RAJASTHAN ELECTRICITY REGULATORY COMMISSION, JAIPUR

Petition No. 2364/2025

In the matter of the Rajasthan Electricity Regulatory Commission [Battery Energy Storage Systems (BESS)] Regulations, 2025.

Coram:

Dr. Rajesh Sharma, Chairman
Sh. Hemant Kumar Jain, Member

Date(s) of hearing: 28.11.2025

Date of Order: 10.03.2026

Memo on Statement of Objects & Reasons and consideration of comments/ suggestions, received from various stakeholders:

Background:

1. The Rajasthan Electricity Regulatory Commission ('RERC' or the 'Commission'), in the exercise of the powers conferred by Section 86(1) (e) read with Section 181 of the Electricity Act, 2003 (Act 36 of 2003) had prepared the following draft Regulations (hereinafter referred to as 'the Draft Regulations'), namely:

   "Rajasthan Electricity Regulatory Commission [Battery Energy Storage Systems (BESS)] Regulations, 2025."

2. These Draft Regulations, along with the Explanatory Memorandum and Public Notices, were placed on the Commission's website to invite comments from interested persons. Comments/suggestions were also invited through Public Notices published in the following newspapers on the dates indicated next to each.

   (1) Dainik Bhaskar : 17.10.2025
   (2) Rajasthan Patrika : 17.10.2025
   (3) The Times of India : 17.10.2025

3. The last date for the interested persons/ public to submit comments/suggestions was 14.11.2025. Eleven (11) stakeholders mentioned at **Annexure-I** offered their comments/suggestions on the Draft Regulations and Explanatory Memorandum, which the Commission considered while finalising the Regulations.

4. The matter was heard on 28.11.2025. The list of stakeholders who were present during the hearing is included in **Annexure-II**.

5. The main comments and views expressed by the stakeholders through their written submissions and during the hearing, and the Commission's analysis/views thereon have been summarised in the following paragraphs. Additionally, the written suggestions received from RVPN vide letter dated 17.12.2025 have also been appropriately considered. The comments/suggestions have been grouped /categorised depending on their nature and relevance.

6. The draft Regulations were published for stakeholder consultation as RERC [Battery Energy Storage Systems (BESS)] Regulations, 2025 upon finalisation, these Regulations will be called as the "RERC (Battery Energy Storage Systems) Regulations, 2026" corresponding to the year of notification.

7. All the suggestions given by the stakeholders have been considered, and the Commission has attempted to elaborate all the suggestions and the Commission's views/ decisions on each suggestion in the Statement of Object & Reasons. However, in case any suggestion is not specifically elaborated, it does not mean that the same has not been considered. The Regulations have been finalised considering the Electricity (Amendment) Rules, 2025, CEA Regulations and best practices followed in other jurisdictions. Further, the change in syntax/phrase/addition of

word(s)/ rewording/renumbering related changes have also been suitably incorporated, wherever necessary.

Part I
Preliminary

Regulation 1: Short Title, Commencement, and Applicability:

Commission's Proposal:

"1. Short Title, Commencement, and Applicability

1.1. These Regulations may be called the Rajasthan Electricity Regulatory Commission [Battery Energy Storage Systems (BESS)] Regulations, 2025.
1.2. These Regulations shall come into force from the date of publication of these Regulations in the Official Gazette.
1.3. These Regulations shall apply to all Licensees, Generating Companies, Renewable Energy Developers, Aggregators, Battery Energy Storage System (BESS) Service Providers, Consumers, and other entities involved in the Planning, Procurement, Deployment, Operation, or Utilization of Battery Energy Storage Systems within the State of Rajasthan.
1.4. Technology Neutrality: These regulations are intended to be technology-neutral and shall apply to all forms of battery energy storage systems that meet the required technical and performance standards, ensuring the framework remains relevant as technology evolves."

Stakeholders' Comments/Suggestions:

8. The stakeholders have mainly submitted as follows:

8.1 At regulation 1.3, the term consumer should be clearly defined. It is suggested that a consumer be defined as a prosumer who has installed rooftop solar and an energy storage system (ESS) with features such as auxiliary services and behind-the-meter (BTM) operation. This definition should ideally include all commercial and industrial (C&I) consumers who can actively contribute to the state's renewable and storage mission.

8.2 The Regulations should be modified to include Pumped Hydro Storage and other energy storage technologies. This will align the framework with the Rajasthan Integrated Clean Energy Policy 2024 and the National Framework for Promoting Energy Storage, 2023, published by the Ministry of Power (MoP).

8.3 To broaden the scope of distributed generation sources eligible for storage integration Small Rooftop wind turbine should be included for charging of Batteries.

Commission's Analysis/decision:

9. As regards the stakeholder's suggestion to include other non battery storage technologies such as Pumped Hydro Storage and other non-Battery storage technologies in the Regulations, the Commission is of the view that the scope of the present Regulations is limited to Battery Energy Storage Systems only. However, in case of other Energy Storage technologies the provision of Project specific tariff already exists under the RERC RE Tariff Regulations 2020. In addition, the Commission may also consider such new technologies through a separate order till regulations for such technologies are specified. To bring more clarity in this respect the following proviso may be added to sub regulation 1.4:

> *"Provided that these Regulations, by order of the Commission, may be extended to other energy storage technologies mutatis- mutandis until such time as the specific Regulations for such technologies are notified by the Commission."*

10. Regarding the inclusion of a small Rooftop wind turbine for charging Batteries, the Commission clarifies that BESS may be charged from any renewable energy source, including such sources, subject to technical safety requirements. Therefore, no change is required in the draft regulations on this account.

11. As regards the suggestion of defining prosumer, it is observed that 'Prosumer' is already defined in the Electricity (Rights of Consumers) Rules,2020, issued by the MoP; therefore, in our view, there is no requirement to define it again in these Regulations.

12. In view of the significant roles assigned to the State Transmission Utility (STU) and the State Load Despatch Centre (SLDC) under these

Regulations, particularly in respect of storage planning, ancillary services operationalization, these entities have also been included in the applicability under regulation 1.3. Similarly, the term 'Prosumer' has been added alongside 'Consumer' consistent with Explanation added in the subsequent Regulations. The regulation 1.3 shall be substituted as follows:

"1.3. These Regulations shall apply to all Licensees, State Transmission Utility (STU), State Load Despatch Centre (SLDC), Generating Companies, Renewable Energy Developers, Aggregators, Battery Energy Storage System (BESS) Service Providers, Consumers/Prosumers, and other entities involved in the Planning, Procurement, Deployment, Operation, or Utilization of Battery Energy Storage Systems within the State of Rajasthan."

13. In order to bring in more clarity, the sub-regulation 1.4 may be substituted with the following:

"1.4. Technology Neutrality: These Regulations are intended to be Battery Energy Storage System technology-neutral and shall apply to all forms of battery energy storage systems that meet the required technical and performance standards, ensuring the framework remains relevant as technology evolves."

