from time to time.

13. Cross subsidy surcharge: Cross Subsidy surcharge shall be levied on Green Energy Open Access Consumers as determined by the Commission in its Retail Supply Tariff Order issued from time to time :

Provided that Green Energy Open Access Consumer, in addition to transmission and wheeling charges, shall pay applicable cross subsidy surcharge on the actual energy drawn during the month through open access. The amount of surcharge shall be paid to the Distribution Licensee of the area of supply from whom the consumer was availing supply before seeking open access :

Provided further that such cross-subsidy surcharge shall not be levied in case a person is availing green power from the plant established as captive generation plant for his own use;

Provided also that cross subsidy surcharge shall not be applicable in case Green Energy Open Access Consumer is availing power from a non-fossil fuel-based Waste-to-Energy plant.

Provided also that cross subsidy surcharge shall not be applicable if green energy drawn through green energy open access is utilized for production of green hydrogen and green ammonia.

Provided further that the cross-subsidy surcharge for Green Energy Open Access Consumers purchasing green energy, from a generating plant using renewable energy sources, shall not be increased by more than fifty percent of the cross-subsidy surcharge fixed for the year in which open access is granted during twelve years from the date of commissioning of the generating plant using renewable energy sources.

Provided also that the cross-subsidy surcharge shall not exceed 20% of the average cost of supply

14. Additional Surcharge : Additional Surcharge shall be levied on Green Energy Open Access Consumers as determined by the Commission in its Retail Supply Tariff Order from time to time.

Provided that Green Energy Open Access Consumers, in addition to transmission charges, wheeling charges and cross subsidy surcharge, shall pay additional surcharge on the actual energy drawn during the month through open access. The amount of additional surcharge shall be paid to the Distribution Licensee of the area of supply from whom the consumer was availing supply before seeking open access.

Provided further that the additional surcharge shall not be applicable for Green Energy Open Access Consumers, if fixed charges are being paid by such a consumer ;

Provided also that such additional surcharge shall not be levied in case a person is availing green power from the plant established as captive generation plant for his own use.

Provided also that additional surcharge shall not be applicable in case Green Energy Open Access Consumer is availing power from a non-fossil fuel based Waste-to-Energy Plant.

Provided also that the additional surcharge shall not be applicable if green energy drawn through green energy open access is utilized for production of green hydrogen and green ammonia.

Provided also that additional surcharge shall not be applicable in case of green energy is supplied to the Green Energy Open Access Consumers from offshore wind projects which are commissioned upto December, 2025.

15. Standby Facility and Charges

a) In case the green energy open access consumer is unable to procure/schedule power from the generating sources with whom they have the agreements to procure power due to outages of generator, transmission systems and the like, standby arrangement shall be provided to Green Energy Open Access consumer by the distribution licensee of the area of its supply.

b) The Standby Charges for Green Energy Open Access for such standby arrangement shall be 125% of normal tariff of the consumer category: Provided that such Standby Charges shall not be applicable if the Green Energy Open Access Consumers have given notice, at least a day in advance before gate closure in DAM on 'D-1' day, 'D' being the day of delivery of power, for standby arrangement to the distribution licensee.

c) The Standby Charges for Green Energy Open Access shall be computed in Rs/kWh and it shall be charged on the actual energy drawn by the consumer from distribution licensee during the period of standby availed by Green Energy Open Access consumer in case of outage of RE generator under Green Energy Open Access.

16. Banking Facility and Charges

(a) Banking facility shall be provided to the consumers availing Green Energy Open Access. The surplus energy from a 'Green Energy' Generating Station after set off shall be banked with the Distribution Licensee.

(b) The banking facility including injection of surplus energy and drawal of banked energy shall be subject to scheduling.

(c) The Banking Charges shall be adjusted in kind @ 8% of the energy banked.

(d) The Banking of energy shall be permitted atleast on a monthly basis on payment of banking charges to the Distribution Licensee.

