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সত্যমেব জয়তে

THE ASSAM GAZETTE

অসাধাৰণ

EXTRAORDINARY

প্ৰাপ্ত কৰ্ত্তৃত্বৰ দ্বাৰা প্ৰকাশিত

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GOVERNMENT OF ASSAM

ORDERS BY THE GOVERNOR

ASSAM ELECTRICITY REGULATORY COMMISSION

NOTIFICATION

The 18th December, 2024

AERC (PROCUREMENT AND DISPATCH OF BATTERY ENERGY STORAGE SYSTEM) REGULATIONS, 2024

No. AERC-926/2024/9.- In exercise of the powers conferred by section 181 of the Electricity Act, 2003, and all other powers enabling it in this behalf, and after previous publication, the Assam Electricity Regulatory Commission hereby makes the following Regulations.

CHAPTER 1

PRELIMINARY

1. Short Title, Extent and Commencement

(1) These guidelines may be called the Assam Electricity Regulatory Commission (Procurement and Dispatch of Battery Energy Storage System) Regulations, 2024.

(2) These regulations shall come into force on the date of publication in the Government Gazette.

(3) These regulations shall extend to the whole state of Assam.

2. **Scope**

a) These Regulations are being issued under the provisions of Section 86 of the Electricity Act, 2003 for procurement of energy/ancillary services/capacity from battery energy storage systems by the 'Procurers', through competitive bidding or through development of project on regulated tariff basis, from grid

connected projects with following minimum project size and bid capacity requirements:

i. Minimum individual project size of power rating of 1MW and with suitable energy rating based on application at one site; and

ii. The provisions of these regulations shall be binding on the Electric energy storage developers /Procurer/ Intermediary Procurer/ End Procurer/ Implementing Agency and the Authorized Representative of the Procurer.

3. **Definitions**

3.1 In these regulations and unless the extant otherwise required and in case any of the definitions below conflicts with the definitions in the Electricity Act 2003 as amended from time to time or the state electricity grid code, as amended from time to time, the definitions in the Act and the grid code shall be considered.

a) "Act" means the Electricity Act, 2003 notified by the Government of India, and as amended from time to time

b) "Battery Energy Storage Systems" or "BESS" means the system that shall utilize methods and the technologies such as electrochemical batteries (Lead Acid, Li-ion, solid state batteries, flow batteries, etc.), providing a facility that can store chemical energy and deliver the stored energy in the form of electricity, including but not limited to ancillary facilities (grid support., for example).

c) "Black Start" means the ability of certain generating units to restart without drawing power from the grid under conditions of power system collapse;

d)"Build-Own-Operate" means a project in which a procurer grants a party the right to construct a project according to agreed design specifications, owns the project and operates the project for a specified time.

e) "Build-Own-Operate-Transfer" means a project in which procurer grants to a party the right to construct a project according to agreed design specifications, owns the project and operates the project for a specified time and then transfer the project back to the procurer..

f)"CERC" means the Central Electricity Regulatory Commission.

g) "Charge Ramp Rate" means how quickly electric storage resources can transition from zero state of charge to full state of charge.

h)"Deviation and Ancillary Services Pool Account" means the Account to be maintained and operated by the concerned SLDC for the state and Regional Load Despatch Centre in each region.

i) "Discharge Ramp Rate" means how quickly electric storage resources can transition from no output to full output, similar to the Ramp-up rate for conventional generators.

j)"Frequency" linked ancillary services means Primary Frequency Control, Secondary Frequency Control, Tertiary Frequency Control.

k)"Maximum Charge Limit" means highest quantity of electric energy (MW) that an electric storage resource can receive from the grid.

l)"Maximum Charge Time" means the maximum amount of time per day that an electric storage resource can receive electric energy from the grid, which could be, for example, up to four hours.

m)"Maximum Discharge Limit" means the highest amount of electric energy (MW) that the resource can inject into the grid.

n)"Maximum Run Time means" the maximum duration for injecting electric energy into the grid per day, which is subject to physical or operational constraints, such as state of charge or other obligations to provide services.

o)"Maximum State of Charge" means the highest level of charge of electric storage resource without exceeding its design limitations.

p)"Minimum Charge Time" means shortest duration that an electric storage resource can receive electricity.

q)"Minimum Run Time" means the minimum time for discharging electric energy onto the grid.

r)"Minimum State of Charge" means the lowest level of charge of electric storage resource without causing excessive wear and tear.

s)"PPAs" means power purchase agreements;

t)"Primary Frequency Control" means the first stage of deliberate frequency control in a power system;

u)"Procurers" means the parties who intend to procure the energy/ancillary services/capacity from energy storage system;

v)"RE" means renewable energy;

w)"SCED" means security constrained economic dispatch;

x)"SCUC" means security constrained unit commitment;

y)"Secondary Frequency Control" means the active power response that is centrally controlled and typically responds in real time, to signals or directions given by the system operator;

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

aa)"Special Economic Zones (SEZ)" means areas that offer incentives to resident businesses and offer competitive infrastructure, duty free exports, tax incentives, and other measures designed to make it easier to conduct business;

ab)"Tertiary Frequency Control" means the reserve generation capacity that is able to be utilized to reset the primary and secondary frequency control services;

ac) ESPA Means Energy Storage Purchase Agreement (ESPA)

ad) Useful life means the time period for which BESS project shall be designed and used.