Regulation 2: Definitions:

Commission's Proposal:

"2. Definitions

(1) In these Regulations, unless the context otherwise requires:

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

b) ***"Aggregator(s)"*** *or* ***"Distributed Energy Resources Aggregator or DERA"*** *means an entity registered/appointed with/by the distribution licensee to provide aggregation of one or more services like demand response services, Distributed Generation, Energy Storage, etc., within a license area.*

c) ***"Ancillary Service (AS) capacity obligation"*** *is the capacity signalled for despatch by the Nodal Agency under SRAS or the capacity procured by the Nodal Agency under TRAS;*

d) ***"Banking"*** *means a facility through which the unutilized portion of energy from any of the Green Energy Sources during a billing month is kept in a separate account and treated in accordance with the conditions laid down in the relevant Regulations issued by the Commission.*

e) ***"Battery Energy Storage Systems"*** *or* ***"BESS"*** *shall mean the system(s)/projects utilizing electrochemical batteries or any other technology as per the guidelines issued by the Ministry of New and Renewable Energy (MNRE) from time to time, providing a facility that can store chemical energy and deliver it as electricity.*

f) ***"Battery Energy Storage System Developer"*** *or* ***"BESSD"*** *or* ***"Developer"*** *shall mean the entity owning/operating the BESS facility for the supply of power under this regulation.*

g) *"**Commission"** means the Rajasthan Electricity Regulatory Commission.*

h) *"**Distribution Licensee**", "Transmission Licensee", "Generating Company", and "**SLDC**" shall have the meanings assigned to them under the Act.*

i) *"**Firm and Dispatchable RE Power"** means the power profile configuration that is defined in the RfS that is sought to be met by RE power sources and will include configurations like assured peak power, Round the clock RE with firm delivery of power at rated capacity at any hour of the day as per demand or load following power delivery as specified by Discoms, Clean energy project with firm delivery of power for fixed hours of requirement by Discoms etc. .*

j) *"**Fuel Cell"** means an electrochemical cell that converts the chemical energy of a fuel and an oxidizing agent into electricity.*

k) *"**Nodal Agency**" means the State Load Despatch Centre (SLDC), which shall be responsible for the implementation of the Ancillary Services at the intra-state level.*

l) *"**Standalone BESS**" means a BESS operating independently as a merchant unit that has the capability to engage in energy or capacity trading in power markets or AS.*

m) *"**Round-Trip Efficiency"** means the ratio of the total electrical energy discharged from the BESS to the total electrical energy supplied to charge the BESS, expressed as a percentage.*

n) *"**Un-Requisitioned Surplus**" or "URS" means the capacity in a generating station that has not been requisitioned and is available for dispatch, and is computed as the difference between the declared capacity or maximum possible generation, as the case may be, of the generating station and its total schedule.*

(2) Save as aforesaid and unless repugnant to the context or the subject matter otherwise requires, words and expressions used in these regulations and not defined, but defined in the Act, or the Grid Code or any other regulation of the Commission/CERC shall have the meaning assigned to them respectively in the Act or the Grid Code or such other regulation as amended time to time."

Stakeholders' Comments/Suggestions:

14. The stakeholders have mainly submitted as follows:

14.1 The Central Electricity Authority (CEA) has issued draft CEA (Technical Standards for Construction of Electrical Plants and Electric Lines) (Second Amendment) Regulations,2025 under S.73(b) of the Electricity Act, 2003, which covers Battery Energy Storage System (BESS). The definitions given under the RERC BESS Regulations should not differ from those of the CEA Regulations. The Commission may review the definitions of Battery Energy Storage System and that of MWh output of

BESS. Since Tariff-Based Competitive Biddings specify BESS capacity in MW as well as MWh, it would also be appropriate to define BESS Capacity in MW as the maximum power output during a time block of 15 minutes and to define BESS capacity in MWh as per the CEA Regulations.

14.2 Regulation 3(1) of the Central Electricity Regulatory Commission (CERC) (Ancillary Services) Regulations, 2022 defines ancillary services, SRAS and TRAS. Regulation 6 specifies that BESS will be eligible to provide ancillary services, including frequency regulation, spinning reserve, Voltage support, Black start, and Demand response. However, the above ancillary services do not appear to be defined in the RERC Regulations. Commission may please indicate the applicability of CERC Regulations or any other mechanism for determining tariff for BESS when utilised for ancillary services. It is further requested that definitions of ESO/RPO/RCO may also be included.

14.3 As 'fuel cell' is defined to make the Regulations of BESS comprehensive, therefore 'flow battery', which also stores electrochemical energy and regenerates it on demand, may also be defined in these Regulations.

14.4 It would be preferable if Regulation 2(2) is specific to the Grid Code as per the Act or the State Grid Code and the relevant CERC and RERC Regulations.

14.5 It is requested to consider "Small BESS system" (Equivalent to 250 kW/2500 units per day).

14.6 The definition of "Firm and Dispatchable RE power" at 2(1)(j) needs more clarity.

14.7 It may be clarified whether the definition of "Fuel Cell" means use of grid electricity at low ToD rates and then mixing it with grid under BTM, or does it mean localised green hydrogen for feeding fuel cells and then electricity? Is any subsidy available for this purpose?

14.8 All C&I consumers/prosumers, past and present, should be explicitly included within the regulatory framework to ensure wide participation.

14.9 The following definition of "Special Purpose Vehicle" may be inserted and should include operating and maintaining energy storage viz., battery storage/ pump storage to enable them to operate and maintain storage assets on rental basis or any other model:

"Special Purpose Vehicle" or "SPV" shall mean a legal entity owning, operating and maintaining a generating station including operating and maintaining energy storage viz. battery storage, pump storage etc., on rental basis or any other model and with no other business or activity to be engaged in by the legal entity".

Commission's Analysis/decision:

15. As regards the suggestion of aligning the definition of Battery Energy Storage Systems, after considering the provisions of the Draft CEA Regulations, we consider it appropriate to substitute the definition of BESS proposed in the Draft Regulations as follows:

"Battery Energy Storage System (BESS)" means a stationary system connected to the electricity system which is used to store electrical energy by means of electrochemical materials and typically includes batteries, power conversion system and Battery Management System (*BMS)*."

16. As regards the suggestion of inserting the definitions of Ancillary services, PRAS/SRAS/TRAS, the Ancillary Services, PRAS/SRAS/TRAS shall have the meanings assigned under the applicable Regulations, Grid Code or procedure as amended from time to time. However, for the sake of clarity, the following definition has been inserted:

"Ancillary Services" or "AS" *means the services defined under the Central Electricity Regulatory Commission (Ancillary Services) Regulations, 2022 as amended from time to time;*

17. Further, as regards including definitions of ESO/RPO/RCO, the same shall be as per the relevant Regulation and MoP notifications issued from time

to time and need not to be incorporated in the present Regulations. Therefore, no change is required in this regard.

18. As regards adding the definition of SPV, the draft already recognizes an "independent battery energy storage service provider" (Clause 4.4), so introducing SPV in our view is not necessary to enable lease/rental models. . Therefore, no change is required in the draft Regulations.

19. As regards the suggestion of defining MW and MWh, the same shall be governed by the relevant CEA Regulations amended from time to time, as such in our view there is no requirement of defining them in these regulations.