Provided that the credit for banked energy shall not be permitted to be carried forward to subsequent banking cycles and shall be adjusted during the same banking cycle as per the energy injected in the respective Time of Day ('TOD') slots determined by the Commission in its Orders determining the tariff of the Distribution Licensee; Provided further that, the energy banked during peak TOD slots shall be permitted to draw during peak as well as off-peak TOD slot by paying the banking charges as specified in Clause 15(c) of this Regulation. However, the energy banked during off-peak TOD slots shall be permitted to draw during off-peak ToD slot only.

Provided also that the licensee shall reconcile the banking charges recovered as mentioned in clause 15(c) above at the end of each financial year on the basis of actual cost of power purchase arranged by the licensee to return banked energy and claim additional expenses, if any, through a separate petition alongwith truing up petition of Retail supply tariff of subsequent financial year.

(e) The un-utilized surplus banked energy shall be considered as lapsed at the end of each banking cycle :

Provided that, the RE Generating Station would be entitled to Renewable Energy Certificates to that extent.

17. Other Charges

In addition to above charges, the consumer availing Green Energy Open Access shall also pay the following charges determined by the Commission as per the provisions of the relevant regulations of the Commission :

a) Applicable SLDC fees and charges

b) Scheduling charges

c) RE Deviation Settlement Charges

18. Collection and Disbursement of Charges

The Charges in respect of Green Energy Open Access consumers shall be payable to the State Nodal Agency in accordance with the terms and conditions of payment as specified by the State Nodal Agency. State Nodal Agency shall disburse the amount received to the appropriate licensees i.e., Transmission charges to the STU and Distribution network charges to the Distribution licensee.

CHAPTER 4

MISCELLANEOUS

19. Power to give directions

The Commission may from time to time issue such directions and orders as considered appropriate for implementation of these Regulations

20. Power to relax

The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

21. Power to amend

The Commission may from time to time add, vary, alter, suspend, modify, amend, or repeal any provisions of these Regulations.

22. Power to remove difficulties

If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by an order, make such provisions, not inconsistent to the provision of the Act and these Regulations, as may appear to be necessary for removing the difficulty.

23. Interpretation

The decision of the Commission regarding the interpretation of these Regulations shall be final and binding.

Secretary
Meghalaya State Electricity Regulatory Commission.

SHILLONG: Printed and Published by the Director, Printing and Stationery, Meghalaya, Shillong.
(Extraordinary Gazette of Meghalaya) No. 245 - 730 + 5 — 15 – 5 – 2024.
website:- http://megpns.gov.in/gazette/gazette.asp

सत्यमेव जयते

The Gazette of Meghalaya

EXTRAORDINARY

PUBLISHED BY AUTHORITY

No. 124 **Shillong, Wednesday, May 15, 2024** **25th Vaisakha, 1946 (S. E.)**

PART-IIA

MEGHALAYA STATE ELECTRICITY REGULATORY COMMISSION

NOTIFICATION

The 9th May, 2024.

No.MSERC/RA-REG/2023/01. – In exercise of the powers conferred under section 181 of the Electricity Act, 2003 (36 of 2003), read with section 61, 66, and 86 thereof and all other powers enabling it in this behalf, the Meghalaya State Electricity Regulatory Commission, after previous publication, hereby makes the following Regulations, namely, **Meghalaya State Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2023.**

Chapter 1

Preliminary

1. Short Title, Extent, and Commencement

1.1. These Regulations may be called the Meghalaya State Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2023.

1.2. These Regulations shall extend to the whole state of Meghalaya.

1.3. These Regulations shall come into force from the date of their notification in the Official Gazette.

2. Objective

2.1. The objective of these Regulations is to enable the implementation of Resource Adequacy framework by outlining a mechanism for planning of generation and

transmission resources for reliably meeting the projected demand in compliance with specified reliability standards for serving the load with an optimum generation mix.