3.2 The words and expressions used and not defined in these Regulations but defined in the Act, Rules and Regulations framed thereunder shall have the meaning assigned to them in the Act, Rules and Regulations.

CHAPTER 2

Regulations Framework

4. Objectives

The specific objectives of these regulations are as follows:

a) To facilitate procurement and grid operation of battery energy storage systems procured by the distribution / transmission utilities, controlled, and operated by system operator (SLDC), and maintained and managed by the battery project developer.

b) To facilitate procurement of battery energy storage systems for optimum utilization of transmission, generation, and distribution assets and ensure that the carbon footprint of the state power system is progressively reduced.

c) To encourage competition and enhance the bankability of battery energy storage projects, standardize processes, and create a risk-sharing framework among stakeholders involved in battery energy storage services procurement.

d) Ensure that the procurement of battery energy storage systems is technology-neutral and focuses on the clear definition of services that are expected of such systems.

e) The procurement process shall consider the real-time operation of the power system over the planning horizon. The intent is to procure storage resources that can be best utilized during real time power system operations.

f) BESS electric storage resources shall be eligible to provide capacity, energy, and ancillary services. SLDC/DISCOM may also require electric storage resources to be eligible to provide services such as black start service, frequency response service, and reactive power services as per requirement of real time grid operation.

g) Create a forward-looking mechanism and traceability under Article 6.2 for international cooperation for renewable energy with storage (only stored component) by procurer and BESS developer for carbon credits.

5. **Procurement guidelines**

a) The procurer responsible for procurement shall create the necessary bid documents as per these regulations, as well as the "Guidelines for Procurement and Utilization of Battery Energy Storage Systems as part of Generation, Transmission, and Distribution Assets, along with Ancillary Services" issued by

the Ministry of Power on March 10th, 2022 and amendments issued from time to time. The bid document have to be approved by the concerned Board of Directors of the Procurer and then submitted to Commission for approval.

b) The energy storage assets are procured to provide grid services such that the same aligns with the resource adequacy requirements of the state, where the power system investment and operation costs are minimized:

I. Power system investment costs inter-alia include the costs of new investments in transmission, generation, procurement of new contracts, and storage systems.

II. Power system operation costs inter-alia include variable cost of operation (of all assets in the grid), start-up costs, shut-down costs and, costs of ancillary services and inclusive of all capital work including plant and machinery, civil work, erection and commissioning, financing and interest during construction, and evacuation infrastructure up to inter-connection point.

III. The planning horizon of this procurement will be 12 years.

IV. The framework for minimization of costs shall mimic, as closely as possible, the real time power system operation.

V. The reactive power requirement if any, will be to the account of BESS developer.

c) The locations and capacities of storage systems identified based on the above criteria will be set up based on competitive bidding through an auction mechanism or through controlled tariff mechanism.

d) The bidding documents shall specify technical performance parameters mentioned in these regulations. Based on the specific usage of the battery energy storage system envisaged under the tender, the developer shall be required to meet the committed requirements in terms of all performance parameters.

e) Notwithstanding any other provisions of these regulations, battery energy storage assets that are already under implementation in the state or are expected to be installed till the applicability of the notification of these regulations shall be treated as battery energy storage assets under construction and dealt with by the Commission as per these regulations.

6. Criteria for selecting the successful BESS developer.

a) The winning bid shall ensure that:

I. The complete offer minimizes the overall costs of power system operation and investment over the planning horizon. This includes new investments in transmission, generation, procurement of contracts, and storage systems.

II. Power system operation costs shall include, among other things, the variable cost of operating all assets in the grid, start-up costs, shut-down costs, and ancillary service costs.

III. The planning horizon of this analysis will be 12 years.

IV. The framework for minimizing costs should closely mimic real-time power system operation.

b) The procurer shall compute the impact of the procurement of storage system on the retail tariffs over the 12-year planning horizon in consonance with the resource adequacy projections of the state. The procurer shall demonstrate that the winning procurement has the least impact on the present value of the retail tariffs.

c) The bid document prepared by the Discom to be submitted before the Commission for approval along with the necessary fees mentioned in the AERC (Fees Regulations)2024.