20. In order to align the Regulations with MoP Policy on energy storage ownership and to provide clarity on eligible ownership models, the following definition shall be added and other definitions will be renumbered appropriately:

> "***Ownership of Energy Storage System***" *shall mean the ownership of Energy Storage System including Battery Energy Storage Systems as per the guidelines issued by the Ministry of Power (MoP) from time to time, permitting ownership by Distribution Licensees, Transmission Licensees, Generating companies, independent power producers, consumers, Aggregators and third party investors, subject to applicable laws and Regulations."*

21. Further, MoP's National Framework for promoting Energy Storage Systems recognises standalone grid connected storage alongside other deployment and to emphasise independence the existing definitions of standalone BESS will be substituted with the following and other definitions will be renumbered appropriately:

> ***"Standalone Battery Energy Storage System (BESS)"*** *means an energy storage system that is not co-located with any generating station or consumer load and is not dedicated to a specific generator or consumer, and which may participate in power markets, ancillary services, or be contracted under long-term or short-term arrangements;"*

22. Further, to ensure consistency and to avoid restriction in participation of developers for supply of power only and to cover energy storage

services also, the definition of Battery Energy Storage System Developers or BESSD shall be substituted as under:

"Battery Energy Storage System Developer" *or "BESSD" or "Developer" means the entity owning and/or operating the BESS facility for the supply of power or provision of storage services under these Regulations;*

23. In course of finalising the definitions, due to their limited use in these Regulations, the definitions such as "Banking", "Firm and Dispatchable RE Power", "Un-Requisitioned Surplus" or "URS", "Ancillary Service (AS) Capacity Obligation" and "Fuel Cell" have been deleted. Accordingly, the remaining definitions have been renumbered appropriately.

24. Commission has considered the suggestion to align the definitions specific to the Grid Code as per the Act or the State Grid Code and the relevant CERC and RERC Regulations. Accordingly, sub regulation 2(2) shall be substituted as follows:

"(2) Save as aforesaid and unless repugnant to the context or the subject matter otherwise requires, words and expressions used in these regulations and not defined herein, but defined in the Act, or the Grid Code/IEGC (as applicable) or any other Regulations/orders of the Commission/CERC/CEA shall have the meaning assigned therein, as amended from time to time."

Regulation 3: Objectives:

Commission's Proposal:

3. Objectives
The primary objectives of these Regulations are:
(a) To enable deployment and utilization of BESS as part of generation, transmission, and distribution assets;
(b) To facilitate the participation of BESS in ancillary services and energy markets;
(c) To promote cost-effective energy storage solutions that support grid stability, frequency management, and renewable energy integration;
(d) To establish a framework for Aggregators and third-party BESS developers to participate in the electricity market.

Commission's Analysis/decision:

25. In order to broaden the coverage and to also include distributed/ C& I storage applications, the following clause (e) will be added below the clause (d) of the Regulations:

"(e) To enable market development and adoption of Battery Energy Storage Systems across all sectors."

Regulation 4: Ownership and Business Models:

Commission's Proposal:

4. Ownership and Business Models

4.1. BESS may be developed and owned by Distribution Licensees, Transmission Licensees, GENCOS, Independent Power Producers (IPPs), Consumers, SLDC, Standalone BESS, Renewable Energy Developers, Aggregators, or any other third-party investors.

4.2. BESS may be deployed as co-located with RE & Conventional generators, grid-connected standalone storage, embedded in distribution or transmission networks, behind the meter (Consumer level), or integrated with Electric Vehicle (EV) infrastructure for Vehicle-to-Grid (V2G) services.

4.3. The Battery Energy Storage System shall be utilised either as an independent battery energy storage system or as part of the generation, transmission, or distribution system or integrating the consumer's load independently or with RE sources co-located behind the meter.

4.4. The Battery Energy Storage System can be developed, owned, leased, or operated by a generating company, a transmission licensee, a distribution licensee, a consumer, a system operator, or an independent battery energy storage service provider.

4.5. The Battery Energy Storage System shall have the same legal status as that of the owner:

Provided that if such a Battery Energy Storage System is not co-located with, but owned and operated by, the generating station or licensee or consumer, the legal status shall still be that of the owner, but for the purpose of scheduling and dispatch and other matters, it shall be treated at par with a separate storage element.

Stakeholders' Comments/Suggestions:

26. The stakeholders have mainly submitted as follows:

26.1 Regulation 4.1 provides that the BESS may be developed and owned by distribution licenses, transmission licenses, Gencos, independent power producers, IPPs, consumers, SLDC (stand-alone BESS), renewable energy developers, aggregators or any other third-party investors. Similar provision is made at Regulation 4.4, except that instead of the SLDC term, the System operator is used. SLDC (or System Operator), State Transmission Utility (STU), and Transmission Licensee cannot undertake

the business of trading of electricity as per Section 31(2), Section 39(1), and Section 41 of the Electricity Act, 2003. The operation of BESS normally involves the purchase of renewable energy for storage and the sale of stored energy to the Discom or consumer, and, as such, will be a trading activity. Other than their self-consumption and BESS operation not resulting in trading, SLDC cannot develop and operate BESS. For them, this specific provision has to be made in this regulation and first para of Regulation 7.

26.2 In alignment with the principles of inclusivity, consumer empowerment, and decentralized energy transition, it is imperative that Clause 4.1 of the Draft Regulations explicitly recognize consumers connected to the grid through the Net Metering System (NMS), Net Billing System (NBS) Group, Net Metering (GNM), and Virtual Net Metering (VNM) are eligible entities for ownership and operation of battery energy storage systems (BESS). Furthermore, under the RERC-GEOA Regulations 2025, consumers with contract demand or sanctioned load of 100 kW or more (except for captive) can have open access to electricity generated from renewable energy sources. These consumer categories represent a rapidly growing segment that actively contributes to grid decarbonization and demand-side flexibility. The integration of BESS with such consumer-level renewable energy systems enhances grid resilience, enables peak load management, and facilitates energy arbitrage, thereby supporting the broader objective of the regulations. Moreover, the draft regulations already acknowledge behind-the-meter BESS installations and hybrid systems under consumer premises. Therefore, extending the Regulation 4.1 as per the following to explicitly include NMS, NBS, GNM, and VNM connected consumers ensures regulatory clarity and avoids interpretational ambiguity and promotes equitable access to energy storage participation:

"4.1. BESS may be developed and owned by Distribution Licensees, Transmission Licensees, GENCOS, Independent Power Producers (IPPs), Consumers, SLDC,

Standalone BESS, Renewable Energy Developers, Aggregators, ***a consumer Connected with the Grid through Net metering (NMS), Net Billing System (NBS), Group Net Metering System (GNM) or Virtual Net Metering (VNM) or any other third-party investors (incl. consumers availing Green Open Access).***"

26.3 It is requested to explicitly define BESS-as-a-Service to clarify equity ownership requirements, control and usage rights in third-party operated storage models under lease rent basis in line with Electricity Amendment Rules dated19.09.2025 issued by the Ministry of Power. In case there is BESS installed and used by captive users under service model/ rental basis,i.e., BESS-as-a-Service, then there shall be no requirement of equity infusion by captive users on CAPEX for BESS. To avoid ambiguity in captive compliance for users leveraging BESS-as a-Service model, it is suggested to add the following proviso to regulation 4.4:

"Provided that the consumption of electricity by the captive user may be either directly or through energy storage system"

Further, in the case of a group captive project with multiple captive user(s), where BESS is installed to supply not all but only specific captive user(s), such supply need not be allocated proportionally among all users. Rather, supplying any single captive user from BESS in a group captive project should be added to normal consumption, while the captive status is ascertained. This is required to be included, as there may be instances in which any one of the captive users may intend to use storage to meet peak power requirements in a group captive project.