2.2. The Resource Adequacy framework shall cover a mechanism for demand assessment and forecasting, generation resource planning, procurement planning, and monitoring and compliance.

3. Scope and Applicability

3.1. These Regulations shall apply to the generating companies, distribution licensees, State Load Despatch Centre, State Transmission Utility, and other grid connected entities and stakeholders within the State of Meghalaya.

4. Definitions

4.1. In these Regulations, unless the context otherwise requires,

a. **"Act"** means the Electricity Act, 2003 (36 of 2003) and subsequent amendments thereof.

b. **"Authority"** means Central Electricity Authority referred to in sub-section (1) of **Section 70** of the Act.

c. **"Capacity Credit"** or **"CC"** means a percentage of a resource's nameplate capacity that can be counted towards resource adequacy requirements.

d. **"Commission"** or **"State Commission"** means the Meghalaya Electricity Regulatory Commission (SERC) constituted under the Act.

e. **"Expected Energy Not Served"** or **"EENS"** means the expected amount of load (MWh) that may not be served for each year within the time horizon for Resource Adequacy planning.

f. **"Loss of Load Probability"** or **"LOLP"** means probability that a system's load will exceed the generation and firm power contracts available to meet that load in a year.

g. **"Medium term"** means ten years for development of demand forecast, generation resource plan, and procurement plan.

h. **"Medium-Term Distribution Resource Adequacy Plan"** or **"MT-DRAP"** means plan for assessment of medium-term resource adequacy by the distribution licensee.

i. **"Net Load"** means the load derived upon exclusion of actual generation (MW) from renewable energy generation resources from gross load prevalent on the Grid during any time-block.

j. **"Normalized Energy Not Served"** or **"NENS"** is normalization of the EENS by dividing it by the total system load.

k. **"Planning Reserve Margin"** or **"PRM"** means a specified percentage of available capacity above peak demand as may be stipulated by Authority or Commission for the purpose of generation resource planning.

l. **"Resource Adequacy"** or **"RA"** means a mechanism to ensure adequate supply of generation to serve expected demand (including peak, off peak and in all operating conditions) reliably in compliance with specified reliability standards for serving the load with an optimum generation mix with a focus on integration of environmentally benign technologies after taking into account the need, inter alia, for flexible resources, storage systems for energy shift, and demand response measures for managing the intermittency and variability of renewable energy sources.

m. **"Short term"** means five years for development of demand forecast, generation resource plan, and procurement plan,

n. **"Short-Term Distribution Resource Adequacy Plan"** or **"ST-DRAP"** means plan for assessment of short-term resource adequacy by the distribution licensee.

4.2. All other words and expressions used in these Regulations, although not specifically defined herein above, but defined in the Act, shall have the meaning assigned to them in the Act. The other words and expressions used herein but not specifically defined in these Regulations or in the Act but defined under any law passed by the Parliament applicable to the electricity industry in the State shall have the meaning assigned to them in such law.

Chapter 2

General

5. Resource Adequacy Framework

5.1. Resource Adequacy framework entails the planning of generation and transmission resources for reliably meeting the projected demand in compliance with specified reliability standards for serving the load with an optimum generation mix.

5.2. Resource Adequacy framework shall cover following important steps :

a) Demand assessment and forecasting

b) Generation resource planning

c) Procurement planning

d) Monitoring and compliance

5.3. The medium and short term for the purpose of these Regulations shall be considered as :

a) Medium term procurement plan for a period up to ten years; and

b) Short-term procurement plan for a period up to five years.

5.4. The distribution licensee shall develop and prepare Medium-Term Distribution Resource Adequacy Plan (MT - DRAP) and Short-Term Distribution Resource Adequacy Plan (ST- DRAP) in accordance with the conditions outlined under these Regulations.