7. **Directions to SLDC**

a) SLDC is directed to establish detailed processes and procedures so that an eligible battery energy storage resource can provide energy for peak management and all ancillary services that it is technically capable of providing, including services required by SLDC but are currently not being offered in the organized market, such as black start services, system inertia, primary reserve ancillary services, secondary reserve ancillary services, and reactive power.

A model detailed procedure for Scheduling/Metering/Accounting/Settlement for BESS project is at appendix I. SLDC is directed to establish detailed processes and procedures in line with appendix I and the same will be approved by the Commission.

b) SLDC/ DISCOM shall be allowed to use the storage resource for participation as both wholesale seller of services (energy and ancillary services) and wholesale buyers of energy in the national markets without compromising economic, financial and technical interests of the state.

c) SLDC shall develop a procedure, to be approved by the commission, to manage the state of charge and discharge for battery energy storage resources which are to be used for providing various services.

d) SLDC should be able to dispatch the battery energy storage resource in the same way as any other market participant. SLDC is required to have information for state of charge for storage resources and shall ask the storage resource developer to establish telemetry or other communication requirements necessary to communicate and determine the capabilities of the electric storage resource in real time.

e) In the utilization of battery energy storage systems for energy and ancillary services, and hence the charging and discharging of battery energy storage systems will be controlled by the SLDC. SLDC will have access to the battery energy storage resource through telemetry. Further, the developer will ensure that the correct and required data is transmitted as per SLDC requirement for efficient control and operation of BESS.

f) SLDC shall inform about the periods when BESS shall be required to be made available for discharge for the next day depending on the anticipated system conditions on a day-ahead basis.

g) The periods of despatch may be revised considering the real time system conditions.

h) The periods other than those identified for discharging, shall be used for charging the BESS.

i) Further, BESS shall be enabled to accept Automatic Generation Control signals continuously for providing secondary control of frequency regulation, whenever required.

j) The procedure for Scheduling, Metering, Accounting and Settlement for BESS project shall be as in line with Appendix-1 of these guidelines.

8. Bidding parameters

(1) For procurement, the following minimum technical bidding parameters need to be included:

a. The procurement shall be in power (MW) and energy terms (MWh). The BESS Developer shall install, operate and maintain the BESS to offer this facility to procurer to charge and discharge the BESS on an "on demand" basis.

b. The bidding parameters for operations include physical and operational characteristics of such resources. The BESS being procured shall meet following minimum requirements:

i. Round trip efficiency: More than 85% up to metering point and including auxiliary consumption.

ii. Degradation ratio: Not more than 2.5% of initial capacity on annual basis. (Refer Table-1)

iii. No of Cycles: Preferably 2 complete charge and discharge cycles per day.

iv. Energy Storage availability: Minimum 95 % on annual basis (refer ix)

v. BESS recovery time: Not more than 1 hour between duty cycles, either charge cycle or discharge cycle.

vi. BESS Response time: Less than 1 sec.

vii. BESS rate of charge and discharge: Preferably 2hours for each cycle

viii. Project Life of BESS: Minimum 12 years.

Table-1: -Year-Wise dispatchable capacity of the complete BESS Plant

Year	Minimum Dispatchable Energy at the start of Year	Minimum Dispatchable Energy at the end of Year
1	100%	97.5%
2	97.5%	95%
3	95%	92.5%
4	92.5%	90%
5	90%	87.5%
6	87.5%	85%

7	85%	82.5%
8	82.5%	80%
9	80%	77.5%
10	77.5%	75%
11	75%	72.5%
12	72.5%	70%

In addition, the Bidder shall also demonstrate, on monthly basis, 100% of the minimum Dispatchable Energy at the end of Year of the BESS Plant as indicated in the above table, at metering/delivery point to the grid. It shall be the responsibility of the Bidder to make periodic replacements/replenishments of system capacities, if and when required, up to the Term of the Contract to maintain required minimum dispatchable energy at metering/delivery point.

ix) Annual System availability (min 95% and above) will be calculated as below:

Weighted Average of Time blocks with respect to energy scheduled and not based on the simple average method and for the Calculation of Annual Availability, Monthly Availability will be capped at 95%.

(2) For procurement , the following financial bidding parameter shall also be included:

The bidders will submit Availability based fixed charge/ Annuity (INR per MW per month) as per terms and conditions of the Agreement. The maximum ceiling will be Rs 5.5 Lakh/MW/Month. The procurer has to conduct reverse financial bidding based on the ceiling norms for establishing project on competitive bidding basis.

CHAPTER 3

BID EVALUATION PROCESS

9 The bids shall be evaluated as per following steps;

a. For each identified location, the bids with technical bidding parameters as specified in these regulations shall be considered in the evaluation process.

b. Based on the technical bidding, the selected bidders will be eligible for financial reverse bidding.