26.4 The current Regulations do not provide a mechanism for settling deviation by a standalone BESS from its schedule. In this regard, it is submitted that the CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2024, have a mechanism for settling deviation by a standalone ESS from its schedule. Relevant clauses are presented below:

"8. Charges for Deviation

……

(5) Charges for Deviation, in respect of a Standalone Energy Storage System (ESS), shall be the same as applicable to a general seller (other than RoR generating station and a generating station based on municipal solid waste) as specified in Clause (1) of this Regulation:

Provided that in the charging mode, deviation by way of over drawal shall be treated as under injection and deviation by way of under drawal shall be treated as over injection and the charges for deviation shall be settled accordingly:

Provided further that the charges for deviation including the formula for computation of Deviation, in respect of charging of a standalone ESS being pumped hydro storage plant shall be the same as applicable to a WS seller being a generating station based on solar resources, for the period from the date of commencement of these regulations to 31.03.2026.

(6) Charges for Deviation including the formula for computation of Deviation, in respect of a WS Seller with ESS connected at the same interconnection point shall be the same (i) as applicable to a WS seller of respective category during the period solar or wind or hybrid generating station is injecting power, (ii) as applicable to a standalone ESS as per sub-clause (5) of this Regulation, when only ESS is injecting power, and (iii) as applicable to a standalone ESS for drawl by ESS based on drawal schedule from the grid as per sub-clause (5) of this Regulation.

Note: Each generator and ESS shall be metered with a Special Energy Meter (SEM) so that individual actual injection/drawal can be captured."

26.5 It is submitted that the aforementioned mechanism developed by Hon'ble CERC may be adopted by Hon'ble RERC for DSM related to ESS.

26.6 Clause 4.5 of the draft regulation states that BESS which is not co-located shall be treated at par with a separate storage element for scheduling and dispatch and other matters .The current Regulations do not provide a mechanism for settling deviations by a standalone BESS from its schedule. In this regard, it is submitted that the CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2024 provide a mechanism for settling deviations by a standalone EESS from its schedule. It is submitted that the aforementioned mechanism developed by CERC may be adopted by the Commission for DSM related to ESS.

Commission's Analysis/decision:

27. Several stakeholders have submitted that Regulation 4.1 lists SLDC as an entity that may own BESS, and in terms of S.31(2), S. 39(1), and S.41 of the Electricity Act,2003, SLDC may be deleted. In order to make a clear separation between "market/system operator" and "market participant" and considering the suggestions received regarding the statutory position of the SLDC under the Act, the Commission considers it appropriate regulation 4.1 may be substituted with the following and regulation 4.4 may be deleted and sub-regulations will be appropriately renumbered :

4.1 BESS may be developed, owned, leased, or operated by Distribution Licensees, Transmission Licensees, Generating Companies, Independent Power Producers (IPPs), Independent Battery Energy Storage Service Provider, Consumers/Prosumers, Standalone BESS developers, Renewable Energy Developers, Aggregators, or any third-party investors, in accordance with the Guidelines/Notification/Rules issued by the Central Govt from time to time.

Provided that the SLDC, as Nodal Agency, shall discharge system operation functions in accordance with these Regulations.

28. As regards the suggestion of explicitly recognizing the consumers connected via Net Metering (NMS), Net Billing (NBS), Group Net Metering (GNM), Virtual Net Metering (VNM), and GEOA consumers, the Draft Regulation already includes "Consumers" as eligible owners vide Reg. 4.1 and separately enables behind-the-meter consumer BESS vide Reg. 16.1.However, for the sake of clarity the following explanation shall be added below the regulation 4.1 and before the above proviso:

"Explanation: "Consumers/Prosumers" include consumers participating under Net Metering/Net Billing/Group Net Metering/Virtual Net Metering frameworks or under Green Energy Open Access, as applicable."

29. As regards the suggestions on introducing the Deviation Settlement Mechanism (DSM) for standalone BESS, aligning with the CERC DSM Regulations 2024 and other aspects such as Special Energy Meter (SEM) metering, deviation treatment for charging/discharging, it is noted that CERC has specified DSM Mechanism in respect of BESS through its Regulations as well as orders/ procedure. Accordingly, Commission

considers it appropriate that the following second proviso may be added to the renumbered Regulation 4.4:

"Provided further that:
(1) Standalone BESS and any non-co-located BESS scheduled as a separate storage element shall comply with scheduling, metering, telemetry, and dispatch requirements under the applicable Grid Code and SLDC procedures.
(2) Deviations from the schedule for such BESS shall be settled as per provisions of the applicable Regulations/ Orders/ procedure of CERC mutatis-mutandis in this regard, as amended from time to time till such time Regulations in this regard are issued by the Commission.
(3) Metering shall be through SEM or other such arrangement as specified by SLDC to distinctly capture charging drawal and discharging injection at the interconnection point."

30. As regards the suggestion to define "BESS-as-a-Service," it is stated that the scope of these Regulations is not to determine captive compliance tests or equity requirements; such a case is governed under the captive framework and is typically assessed under the applicable rules/orders for captive and group captive arrangements. However, it is to clarify that using BESS (owned/leased/third-party operated) does not, by itself, change the legal status of captive arrangements, captive treatment remains governed by the applicable captive framework. For further clarity it would be appropriate to add the following second proviso below the renumbered regulation 4.1 :

"Provided further that nothing in these Regulations shall be construed to determine or modify the status/eligibility of any Captive Generating Plant, captive user(s), or Group Captive arrangement. Any such determination shall be governed by the applicable captive framework and the relevant regulations/rules/orders."

Regulation 5: Planning and Procurement:

Commission's Proposal:

5. Planning and Procurement

5.1. The holistic system requirements, including but not limited to, managing reverse power flow from lower to higher voltage at various substations, addressing transmission or distribution network congestion, mitigating high renewable energy penetration challenges, and resolving voltage or frequency stability issues, shall be the criterion for finalizing the BESS locations in the Distribution System or Transmission System by Distribution/Transmission licensees.

5.2. The Distribution Licensees and the State Transmission Utility (STU) shall plan the requirement of energy storage capacity within their respective areas of operation, keeping in view the technical considerations, system reliability, and load requirements.

Provided that in the process of such planning, both the Distribution Licensees and the STU shall consult the State Load Despatch Centre (SLDC).

Provided further that the proposed storage plan shall be submitted for approval to the Commission along with the ARR/Investment Plan.

Provided also that in their respective plans, the licensees shall specifically indicate whether they intend to install and operate their own Battery Energy Storage System (BESS) along with its proposed location, or procure energy storage capacity or services from third-party providers, specifying the proposed injection point, justifying the location.