Chapter 3

Demand Assessment and Forecasting

6. Long-term and Medium-term Demand Forecast

6.1. Demand assessment and forecasting is an important step for Resource Adequacy assessment. It shall entail hourly or sub-hourly assessment and forecasting of demand within the distribution area of distribution licensee for multiple horizons (short/medium/ long-term) using comprehensive input data and policies and drivers and scientific mathematical modeling tools.

6.2. The distribution licensee shall be responsible for the assessment and forecasting of demand (MW) and energy (MWh) within its own control area.

6.3. The distribution licensee shall determine the load forecast for each consumer category for which the Commission has determined separate retail tariff.

6.4. The distribution licensee shall determine the load forecast for a customer category by adopting any of the following and/or combination of following methodologies :

a) compounded average growth rate (CAGR);

b) end use or partial end use;

c) trend analysis;

d) Auto-regressive integrated moving average (ARIMA);

e) AI including machine learning, ANN techniques; and

f) econometric (specifying the parameters used, algorithm, and source of data).

6.5. The distribution licensee may use Electric Power Survey (EPS) projections as base and/or any other methodologies other than the above-mentioned after recording the merits of the method. Further, distribution licensee should use best fit of various methodologies for the purpose of demand/load forecast taking into consideration probabilistic modelling approach for various scenarios (*viz.* most probable, business as usual, aggressive) as outlined under Clause 6.14.

6.6. For the purposes of deciding the load forecast for a customer category and the methodology to be used for load forecasting of a customer category, the distribution licensee must conduct statistical analysis and shall select the method for which standard deviation is lowest and R-square is highest.

6.7. The distribution licensee shall utilize state-of-the-art tools, scientific and mathematical methodologies, and comprehensive database such as but not limited to weather data, historical data, demographic and econometric data, consumption profiles, impact of policies and drivers etc. as may be applicable to their control area.

6.8. The distribution licensee may modify the load obtained on either side, for each customer category, by considering the impact for each of the but not limited to the following activities. The impact shall be considered by developing trajectories for each of the activities based on the economic parameters, policies, historical data, and projections for the future.

a) demand-side management;

b) open access;

c) distributed energy resources;

d) DSM and demand response measures;

e) electric vehicles;

f) tariff signals;

g) changes in specific energy consumption,

h) increase in commercial activities with electrification

i) increase in number of agricultural pump sets and its solarization

j) changes in consumption pattern from seasonal consumers

k) availability of supply; and

l) policy influences such as 24X7 supply to all customers, LED penetration, efficient use of fans/appliances, increased use of appliances for cooking / heating applications, electrification policies, distributive energy resources, storage, and policies, which can impact econometric parameters, impact of national hydrogen mission. For each policy, a separate trajectory should be developed for each customer category.

6.9. The distribution licensee may take into consideration any other factor not mentioned in clause 6.8 after recording the merits of its consideration.

6.10. The medium-term load profile of the customer categories for which load research has been conducted may be refined on the basis of load research analysis. A detailed explanation for refinement conducted must be provided.

6.11. The summation of energy forecast (MWh) for various consumer categories upon adjusting for captive, prosumer, and open access load forecast, as obtained as per clauses 6.4 to clause 6.10, as the case may be, shall be the load forecast for the licensee.

6.12. The licensee shall calculate the load forecasts (in MWh) by adding a loss trajectory approved by the Commission in the latest tariff order. In the absence of the loss trajectory as approved by the Commission for the planning horizon, an appropriate loss trajectory stipulated by State or National policies shall be considered with a detailed explanation.

6.13. The peak demand (in MW) shall be determined by considering the average load factor, load diversity factor, seasonal variation factors for the last three years and the load forecasts (in MWh) obtained in clause 6.12. If any other appropriate load factor is considered for future years, a detailed explanation shall be provided.