CHAPTER 4

TARIFF CALCULATION FOR PROJECTS DEVELOPED ON REGULATED TARIFF BASIS UNDER SECTION 62

10. Control Period

The Control Period under these Regulations shall be from 01.04.2025 to 30.11.2027 (Pl check date)

Provided that the tariff determined as per these regulations for the BESS projects commissioned during the Control Period shall remain valid for the tariff period;

Provided further that the tariff norms specified in these regulations shall continue to remain applicable subject to such conditions as may be stipulated by the Commission, until notification of the revised norms through subsequent re- enactment of these regulations.

11. Tariff Determination

The tariff for BESS projects shall be determined by the Commission on multi year basis in accordance with these Regulations. Financial and operational norms specified in these regulations, except for capital cost shall be the ceiling norms while determining the project specific tariff.

12. **Petition and proceedings for determination of tariff**

(1) In case of BESS projects for which a project tariff has to be determined as per these regulations, the Commission shall determine such tariff prior to the commissioning of the project in any year of the Control Period.

(2) A petition for determination of project specific tariff shall be accompanied by such fee as may be specified in the AERC (Payment of Fees) 2024 Regulations, as amended from time to time or any subsequent re-enactment thereof.

(a) Detailed project report outlining technical and operational details, site specific aspects, basis for capital cost, detailed break-up of capital cost for various equipment and financing plan;

(b) A statement of all applicable terms and conditions and anticipated expenditurefor the period for which tariff is to be determined;

(c) A statement containing details of the calculation of any grant, subsidy, or incentive received, due or assumed to be due, from the Central Government or State Government or both. This statement shall also include the proposed tariffcalculated without such subsidy or incentive.

(d) Consent from the beneficiary for procurement of power from BESS project.

(e) Any other informations as directed by the Commission.

(3) Following documents in case of a petition for determination of project specific tariff by BESS projects, where tariff from such BESS projects is generally determined through a competitive bidding process in accordance with provisions of Section 63 of the Act:

(a) Rationale for opting project specific tariff instead of competitive bidding;

(b)Competitiveness of the proposed tariff vis-à-vis tariff discovered through competitive bidding/ tariff prevalent in the market. and

(c) Any other information as directed by the Commission.

13. Tariff Structure

The tariff for BESS project shall consist of the following components:

a. Return on equity;
b. Interest on loan;
c. Depreciation;
d. Interest on working capital; and
e. Operation and Maintenance expenses
f. Per unit cost of electricity supplied for storage

14. **Tariff Design**

(1)The tariff shall be determined, on a levelized basis, considering the year of commissioning of the project, for the tariff period of the project and trued up on an annual basis..

Provided that, in case some of the equipment in balance of plant (BOP) are left with a further useful life, the capital cost and its impact on tariff for the remaining useful life of such equipment shall be determined separately by factoring in the tariff components for the remaining useful life.

(2) For the purpose of levelized tariff computation, a discount factor as mentioned in RE regulations of CERC equivalent to the post-tax weighted average cost of capital shall be considered.

15. **Capital Cost**

Norms for capital cost, as specified in relevant chapters of these regulations, shall be inclusive of land cost, pre-development expenses, all capital work including plant &

machinery, civil work, erection, commissioning, financing cost, interest during construction and evacuation infrastructure up to an inter-connection point. The total cost incurred on completing the project shall be submitted to Commission with detail break up along with CA certified documents for each cost component.

16. **Debt Equity Ratio**

(1) For determination of project specific tariff, the debt-equity ratio shall be considered as 70:30, provided that:

a.The project specific tariffs, where the equity actually deployed is morethan 30% of the capital cost, equity in excess of 30% shall be treated as a normative loan;

b. The project specific tariffs where equity actually deployed is less than30% of the capital cost, the actual equity shall be considered for determination of tariff;

c. The equity invested in foreign currency shall be designated in Indianrupees on the date of each investment;

(2)The debt-equity ratio shall be considered after deducting the amountof grant or capital subsidy received for the project for arriving at the amount of debt and equity.

(3)The project developer shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding the infusion of funds from internal resources in support of the utilization made or proposed to be madeto meet the capital expenditure of the renewable energy project.

(4) The financial structure as approved by the Commission shall not undergo any changes during the remaining life of the project.

17. **Loan Tenure and Interest on Loan**

(1) For determination of project specific tariff, loan tenure of 10 years shall be considered.

(2) Interest on Loan

The loans arrived at in the manner indicated in Regulation shall be considered as gross normative loans for the calculation of interest on loans. For project specific tariff, the normative loan outstanding as on the 1st of Aprilof every year shall be worked out by deducting the cumulative repayment up to the 31st of March of the previous year from the gross normative loan.