5.3. The minimum individual project size shall have a power rating of 1MW and above, with a suitable energy rating of at least two hours, connected at 11 kV or above.

Provided that this minimum size does not apply to BESS at the Distribution Transformer (DTR) level or for behind-the-meter applications by consumers.

Provided further that the Commission may, from time to time, review and revise the minimum project size through separate order to adapt to technological advancements and market conditions.

Stakeholders' Comments/Suggestions:

31. The stakeholders have mainly submitted as follows:

31.1 Regulation 5.2, in addition to the storage plan with ARR/Investment Plan, should also include load flow studies of the State Transmission and Distribution system for the present year and the past two years.

31.2 Regulation 5.2 provides that the Distribution Licensee and the State Transmission Utility shall plan the requirement of energy storage capacity within their respective area of operation. The respective area of operation can be construed as the operation of BESS in the distribution system for the Distribution Licensee and in Intrastate Transmission Systems for STU/Transmission Licensees. The Commission may, if needed, make appropriate modifications considering that:

(a) As per Regulation 4.3 of the RERC (Renewable Purchase Obligation) Regulations, 2023, the Distribution Licensee is to comply with the minimum Energy Storage Obligation (ESO) as part of the total RPO, and, as such, the Distribution Licensee is to plan for such purchase, whether from BESS or PSP.

(b) As per Section 39(2) of the Electricity Act, 2003, RVPN as STU is to plan an Intrastate Transmission System which ensures development of an efficient, coordinated, and economical system of Intrastate Transmission Lines for smooth flow of electricity from a generating station to the Load Centres.

(c) Accordingly, planning studies to meet ESO are part of the Study of Distribution Licensee, irrespective of the location(s) of BESS. The appropriate locations for such BESS that yield the maximum benefit to the Intrastate grid are part of STU's planning study. Thus, Distribution licenses and STU should coordinate, and STU's BESS planning for the state as a whole should be provided to Distribution licenses for consideration of implementation.

31.3 To align with the Ministry of Power's Resource Adequacy (RA) framework, the proposed Regulation 5.2 should be modified to ensure that energy storage planning by distribution licensees and State Transmission Utilities is explicitly linked to national guidelines and a structured cost-optimization analysis. Currently, the draft risks promoting high-cost Battery Energy Storage System (BESS) additions without clear justification, as it lacks requirements to evaluate more cost-effective alternatives—such as demand-side initiatives or network upgrades—before procurement. By integrating these RA planning principles, the Commission can prevent asset oversizing and ensure that BESS investments provide genuine reliability benefits and accredited peak support rather than becoming inefficient, high-cost assets.

31.4 Regulation 5.3 prescribes that BESS projects must have a minimum power rating of 1 MW and an energy duration of at least 2 hours, except for distribution transformer-level and behind-the-meter systems. It does not provide any technical reasoning or system-specific justification for the criteria. As the draft or the appended explanation does not offer justification for these criteria, it creates ambiguity as to whether smaller distributed units, DTR-level storage, or localized applications are intentionally excluded or omitted due to oversight. It is therefore requested that the Commission clarify the basis for the 1 MW/2 hour minimum criteria and explain how these three swords align with Rajasthan's system needs.

31.5 A small BESS system should be allowed by the concerned DISCOM/Distribution franchises for a predetermined time slot for the injection of Power, only technical suitability is to be checked and freed from other liabilities, viz, scheduling, planning, capacity declaration, etc.

31.6 At Regulation 5.3, the minimum project size should be reduced to 500 kW from the proposed 1MW to support MSMEs and small establishments.

31.7 At regulation 5.3, the proposed minimum capacity of 1 MW is too high. There should be no minimum capacity considering the provisions of net metering, net billing, VNM, GNM, and charging the batteries during solar hours and supplying electricity during non-solar hours. Further, to promote such systems, electricity for self-use and electricity supplied by batteries may be exempt from the levy of electricity duty or other charges/surcharges.

31.8 To ensure Regulatory certainty and investor confidence, it is requested that the policy incentives provided under Clause 6.4 and Clause 7.5 of the Rajasthan Integrated Clean Energy Policy,2024, be explicitly incorporated in the proposed BESS Regulations. This will provide statutory backing to the policy provisions and eliminate ambiguity for RE project developers and investors. Such inclusion is essential as it is in line with the

proposed objectives of the Draft BESS Regulations and is consistent with the legal doctrine of harmonious construction, thereby ensuring alignment between the aforesaid policy and these proposed Regulations.

31.9 The Draft Regulations already acknowledge behind-the-meter BESS installations and hybrid solar-BESS under consumer premises. Therefore, Regulation 5.3 should be extended to explicitly include NMS, NBS, GNM, and VNM connected consumers to ensure regulatory clarity, avoids interpretational ambiguity, and promote equitable access to energy storage participation such inclusion is also consistent with the RERC Net Metering Regulations and Green Energy Open Access Regulations, which encourage consumer level renewable integration and market participation Recognizing these consumers under the ownership and business model framework will further incentivize distributed storage deployment, reduce renewable curtailment and enable consumers to ancillary services and grid balancing mechanism. The proposed regulations 5.3 should be as follows:

> *"5.3. The minimum individual project size shall have a power rating of 1MW and above, with a suitable energy rating of at least two hours, connected at 11 kV or above.*
>
> *Provided that this minimum size does not apply to BESS at the Distribution Transformer (DTR) level or for behind-the-meter applications by* ***consumers or, consumer Connected with the Grid through Net metering (NMS), Net Billing System (NBS), Group Net Metering System (GNM) or Virtual Net Metering (VNM) incl. consumers having contract demand or sanctioned load of 100 kW or more but upto 1 MW as per RERC (Terms and Conditions for Green Open Access) Regulations 2025 with amendments thereof and avalling Green Open Access."***

31.10 The National Framework and SECI tenders have demonstrated market interest in varying BESS durations depending on application;1–2-hour systems for market operations and frequency response, and longer durations for contracted capacity services. Andhra Pradesh Regulations require a minimum energy rating of 4 hours, while the current draft requires only 2 hours. Flexibility in energy duration requirements allows

generating companies to optimize BESS sizing based on their specific operational needs and revenue models. Accordingly, Regulation 5.3 may be modified as follows:

> *"5.3. For intra-state BESS projects, the minimum individual project size shall have a power rating of 1 MW and above, with a suitable energy rating of at least two hours, connected at 11 kV or above.*
>
> *Provided that this minimum size does not apply to BESS at the Distribution Transformer (DTR) level or for behind-the-meter applications by consumers.*
>
> *Provided further that for BESS co-located with existing generating stations, the minimum energy rating may be reduced to one hour where the primary application is ancillary services or frequency regulation.*
>
> *Provided also that the Commission may, from time to time, review and revise the minimum project size through separate order to adapt to technological advancements and market conditions. "*

Commission's Analysis/decision:

32. As regards the suggestion of reducing the minimum project size to 500 kW, the 1 MW / 2-hour baseline has been proposed to keep grid-scale projects administratively manageable, while the Draft already exempts BTM and DTR-level systems. Also, there exists an enabling proviso under sub-regulation 5.3 for review and revision of the minimum project size through a separate order. In our view, thus, no change is required in the Draft Regulations on this account.