6.14. The distribution licensee shall conduct sensitivity and probability analysis to determine the most probable demand forecast. The distribution licensee must also develop long-term and medium-term demand forecasts for possible scenarios, while ensuring that at least three different scenarios (most probable, business as usual, and aggressive scenarios) are developed.

7. Short term (Hourly/Sub-hourly) Demand Forecast and Aggregation at State

7.1. The distribution licensee shall develop a methodology for hourly or sub-hourly demand forecasting and shall maintain a historical database.

7.2. For the purpose of ascertaining hourly load profile and for assessment of contribution of various customer categories to peak demand, load research analysis shall be conducted and influence of demand response, load shift measures, time of use shall be factored in by distribution licensee with inputs from state load dispatch center. A detailed explanation for refinement conducted must be provided.

73. The distribution licensee shall utilize state-of-the-art tools, scientific & mathematical methodologies and comprehensive data such as but not limited to weather data, historical data, demographic and econometric data, consumption profiles, policies and drivers etc. as may be applicable to their control area.

7.4. The distribution licensee shall produce hourly or sub-hourly five-years short-term (ST) and ten-years medium-term (MT) forecasts on a rolling basis and submit to SLDC by 30th April of each year for the ensuing year(s).

7.5. STU with inputs from SLDC and based on the demand estimates of the distribution licensees of the State, shall estimate, in different time horizons, namely long-term, medium term and short term, the demand for the entire State duly considering the diversity of the State.

7.6. SLDC shall aggregate demand forecasts by distribution licensees, consider the load diversity, congruency, seasonal variation aspects and shall submit state-level aggregate demand forecasts (MW and MWh) to the Authority and NLDC and RLDC by 31st May of each year for the ensuring year(s).

Chapter 4

Generation Resource Planning

8. Generation resource assessment and planning is the second step after demand assessment and forecasting and entails assessment of the existing and contracted resources considering their capacity credit and identification of incremental capacity requirement to meet forecasted demand including planning reserve margin.

9. Key contours and important steps in Generation Resource Planning :

9.1. Generation resource planning shall entail the following steps namely, (a) capacity crediting of generation resources, (b) assessment of planning reserve margin, and (c) ascertaining resource adequacy requirement and allocation for obligated entities within control area (regional/state).

92. The distribution licensee shall map all its contracted existing resources, upcoming resources, and retiring resources to develop the existing resource map in MW for the long term and medium term.

93. The mapping shall include critical characteristics and parameters of the generating machines, such as heat rate, auxiliary consumption, ramp-up rate, ramp-down rate, etc., for thermal machines; hydrology and machine characteristics, etc., for hydro machines; and renewable resources, their Capacity factors/CUFs, etc. for renewable resource-based power plants to be considered in the resource plan. All the characteristics and parameters with their values for each generating machine considered shall be provided in the resource plan.

9.4. Constraints such as penalties for unmet demand, forced outages, spinning reserve requirements, and system emission limits as defined in State and Central electricity grid codes and emission norms specified by the Ministry of Environment and Forest shall be identified and enlisted.

95. The distribution licensee shall also include a planning reserve as specified by the Authority or Commission, as the case may be. In the absence of any guidelines from the Commission, the distribution licensee can consider suitable planning reserve. The value of planning reserve considered shall be stipulated in the resource plan along with justifications.

10. Capacity Crediting of Generation Resources

10.1. The distribution licensee shall compute Capacity Credit (CC) factors for their contracted generation resources by applying the net load-based approach as outlined under Clause 10.2 of this Regulation. The five-year average of the Capacity Credit (CC) factor for each type of the contracted generation resource for the recent five years on a rolling basis shall be considered as Capacity Credit factor for the purpose of generation resource planning.