(3) For the purpose of computation of tariff, the normative interest rate of two hundred (200) basis points above the average State Bank of India Marginal Cost of Funds based

Lending Rate (MCLR) (one-year tenor) prevalent duringthe last available six months shall be considered.

(4) Notwithstanding any moratorium period availed by the project developer, the repayment of the loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

18. **Depreciation**

(1) The value base for the purpose of depreciation shall be the capital cost of the project admitted by the Commission. The salvage value of the project shall be considered as 10%, and depreciation shall be allowed up to a maximum of 90% of the capital cost of the project:

Provided that no depreciation shall be allowed against the grant or capital subsidy received for the project.

(2)Depreciation rate of 8 % per annum shall be considered for the first 10 years and the remaining depreciation shall be evenly spread during the remaining Useful life of the project.

(3)Depreciation shall be computed from the first year of commercial operation:

Provided that, for determination of project specific tariff, in case of commercial operation of the project for part of the year, depreciation shall be computed on a pro rata basis.

19. **Return on Equity**

The value base for equity shall be as determined under these Regulation..

The normative Return on Equity for BESS projects shall be 14%.The normative Return on Equity shall be grossed up by the latest available notified Minimum Alternate Tax (MAT) rate for the first 10 years of the Tariff Period and bythe latest available notified Corporate Tax rate for the remaining Tariff Period.

20.Interest on Working Capital.

(1). The Working Capital requirement for BESS projects shall be computed in accordance with the following:

a. Operation and Maintenance expenses for one month;

b. Receivables equivalent to 30 days of tariff for the sale of electricity calculatedon the normative Capacity Utilisation Factor; and

c.Maintenance spares equivalent to 15% of Operation and Maintenance expenses.

Interest on Working Capital shall be at an interest rate equivalent to the normative interest rate of three hundred and twenty-five (325) basis points above the averageState Bank of India Marginal Cost of Funds based Lending Rate (MCLR) (one- year tenor) prevalent during the last available six months.

21. **Calculation of capacity utilization factor**

The number of hours in a year for calculation of the capacity utilization factor shall be considered as 8766.

22. Operation and Maintenance Expenses

(1) Operation and Maintenance expenses shall be determined for the Tariff Period of the project based on normative O&M expenses specified in these regulations for the first year of the Control Period.

(2) Normative O&M expenses allowed during the first year of the Control Period shall be limited to 2% of the total cost of the project as approved by the Commission .Further this normative O&M expenses shall be escalated at the rate of 5.25% per annum for the Tariff Period.

(3) The per unit cost of electricity supplied to BESS for storage shall be as per details furnished by the procurer/developer and as approved by the Commission. The per unit cost of electricity as approved shall be taken as basis for tariff determination and for true up purpose at end of each year.

23. Rebate

For payment of bills of the BESS project company through revolving and valid letter of credit on presentation or through National Electronic Fund Transfer (NEFT) orReal Time Gross Settlement (RTGS) payment mode within a period of 5 days of presentation of bills, a rebate of 1.5% on bill amount shall be allowed.

Explanation: In case of computation of '5 days', the number of days shall be counted consecutively without considering any holiday. However, in case the lastday or 5th day is an official holiday, the 5th day for the purpose of rebate shall beconstrued as the immediate succeeding working day.

Where payments are made on any day after 5 days within a period of one monthfrom the date of presentation of bills by the generating company, a rebate of 1% shall be allowed.

24. Late payment surcharge

In case the payment of any bill for charges payable under these regulations is delayed beyond a period of 45 days from the date of presentation of bills, a late payment surcharge as specified in the Ministry of Power - Electricity (Late Payment Surcharge and Related Matters) Rules, 2022 as amended from time to time shall be levied by the BESS project company.

25. Subsidy or incentive by the Central or the State Government

(1)The Commission shall take into consideration any incentive, grant or subsidy from the Central or State Government, including accelerated depreciation benefit if any , availed by the project while determining the tariff under these regulations:

Provided that the following principles shall be considered for ascertaining income tax benefit on account of accelerated depreciation, if availed, for the purpose of tariff determination:

(a) Assessment of benefit shall be based on normative capital cost, accelerated depreciation rate and corporate income tax rate as per relevant provisions of the Income Tax Act, as amended from time to time; and Capitalization of BESS projects during the second half of the fiscal year.

(b) Per unit benefit shall be derived on a levelized basis at a discount factor mentioned in clause 14(2) . .

(2) Any grant, subsidy or incentive availed by BESS projects, which is notconsidered at the time of determination of tariff, shall be deducted by the beneficiary in subsequent bills after receipt of such grant, subsidy or incentive in suitable instalments or within such period as may be stipulated by the Commission.