33. One of the stakeholders suggested that the storage plan should include load flow studies for the transmission and distribution system. Another stakeholder suggested that Discoms plan ESO compliance, while STU plans the optimal location for grid benefit, for which coordination is needed. In such a case STU statewide plan should be supplied to Discoms. Another stakeholder has suggested that the plan envisaged under regulation 5.2 should be linked to the MoP/CEA Resource Adequacy (RA) Planning Framework. After considering the above

suggestions, Regulation 5.2 of the Draft Regulations may be substituted with the following:

"5.2 The Distribution Licensees and the State Transmission Utility (STU) in consultation with SLDC shall plan the requirement of energy storage capacity within their respective areas of operation, keeping in view, among other relevant factors, the technical considerations, system reliability, load requirements, peak management, congestion relief, renewable energy integration and ancillary services and such other factors as may be relevant. While preparing the storage plan due consideration will be given to projected ARR savings from the relevant factors, but not limited to, avoided power purchase cost, deferred T& D Capex, reduction of losses and curtailment.

Provided that the storage planning shall be aligned with the State's Renewable Energy Policy, Energy Storage Targets, State Transmission Plan and any directives issued by the State Government or the Commission from time to time.

Provided further that the STU shall prepare a consolidated intra-state storage plan (including recommended locations/voltage levels), considering transmission and distribution constraints, and shall share it with Distribution Licensees, Transmission Licensee, SLDC and all other relevant entities for alignment on procurement/implementation.

Provided also that such planning and procurement shall, to the extent applicable, be aligned with the prevailing Resource Adequacy Plan/guidelines notified by the Ministry of Power/Central Electricity Authority. The proposed storage plan shall indicate the adequacy gap addressed, the expected capacity contribution of BESS , and a cost-optimization/options assessment, including alternatives such as network augmentation, demand-side measures, or flexible generation.

Provided also that where a Distribution Licensee or Transmission Licensee or a generating company subject to inclusion in above plan proposes BESS as a regulated network/grid-support asset (including associated enabling infrastructure) for, but not limited to, reliability, congestion management, voltage support or deferral of network augmentation, the Commission may approve such investment and cost recovery through ARR/Tariff following the due regulatory process for which the Commission may suitably adopt CERC Norms/methodology and also considering prevailing market conditions, as applicable, till such norms/methodology specified by the Commission.

Provided also that in their respective storage plans, the licensees or generating company shall specifically indicate whether they intend to install and operate their own Battery Energy Storage System (BESS) or procure energy storage capacity or services from third-party providers, along with its proposed location, specifying the proposed injection point, justifying the location based on technical, economic and grid integration considerations."

34. Suggestions have been received that injection from small BESS may be allowed at predetermined time slots, only technical suitability is to be checked; it may be exempted from scheduling/planning/capacity declaration. In our view, if a device can export to the grid, some form

of metering, accounting, and settlement must be in place. However, for small BTM exports, it can be settled through net billing/net metering rather than full SLDC scheduling. Further, SLDC scheduling may not be required for such small resources unless they participate in the market or ancillary services (AS) either directly or via an Aggregator. Accordingly, the following proviso to regulation 15.3 dealt later may be added:

"*Provided further that Behind-the-meter BESS exports by such consumers, where permitted and settled under the applicable net billing/net metering/GNM/VNM/ToD/ ToU framework administered by the Distribution Licensee shall not require SLDC scheduling, however, if such BESS participates in the market or in ancillary services directly or through an Aggregator shall comply with the directions of Distribution Licensee & SLDC and also comply with SLDC's Scheduling requirement as provided under the SLDC procedure*."

35. As regards the suggestion of extending the regulation 5.3 to explicitly include NMS, NBS, GNM, and VNM connected consumers, like earlier regulation 4.1, here also, the following explanation to the first proviso to the regulation 5.3 of the Draft Regulations shall be added:

"*Explanation: "Consumers/Prosumers" include consumers participating under Net Metering/Net Billing/Group Net Metering/Virtual Net Metering frameworks or under Green Energy Open Access, as applicable*."

36. As regards the suggestion to reduce the minimum energy duration to 1 hour for co-located BESS where the primary application is AS/frequency regulation, according to us, one-hour systems are a legitimate grid product for fast frequency response/regulation, and accordingly, the following second proviso shall be inserted below the first proviso to regulation 5.3 of the Draft Regulations:

"*Provided further that for BESS co-located with existing generating stations, the minimum energy rating requirement may be reduced to less than two hours where the primary application is ancillary services/frequency regulation, subject to approval of the storage plan by STU, Discom and SLDC*."

37. In order to address the curtailment of solar and wind power plants due to congestion and operational constraints, the regulation 5.1 of the Draft Regulations shall be substituted with the following:

"5.1 The holistic system requirements, including but not limited to, managing reverse power flow from lower to higher voltage at various substations, addressing transmission or distribution network congestion, mitigating high renewable energy penetration challenges, and resolving voltage or frequency stability issues, shall be the criterion for finalizing the BESS locations in the Distribution System or Transmission System by Distribution/Transmission Licensees."

Regulation 6: Utilization for Ancillary Services:

Commission's Proposal:

"6. Utilization for Ancillary Services

BESS shall be eligible to provide services such as frequency regulation, spinning reserves, voltage support, black start services, and demand response services or any other services defined in IEGC/REGC amended time to time."

Stakeholders' Comments/Suggestions:

38. The stakeholders have mainly submitted as follows:

38.1 Grid-scale BESS projects generate value by offering multiple grid services simultaneously, known as revenue stacking. This is particularly important for generating companies to achieve viable returns on BESS investments. CERC has established precedents for defining trading margins and accounting for multiple revenue streams in BESS operations. Accordingly, Regulation 6 of the Draft Regulations may be amended as follows:

"6.1. BESS shall be eligible to provide services such as frequency regulation, spinning reserves, voltage support, black start services, and demand response services or any other services defined in IEGC/REGC amended from time to time.
6.2. BESS owned by generating companies shall be permitted to provide multiple services concurrently or sequentially to different beneficiaries, subject to technical capability and contractual obligations, including:
(a) Ancillary services to SLDC;
(b) Energy arbitrage in power markets;
(c) Capacity services to distribution licensees;
(d) Reserve services for grid security.
6.3 The revenue earned from multiple services shall be accounted separately and shall not result in double-counting of benefits or liabilities.