10.2. The Net Load based approach/methodology for determination of Capacity Credit (CC) factors for generation resources (including wind and solar) shall be adopted as under :

a) For each year, the hourly recorded Gross Load for 8760 hours (or time-block) shall be arranged in descending order.

b) For each hour, the Net Load is calculated by subtracting the actual wind or solar generation corresponding to that load for 8760 hours (or time-block) and then arranged in descending order similar to Step 1.

c) The difference between these two load duration curves represents the contribution of capacity factor of wind generation or solar generation, as the case may be.

d) Installed capacity of wind or solar generation capacity is summed up corresponding to the top 250 load hours.

e) Total generation from wind or solar generation corresponding to these top 250 hours is summed up.

f) Resultant CC factor is (Total Generation for top load 250 hours) / (Installed RE Capacity for top load 250 hours), as per formula below :

$$\text{CC factor} = \frac{\text{Sum of RE Generation for top } x \text{ hours}}{\text{Sum of RE Capacity for top } x \text{ hours}}$$

g) The process for CC factor determination shall be undertaken for each year for duration of past five-years and the resultant CC is the average of CC values of past 5 years.

10.3. For the purpose of Inter-state contracted RE generation or intra-state RE resources, contribution of CC factor for the RE or generation resource where such resource is located into grid (*viz.* inter-state or intra-state, as the case may be) as contracted by the distribution licensee shall be considered. For this purpose, CC factors as specified by Authority or the Commission shall be considered.

10.4. CC factors for hydro generation resources shall be computed based on water availability with different CC factors for run-of-the-river hydro power projects and dam-based/ storage-based hydro power projects. CC for thermal resources shall be computed based on coal availability and forced outages.

10.5. The distribution licensee shall share CC factors for their contracted resources along with justification for its computations with State Load Despatch Centers.

10.6. SLDC shall calculate CC factors considering the aggregate State Demand and State Net Load and contracted RE generation resources available in the State, including the capacity credits at both national and state peaks, and shall submit such CC factor information to the Authority and NLDC and RLDC from time to time.

11. Assessment of Planning Reserve Margin (PRM)

11.1. Planning Reserve Margin (PRM) as a percentage of peak load represents the excess generation resource or planning reserve required to be considered for the purpose of generation resource planning.

11.2. Such Planning Reserve Margin (PRM) factor (for example, 7%) shall be based on the reliability indices in terms of Loss of Load Probability (LOLP, for example, 0.2%) and Normalized Energy Not Served (NENS, for example, 0.05%) as may be specified by the Authority and the same shall be considered by utilities in their planning for resource adequacy requirement and generation resource capacity planning.

11.3. The capacity planning by the distribution licensee and State level resource adequacy planning by STU/SLDC shall factor in PRM while developing state-level Integrated Resource Plan.

12. Ascertaining Resource Adequacy Requirement and its Allocation for Control Area

12.1. Upon applying CC factors as determined under Regulation 10 of these regulations and determining adjusted capacity for contracted generation resources (existing and planned), the sum of such adjusted contracted generation capacity (existing and planned) over a time axis of 15-minute intervals or longer, but not more than one hour, shall form the resource map of the distribution licensee.

12.2. The distribution licensee shall subtract the resource map developed in clause 12.1 from the demand forecast developed in section 6 (ref. Clause 6.13) to identify the resource gap. The resource gap in terms of RA compliance for the distribution licensee for the long term and medium term shall be developed in the manner as specified in these Regulations.

12.3. The distribution licensee shall conduct sensitivity and probability analysis to determine the most probable resource gap. The distribution licensee shall also develop long-term and medium-term resource gap plans for possible scenarios, while ensuring that at least three different scenarios (most probable, business as usual, and aggressive) are developed.

12.4. Based on most probable scenario, the distribution licensee shall undertake development of Medium-term Distribution Resource Adequacy Plan (MT-DRAP) and Short-term Distribution Resource Adequacy Plan (ST-DRAP) exercise by 31st August of each year to meet RA target requirement.

12.5. RA requirement planning shall be conducted with reference to both national and state coincident peaks to optimize requirement of incremental capacity addition through annual rolling plan. A Mid-term review of national and state RA requirement planning shall be conducted to check for events of slippages by states, if any.