(3)In case the Central or State Government or their agencies provide any generation-based incentive, which is specifically over and above the tariff, such incentive shall neither be taken into account while determining the tariff nor be deducted by the beneficiary in subsequent bills raised by the developer for the particular battery energy storage project.

26**. Statutory Charges**

The renewable energy project developer shall recover from the beneficiaries the statutory charges imposed by the State and Central Government, such as electricity duty on auxiliary consumption, subject to the maximum of normative auxiliary consumption.

CHAPTER 5 :ARRANGEMENTS RELATED TO SITE

27. Project site selection

(1) As specified in the bidding documents to be issued by the procurer, the project shall be set up only at the project site specified by the procurer.

(2) If the procurer decides to choose a specific location for the project, it should be clearly mentioned in the bidding documents. In such case, the procurer and the developer should ensure that all project preparatory and implementation related activities are completed as per the timelines specified in the Guidelines issued by the Ministry of Power (MoP) on 10th March 2022, as amended from time to time.

(3)The procurement entity responsible for selecting a location for a new project may opt for a Renewable Energy (RE) Park that has suitable infrastructure and access to amenities. The bidding documents may specify the particular RE Park chosen by the entity. The RE Park should be developed/ has been developed in accordance with the relevant policies and guidelines issued by the MNRE, Central Government, or State Government from time to time.

To ensure a timely supply of electricity, the Procurer, RE Park Developer and Project Developer must complete various project preparatory and implementation-related activities within specified timelines in the Guidelines issued by the Ministry of Power (MoP) on 10th March 2022, as amended from time to time.

CHAPTER 6 : DISPATCH OF STORAGE SYSTEMS

28. During system operation, all the technical parameters specified in Regulations need to be submitted by the procurer/developer to SLDC after the prior approval from the Commission. This is a one-time submission. The developer may submit any revisions to these parameters at any time in line with operation guidelines issued by SLDC. The reasons for such revision shall have to be approved by the SLDC.

29.Each battery energy storage resource must submit its forecast of State of Charge before 6:00 AM on D-1 for day ahead schedules (for day D) or at any other timeline as approved/specified by SLDC. This will provide the SLDC with more accurate market information regarding the resource's actual state of charge and prevent the SLDC from making assumptions about the state of charge of an battery energy

storage resource, which is particularly important if the resource was not scheduled for charging/discharging or provision of ancillary services in the previous scheduling interval(s).

30.State of charge of battery energy storage resources would be telemetered on real time basis when the SLDC manages that resource's state of charge. The telemetry requirements for such resources shall be in accordance with the provisions of the Assam Electricity Regulatory Commission (Ancillary Services) Regulations, 2024 as amended from time to time and procedure approved by SLDC.

31. BESS developer/DISCOM shall coordinate with SLDC for charging and despatch of power. The charging power by DISCOM shall be scheduled from its portfolio or from its identified generator or other such reliable source.

CHAPTER 7 : IMPLEMENTATION OF THE PROJECT

32.. The Energy Storage Purchase Agreement (ESPA) proposed to be entered into with the successful bidder shall be issued along with the Request for Selection (RfS). Standard provisions to be incorporated as part of this ESPA shall include inter alia the following:

(1)Term of the ESPA : It is recommended that the minimum term of the ESPA period for Battery Storage Systems be 12 years from the Scheduled Commissioning Date (SCD) or the date of full commissioning of the Project, whichever is later. After the expiry of the ESPA period, the developer is free to extend the ESPA with DISCOM with mutual agreements and at tariff approved by regulator or operate the plant provided the necessary arrangements with the land and infrastructure owning agencies, relevant transmission utilities and system operators have been made. In case the Project site is located in a Renewable Energy (RE) Park or elsewhere, the responsibility of the Procurer to arrange for the land shall be limited to the ESPA period.

(2)Performance Parameters of the Project: The procurement of power would be in both the capacity (MW) and energy (MWh) terms. Procurement of capacity (MW), scheduling for energy, and ancillary services: The storage resource should be capable of providing all the services that could be required of it during power system operation in accordance with its operational and technical capabilities.

(3)Performance-based charges: Irrespective of scheduling of energy by the procurer, the Procurer shall pay the capacity charge for the capacity made available by the storage resource in INR per MW per Month as determined through the auction process and adopted by the Commission. However, for projects developed on regulated tariff basis, the charges shall be paid at the tariff approved by the Commission.

Battery energy storage resource will be charged by the Procurer at his cost and the developer will deliver the energy back through BESS after accounting for agreed round trip conversion losses.

(4)Fixed charge: The monthly fixed charges paid by the procurer shall be adjusted for deviations from the committed bid technical parameters.