6.4 Generating companies providing multiple services through BESS shall maintain adequate capacity to meet all contractual commitments. "

Commission's Analysis/decision:

39. As regards the suggestion received regarding multiple services, as per the Electricity (Amendment) Rules, 2025, the Energy Storage System can also be utilised as independent energy storage in addition to as part of generation, transmission or distribution. For the sake of clarity the existing provision of Regulations 6 shall be substituted with following:

"6.1. BESS shall be eligible to provide services including, but not limited to frequency regulation, spinning reserves, voltage support, black start services, and demand response services or any other services defined in IEGC/State Grid Code as amended from time to time.
6.2 BESS may provide multiple services concurrently or sequentially, subject to technical capability, telemetry/communication requirements, dispatch instructions, and contractual obligations.
Provided that the SLDC shall specify the methodology for separate accounting of such multiple services in the Procedure issued by it under regulation 13 of these Regulations.
6.3. Revenues and performance obligations for different services shall be accounted separately, and the framework shall prevent double accounting or double recovery of benefits or liabilities.
6.4 Any entity owning, operating or providing multiple services through BESS including Generating companies, Licensees, Standalone BESS Developers, Aggregators and IPPs shall maintain adequate capacity to meet all contractual commitments and shall not indulge in gaming. Where there is a conflict between contracted commitments and real-time system security requirements, SLDC instructions for grid security shall prevail, and settlement shall be as per the SLDC procedure issued in accordance with regulation 13 of these Regulations.
6.5 BESS participating in ancillary services shall meet the following minimum requirements:

- *(a) Response time as specified by SLDC for each category of ancillary services;*
- *(b) Communication and Telemetry infrastructure enabling real time data transmission to SLDC;*
- *(c) Capability to receive and respond to Automatic Generation Control (AGC) signals, where applicable; and*
- *(d) Metering arrangement as specified by the SLDC."*

Regulation 7: Role of Aggregators:

Commission's Proposal:

"7. Role of Aggregators

Aggregators may aggregate BESS resources from multiple sites to provide services to the SLDC/TRANSCO/DISCOM/GENCO or other market participants and shall follow the protocols issued by SLDC.

Provided that the SLDC in consultation with licensees, shall specify the minimum technical and financial eligibility criteria, online registration formats, applicable fees, and any other terms and conditions for an entity to register as an Aggregator. "

Stakeholders' Comments/Suggestions:

40. The stakeholders have mainly submitted as follows:

40.1 While Regulation 7 introduces Aggregators to facilitate ancillary services through combined resources like demand response and energy storage, it fails to define their specific roles, liabilities, and whether they function as commercial or operational entities. This ambiguity creates "indeterminate" boundaries between stakeholders and leads to an improper sub-delegation of power, as the SLDC, a technical operational body, is tasked with defining commercial and legal eligibility criteria that should fall under the Commission's jurisdiction. Consequently, the Commission may first establish a clear regulatory framework and rationale for aggregators before empowering the SLDC to prescribe registration requirements, ensuring that legal and operational accountability is maintained at the Commission level.

Commission's Analysis/decision:

41. The Commission has considered the submission and notes that Aggregators, by aggregating BESS resources, will necessarily interface with real-time grid operation through adherence to dispatch instructions, telemetry and data integrity, and metering, accounting, and settlement of the aggregated portfolio. These matters fall within the statutory domain of the State Load Despatch Centre as the apex body for integrated operation of the State power system under Section 32 of the Electricity Act, 2003, and the authority to issue operational directions and exercise supervision and control for secure and economic system operation under Section 33, with compliance obligations on connected entities. Accordingly, Regulation 7 has been structured to expressly fix

core responsibilities and liabilities of Aggregators within the Regulations, while permitting SLDC to prescribe detailed procedures and technical protocols for implementation (including registration process, data and communication requirements, and operational compliance) strictly consistent with these Regulations and the applicable Grid Code and subject to the Commission's regulatory oversight. According to us this approach does not amount to impermissible sub-delegation, as the Commission retains the essential normative framework under its regulation making powers and statutory functions, and only procedural and technical detailing necessary for effective system operation is left to the implementing authority, which consistent with the settled jurisprudence of the Supreme Court on delegated legislation and APTEL's recognition of SLDC's statutory role in integrated grid operation. Therefore, no change is required on this account.

Regulation 9: Tariff and Market Participation:

Commission's Proposal:

9. Tariff and Market Participation

9.1. All procurement of BESS capacity and services by the Licensees shall be undertaken only through tariff-based competitive bidding.

9.2. Battery Energy Storage Systems (BESS) owned or operated by consumers shall be permitted to participate in energy arbitrage by purchasing electricity from the grid during off-peak hours and selling it back to the grid during peak hours.
Provided that the settlement mechanism for such transactions shall be as specified by the Commission through a separate order either Suo-motu or based on application filed before it.

Provided further that consumers may install the Battery Energy Storage System either as a standalone system or in conjunction with a solar power plant.

Provided also that consumers shall be allowed to operate the BESS in such a manner that the energy stored in the system, installed behind the consumer's meter, may be utilized for self-consumption or supplied to the Distribution Licensee during peak hours for which Commission may specify incentivize tariff.

9.3. For the procurement of ancillary services, the Commission may approve a single part or multi-part tariff structure, which may include a fixed capacity charge for availability, a variable energy charge for dispatch, and performance-based incentives to ensure reliability.

9.4. Renewable energy procured and used for charging BESS shall retain its renewable character upon discharge and consumption. Accordingly, obligated entities or consumers shall be eligible to claim the RPO/RCO benefit for such consumption.

Stakeholders' Comments/Suggestions:

42. The stakeholders have mainly submitted as follows:

42.1 Regulation 9.1 provides that all procurement of BESS capacity and services by the licensee shall be undertaken through competitive bidding. Presently, there have been three modes of tariff-based competitive bidding:

(i) Tariff Based Competitive Bidding (TBCB) for utilisation of services/ capacity (in MW/MWh) with Renewable Energy to be arranged and supplied by purchaser considering Round Trip Efficiency. Its examples are (i) bidding for 500 MW/1000 MWh Standalone Battery Energy Systems called by Rajasthan Vidyut Uttpadan Nigam Limited (RVUNL). The discovered tariff was Rs. 2,21,000-2,24,000 per MW per month (vide RERC order dated 17/06/25 on petition no. RERC 2302/2025) and (ii) bidding for 1000MW/2000 MWh capacity with round trip efficiency of 85% called by RVUNL , which has been finalised at Fixed charges of Rs. 1,77,500-1,78,500 per MW per month.

(ii) TBCB for supply of Stored Energy (in MW/MWh) with RE purchase effected by BESS developer (BESSD). Example is bidding for Peak supply of 8000 MWh (2000 MW x 4 Hrs.) from ISTS connected RE Projects called by SECI (SECI-FDRE-VI). Tariff discovered was Rs. 8.5 per kWh.

(iii) TBCB for the supply of RE power, with a part of it supplied through BESS by BESSD. Its example is 2000 MW ISTS-connected Solar PV Power Projects with 1000 MW/4000 MWh Energy Storage Systems (ESS) by SECI (under SECI-ISTS-XVII). Tariff discovered was Rs.3.52-3.53 per kWh.

All three modes discovered through competitive bidding are only a part of Tariff to Discom in respect of modes (ii) and (iii), except for bids called by Discom, in addition to the tariff discovered as energy charges,

trading charges are payable. However, in the case of mode (i), which is also specified at Regulation 12.5, the tariff determined by competitive bidding is only the fixed charge for providing the service. In addition to it, energy charges will be involved as RE for BESS has to be supplied by the Distribution Licensee, and the Distribution Licensee is to get back stored Energy x round-trip efficiency. Energy charges will be the major component of the cost to the Discom, and the Commission has to decide whether the cost of RE supplied for storage should be considered separately or while considering ARR. This regulation or relevant Tariff Regulations do not provide for an enabling provision for these as required under Section 61 of the Electricity Act, 2003. The Commission may consider providing them.