12.6. While planning RA requirement, the distribution licensee shall duly factor in the allocation of RA requirement to the state as may be suggested by the Authority or the NLDC, as

the case may be, based on contribution to National Co-incident Peak Demand (CPD) for MT-RA and ST-RA.

12.7. The Commission shall approve MT-DRAP and ST-DRAP of the distribution licensees by 30th September of each year for the ensuring year(s) incl. annual rolling plans, as the case may be, upon taking into consideration various scenarios as well as allocation of Resource Adequacy requirement allocated to the State/distribution licensee based on its contribution to the National peak or National RA requirement as determined by Authority or the NLDC or the RLDC, as the case may be.

Chapter 5

Procurement Planning

13. Procurement planning shall consist of (a) determining the optimal power procurement resource mix, (b) deciding on the modalities of procurement type and tenure, and (c) engaging in the capacity trading or sharing to minimize risk of resource shortfall and to maximize rewards of avoiding stranded capacity or contracted generation.

14. Procurement Resource Mix

14.1. The distribution license in its power procurement strategy shall lay emphasis on the optimal procurement generation resource mix that shall enable smooth RE integration in its portfolio of power procurement resource options while meeting reliability standards.

14.2. For identification of the optimal generation procurement resource mix, optimization techniques and least-cost modeling shall be employed in order to avoid stranding of assets. The distribution licensee shall engage in adoption of least cost modeling and optimization techniques and demonstrate the same in its overall power procurement planning exercise to be submitted to Commission for approval.

14.3. Procurement by distribution licensees shall be consistent with the identified resource mix and considering overall national electricity plan and policies notified by the Appropriate Government from time to time.

15. Procurement Type and Tenure

15.1. The distribution licensee, while determining the modalities and tenure of procurement of resource mix, shall ensure that at the initial level, available capacity within the region shall be optimized. For further optimization, procurement contract shall be decided first within the region subject to the least cost resource availability considering transmission constraints & cost of transmission for procurement from outside the region and then across regions if necessary.

15.2. The distribution licensees shall identify the generation resource mix and also procurement strategy in long-term, medium-term and short-term horizon and seek approval of the Commission.

15.3. In its overall power procurement planning approach, the distribution licensee shall lay greater emphasis on adequate contracting through long and medium term arrangements.

15.4. Assessment through Annual Rolling Plan shall ascertain incremental capacity addition requirement through MT/ST upon factoring in existing and planned procurement initiatives of the distribution licensee.

15.5. The distribution licensee shall contract capacities by 30th November of each year and submit the Annual Rolling Plan to STU/SLDC by 31st December of each year for ensuring year(s).

15.6. STU and SLDC shall submit state-level aggregated plan to RLDC and RLDC shall submit regional-level aggregated plan to NLDC by 31st January of each year for the ensuing year(s).

16. Sharing of Capacity

16.1. The distribution licensee shall duly factor in the possibility of short-term capacity sharing while preparing the Resource Adequacy plan and optimally utilize the platform for inter-state capacity sharing or trading mechanism created by the Central Commission, and optimize the capacity costs as far as possible. Additionally, it shall be noted that for meeting national coincident peak, 100% of the contracted capacities have to be firm capacities (cannot be met through power exchange), whereas for meeting the state peak, firm capacities along with short-term contract capacities (banking, PXs etc) can be used.

16.2. The distribution licensee shall submit information about contracted capacity to the SLDC and the STU for compliance verification.

16.3. The distribution licensee, the STU and the SLDC shall seek approval of the Commission to the procurement plan as well as Annual Rolling Plans.

Chapter 6

Monitoring and Compliance

17. Monitoring and Compliance

17.1. **Monitoring and Reporting:** Based on the MT-DRAP and ST-DRAP, STU and SLDC shall communicate the state-aggregated capacity shortfall to the State Commission by 30th September of each year for the ensuring year(s) and advise the distribution licensees to commit additional capacities.