From the commencement of availability of BESS Capacity, procurer shall pay to the BESS developer monthly Tariff Payments subject to the adjustments of Liquidated damages. All capacity charge payments shall be in Indian Rupees. DISCOM will consider actual energy (not Energy scheduled) to account for injection / withdrawal which can vary considering the losses during transmission.

(5)Liquidated Damages on account of shortfall in meeting performance criteria: There will be liquidated damages payable for shortfalls against the performance parameters, the amount will be:

1. On pro-rata basis for the shortfall below the committed technical parameter @ capacity charge or any number predefined in RfS.
2. On pro-rata basis for the shortfall in supply of committed energy at the tariff or any number predefined in RfS.

The developer shall pay for the Energy loss in excess of guaranteed parameter of round trip efficiency (as stipulated in the RfS Document) @ Tariff of input energy provided by the procurer or any number predefined in RfS.

3. Any other Liquidated Damages as defined in the RfS Document as decided by procurer.

(6)It shall be ensured that the amount of the liquidated damages as specified under the Bidding Documents or ESPA is genuine and reasonable pre-estimate of the damages that may be suffered by the Procurer/Intermediary Procurer(s). The details of such

calculations shall be submitted along with the application to the Commission for approval.

(7) All other aspects related to different agreements such as award documents, commissioning, financial closure, transmission connectivity, payment security mechanism, events of default and consequences, change in law, codes and standards for safety and grid connectivity shall be in accordance with the guidelines issued by the Ministry of Power (MoP) on 10th March 2022 and amendments issued from time to time. Further the Commission may specify its own norms and standards from time to time and same shall be applicable.

(8) Safe Disposal of unit Batteries from the BESS : The Developer will comply with the requirements under Hazardous & other Waste (Management and Transboundary Movement) Rules, 2016, as amended from time to time, as applicable. The BESS developer shall ensure that all Unit Battery modules from the plant after their 'end of life' (when they become defective/ non-operational/ nonrepairable) are disposed in accordance with the "e-waste (Management and Handling) Rules, 2016" notified by the Government and as revised and amended from time to time and Battery Waste Management Rules, as and when notified by the Government of India , at his own cost..

CHAPTER 8 : MISCELLANEOUS PROVISIONS

33.. **Fees: Petition/Bid Documents/PPA**

Every Bid document/Petition for approval shall be accompanied by fees as mentioned in AERC Payment of Fees Regulation 2024.

The approval of PPA shall be accompanied by fees as mentioned in AERC Payment of Fees Regulation 2024.

34..**Power to Relax.**

The Commission, for reasons to be recorded in writing, may relax any of the provisions of these guidelines on its own motion or on an application made before it by an interested person.

35.**Power to issue direction**

The Commission may, from time to time, issue directions and orders as considered appropriate for implementation of these Guidelines.

36.**Power to Remove Difficulty:**

If any difficulty arises in giving effect to the provisions of these regulations , the Commission may, by general or specific order, make such provision not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations.

37.**Power to Amend**

The Commission may at any time, add to, vary, alter, modify or amend any provisions of these regulations after following due process.

ASHOK KUMAR BARMAN, (RETD.),
Secretary,
Assam Electricity Regulatory Commission.

Appendix-1

Model Procedure for Scheduling, Metering, Accounting and Settlement for BESS Project

1. Background:

a) SLDC shall be the nodal agency for scheduling of power from BESS project as per applicable regulations.

b) Developer shall coordinate arrangement of charging power with procurer and shall make BESS power available as per SLDC guidelines.

c) DISCOM shall be the nodal agency for the coordination of procurement and scheduling of power for charging and discharging on behalf of BESS developer.

(d) DISCOM shall also coordinate the payment and settlement related commercial aspects associated with the above activities.

2. Utilization of BESS for Peak management and Ancillary Services Portion:

a) BESS is to be utilized by SLDC and DISCOM for Peak management and Primary Reserve Ancillary Services (PRAS), Secondary Reserve Ancillary Services (SRAS) and Tertiary Reserve Ancillary Services (TRAS) as per applicable regulations.

b) The compensation charge for settlement under Ancillary Service Regulation shall be considered as daily average Area Clearing Price (ACP) of the Day Ahead Market (DAM) of the Power Exchange having 80% or more volume in the DAM segment, applicable for the day of despatch. In case no Power Exchange has volume 80% or more in the DAM segment, the weighted average of the daily average ACP of the DAM of all power exchanges shall be taken as compensation charge.

3. Likely Despatch Profile:

a) SLDC shall inform about the periods when BESS shall be required to be made available for discharge for the next day depending on the anticipated system conditions on a day-ahead basis.

b) The periods of despatch may be revised considering the real time system conditions.

c)The periods other than those identified for discharging, shall be used for charging the BESS.

d)Further, BESS shall be enabled to accept AGC signals under SRAS continuously for providing secondary control of frequency regulation.

e) BESS developer shall be responsible for scheduling and despatch of BESS contracted capacity.