17.2. **Treatment for shortfall in RA Compliance:** Distribution licensees shall comply with the RA requirement and in case of non-compliance, appropriate non-compliance charge shall be applicable for the shortfall for RA compliance.

Chapter 7

Roles and Responsibilities and Timelines

18. Data Requirement and Sharing Protocol

18.1. Distribution licensees shall maintain and share with STU/SLDC all data related to demand assessment and forecasting such as but not limited to consumer data, historical demand data, weather data, demographic and econometric variables, T&D losses, actual electrical energy requirement and availability including curtailment, peak electricity demand, and peak met along with changes in demand profile (e.g. agricultural shift, time of use, etc.), historical hourly load shape, etc.

18.2. Distribution Licensee shall maintain all statistics and database pertaining to policies and drivers, such as LED penetration, efficient fan penetration, appliance penetration, increased usage of electrical appliances for cooking, etc., in households, increase in commercial activities for geographic areas/regions, increase in number of agricultural pumps and solarization within control area, changes in specific energy consumption, consumption pattern from seasonal consumers such as tea plants, DSM and DERs, EVs and OA, National Hydrogen Mission, reduction of AT&C losses, etc. shall also be shared.

18.3. Distribution Licensee shall maintain at least past 10 years of statistics in its database pertaining to consumption profiles for each class of consumers, such as domestic, commercial, public lighting, public water works, irrigation, LT industries, HT industries, railway traction, bulk (non-industrial HT consumers), open access, captive power plants, insights from load survey, contribution of consumer category to peak demand, seasonal variation aspects, etc. shall also be shared.

18.4. SLDC shall maintain the licensee-specific as well as aggregate for state as whole, the statistics and database pertaining to aggregate demand assessment and forecasting data mentioned above and share state-level assessment with the Authority and the NLDC for regional/national assessment from time to time.

18.5. The distribution licensee shall share information and data pertaining to the existing and contracted capacities with their technical and financial characteristics including hourly generation profiles to with STU and SLDC for computation of state-level capacity credit factors and for preparation of state-level assessment.

18.6. SLDC and STU shall aggregate generation data and share state-level assessment with the Authority and NLDC for assessment of RA requirement.

18.7. STU shall communicate allocation of regional and national RA requirement to the distribution licensees.

19. Timelines

19.1. Distribution licensees shall submit demand forecasts to SLDC by 30th April of each year for the ensuring year(s).

19.2. SLDC shall aggregate and submit state-level forecasts to the Authority and the NLDC by 31st May of each year for the ensuring year(s).

19.3. Distribution licensees shall perform MT-DRAP and ST-DRAP exercise by 31st August of each year for the ensuring year(s).

19.4. STU and SLDC shall submit state-level aggregated plan to NLDC by January of each year.

Chapter 8

Miscellaneous

20. Power to Give Directions

20.1. The Commission may from time to time issue such directions and orders as considered appropriate for implementation of these regulations.

21. Power to Relax

21.1. The Commission may by general or special order, for reasons to be recorded in writing, and after giving an opportunity of hearing to the parties likely to be affected, may relax any of the provisions of these Regulations on its own motion or on an application made before it by an interested person.

22. Power to Remove Difficulties

22.1. If any difficulty arises in giving effect to the provisions of these Regulations, the Commission may, by an order, make such provisions, not inconsistent to the provision of the Act and these Regulations, as may appear to be necessary for removing the difficulty.

Secretary,
Meghalaya State Electricity Regulatory Commission.

SHILLONG: Printed and Published by the Director, Printing and Stationery, Meghalaya, Shillong.
(Extraordinary Gazette of Meghalaya) No. 247 - 730 + 5 — 15 – 5 – 2024.
website:- http://megpns.gov.in/gazette/gazette.asp