4. Declaration of availability by BESS and State of Charge (SOC):

a)The BESS developer shall declare the available capacity and the State of Charge (SOC) on a day-ahead basis to SLDC of' D-1' day for 'D' day in line with Assam Electricity Grid Code Regulation 2024. SLDC shall communicate the same to the discoms as per timelines mentioned in the procedure approved by SLDC.

b)At 0000 hours on the date of commercial operation (COD date), the SOC shall be maintained at 50% level of entire capacity. This would enable providing reserves in both directions (up and down).

5. Charging of BESS:

a) Charging of BESS capacity shall be done through market and /or bilateral mode in consultation with Procurer/DISCOM/SLDC.

b). The charging of BESS shall be done in the designated hours as per the likely despatch profile notified by SLDC.

c). The charging power may be procured through Bilateral mode and or market mechanism mode in a manner so as to minimise the charging power procurement cost.

6. Scheduling and Despatch:

a)SLDC shall despatch BESS capacity as per the real time system requirements and schedules will be provided accordingly to DISCOM / BESS Developer.

b)The timelines for despatch shall be followed as per procedure approved by SLDC.

7. Metering:

a) SLDC/DISCOM shall provide the metering scheme and accordingly the Interface Energy Meters (IEM) shall be installed at the site. The cost of the IEMs shall be borne by the BESS developer.

b) IEMs having facility for both 5-minute and 15-minute metering shall be installed as a part of the BESS project.

c)BESS developer shall take weekly meter readings and transmit them to SLDC as per IEGC provisions. Data flow from BESS to SLDC shall be as per CERC/CEA/AERC Regulations and its subsequent Amendment(s).

8.Voice and Data requirements:

a) Reliable voice and data telemetry shall be provided by the BESS Developer.

b) BESS Developer shall take all measures to ensure the telemetry of all signals/status to SLDC as per operating procedure approved by SLDC.

c)BESS should be ready in terms of infrastructure to accept AGC signals from SLDC.

9.Compensation Charge:

Compensation charge for settlement under Ancillary Service Regulation shall be considered as daily average ACP of the Day Ahead Market (DAM) of the Power Exchange having 80% or more volume in the DAM, applicable for the day of despatch. In case no exchange has volume equal to or more than 80%, the weighted average of the daily average ACP of DAM of all power exchanges shall be taken as compensation charge.

10.Deviation Settlement:

a) Through appropriate metering philosophy as decided by SLDC, the actual delivery of BESS shall be recorded and deviations against aggregate schedule shall be worked out for each time block as per extant regulations.

b) DSM accounts shall be prepared for the entire capacity of BESS.

c)The charges for deviation shall be as per the applicable regulatory provisions.

d)SLDC shall issue the DSM accounts for BESS.

e) The reference charge rate for DSM computation shall be equal to the weighted average of compensation charge/PPA rate/Normal rate of charge, as applicable.

f) The treatment of auxiliary power consumption including transformer losses shall be duly factored by the BESS developer for computation of the ex-bus (MW) quantum of schedule.

g) BESS Developer shall pay/receive charges for deviation in line with CERC Deviation Settlement Mechanism Regulations, and its subsequent amendment and/or extant order.

h) BESS developer shall ensure timely payment of deviation charges to the respective DSM Pool account as per timelines notified in the extant Regulations.

11. Transmission Charges and Losses:

a)For despatch under Ancillary Services, interstate transmission charges and losses shall be applicable in accordance with the CERC Ancillary Service Regulations.

b) For despatch to DISCOM, intra-state Transmission Charges and Losses shall be applicable as per applicable regulations of the Commission..

12. Accounting and Settlement for BESS:

a) ERPC shall issue weekly Ancillary Services accounts including BESS as per the formats provided in the Detailed Procedure of Ancillary Service Regulation issued by the Nodal agency.

b) Charges on account of Ancillary Services shall be settled (pay-in/pay-out) by BESS developer as per the RPC accounts.

c)GST and TDS shall be applicable as per the prevailing rates on the invoice raised. The concerned RPC shall issue weekly Ancillary Services Accounts including BESS as per the formats provided in the Detailed Procedure of Ancillary Service Regulation issued by Nodal agency.

d)The incentive and/or penalty for performance/availability as per contract for the battery operation will be settled by DISCOM annually as onetime payment (for incentive) /receivable (for penalty) to/from BESS developer, subject to annual truing up of availability incentives/penalties, rebate, surcharge, if any, as per the applicable regulations of this Commission thereunder, after the availability certification by SLDC.

Authorized Signatory
(CGM)
SLDC

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