42.2 Regulation 9.1 of the draft requires the licensee to procure BESS capacity and services through tariff-based competitive bidding. However, the draft does not explain how charging costs will be treated across different use cases or how they relate to the tariff determined through bidding. An operation can involve multiple uses, such as peak shaving, congestion relief, arbitrage, and ancillary services. The charging costs vary depending on the application and the agreement between the licensee and the BESS developer. The draft also does not provide a framework for a contractual structure. In the absence of a defined model, arrangements could emerge under which the licensee funds the charging of BESS while the developer retains the right to market stored energy when the licensee is not using the asset. This exposes the licensee to clear financial asymmetry. If market prices are lower than the licensee's cost of charging, the licensee records a loss. If market prices are higher, the developer may retain the upside unless explicitly required to share it. Such asymmetry amounts to transferring market risk to consumers without oversight by the commission. To avoid these regulations must establish two baseline principles:

a. The licensee should recover the cost it incurred for charging BESS.

b. Any market revenue earned for energy or ancillary service sales that derive from licensee-funded charging must be allocated in a manner that protects tariff neutrality and prevents the developer from monetizing energy paid for by consumers.

Concerns of this nature arise when charging cost responsibility, minimum sale value conditions, and revenue allocation rules are not specified in the parent regulations or in any accompanying framework. The absence of these elements creates uncertainty about how charging costs will be compensated across different operational modes and whether the resulting agreement will remain cost-reflective. The Commission should, therefore, define the allocation responsibilities and cost-setting mechanism and clarify the regulatory treatment of charging costs and any market waste revenue so that cost recovery discipline and tariff neutrality are preserved. The Commission may also indicate that supporting procedures, frameworks, and model documents will be issued subsequently to operationalize these principles.

42.3 In view of the evolving role of Battery Energy Storage Systems (BESS) in grid stability, renewable energy integration, and ancillary services, it is imperative to ensure a transparent, equitable, and economically prudent framework for tariff determination and cost recovery. While Clause 9.1 of the Draft Regulations rightly mandates that Licensees procure BESS capacity and services through tariff-based competitive bidding, further clarity is required to delineate the cost-recovery mechanism for Licensee-owned BESS assets and safeguard consumer interests. Accordingly, the following provisions are proposed for inclusion:

(1) Cost Recovery for Licensee-Owned assets like Sub-station land and Distribution / Transmission infrastructure:

It is proposed that cost recovery, for Licensee-Owned assets such as substation land and distribution or transmission infrastructure, be carried out either through a competitive bidding process or with prior approval from the Commission, based on prudent investment norms. This may be applicable in case of assets are owned by another party and are being used for the development of a BESS project. This approach ensures regulatory oversight of capital and operational expenditures incurred by licensees, thereby protecting consumers from any undue financial burden.

(2) Adoption of Tariff from Competitive Bidding:

- **BESS plant Capacity of 1 MW or more:** It is further proposed that for tariff determination for BESS plants with a capacity of more than 1 MW, the Commission shall adopt the tariff discovered through competitive bidding, subject to reasonableness checks and technology-specific parameters prescribed by the Commission. This promotes market efficiency, encourages participation from diverse stakeholders, and ensures least-cost procurement of storage services.
- **BESS plant capacity less than 1 MW Plant and procurement from third-party aggregator:** For procurement of BESS services from third-party service providers like BESS aggregators having capacity less than 1 MW (Other than consumer covered under GNM, VNM, NMS), the Commission may prescribe the maximum levelized or Ceiling tariff, duly considering prudent investment norms. This approach facilitates licensee access to stored energy during peak hours at predetermined tariffs, resulting in lower power procurement costs, especially compared to short-term market purchases.

These additions are essential to ensure regulatory consistency, promote investor confidence, and protect consumer interests while enabling the deployment of BESS in a cost-effective and sustainable manner.

42.4 Regulation 9.2 allows battery energy storage systems owned or operated by consumers to be permitted to participate in energy arbitrage. The settlement mechanism is left to a separate Commission order. In this regard, it is submitted that the settlement for such cases should be linked to the ToD (Time of Day) period and the Ancillary Services Market rate,i.e., if an ESS provider supplies electricity to the Distribution Utility during a period when the ToD surcharge is maximum, the power shall be settled at rates discovered in the Day Ahead Market in the Power Exchange.

42.5 At Regulation 9.2 in the first paragraph, the draft regulation permits consumers to participate in energy arbitrage by purchasing electricity from the grid during off-peak hours and selling it back during peak hours. However, it does not specify what the off-peak and peak time blocks are? The applicable tariff mechanism, TOD-based dynamic market-linked or fixed incentive, and the method of settlement, net billing, gross metering or separate trading. It is requested that RERC to define these parameters explicitly.

42.6 In furtherance of para 3 of regulation 9.2, there is no limit on solar panels on the same premises. This power can be used for Energy Storage and only permitted PV power to the grid be allowed. This is very much feasible in present-day PCS/Inverters.

42.7 The Commission should define the allocation responsibilities and the cost-setting mechanism and clarify the regulatory treatment of charging costs and any market-based revenues, so that cost-recovery discipline and tariff neutrality are preserved. The Commission may also indicate that supporting procedures, frameworks, and model

documents will be issued subsequently to operationalize these principles.

42.8 It is proposed that incentivized tariff should not be less than the exchange rates during that period.

42.9 DT level BESS may be offered a competitive fixed tariff to avoid scheduling and settlement issues raised by SLDC.

42.10 The tariff for battery-supplied power should be higher than the average procurement rate. Solar-generated, battery-supplied electricity should be exempted from electricity duty and other charges/surcharges.

42.11 Regulation 9.4 provides that obligated entities or consumers shall be eligible to claim the RPO/RCO benefit for consumption upon discharge of BESS. RPO, being the purchase obligation, is to be determined on the recorded energy supply at the point of supply by BESS, less applicable transmission and wheeling losses. For the consumer, it is part of his consumption, but for the distribution licensee, it is not consumption. For the distribution licensee, the same transmission and wheeling losses will apply to BESS purchases, RE purchases, conventional power generation, and purchases. So, RPO/ESO can be determined based on consumption, which may either be appropriately defined/elaborated, or it is suggested that it may be replaced by "supply of energy."

42.12 This clarification is essential for generating companies to monetize their renewable energy through storage without losing the green attribute. The Energy Storage Obligation trajectory set by MOP (1% in FY 2023-24 increasing to 4% by FY 2029-30) creates additional compliance value that generators should be able to capture. Accordingly, Regulation 9.4 may be amended as follows:

"9.4. Renewable energy procured and used for charging BESS shall retain its renewable character upon discharge and consumption. Accordingly, obligated entities or consumers shall be eligible to claim the RPO/RCO benefit for such consumption.
9.4.1 Generating companies selling power through BESS from renewable sources shall be entitled to issue Renewable Energy Certificates for the discharged energy, accounting for round-trip efficiency losses.

9.4.2 For co-located RE-BESS systems, the total RE generation (solar/wind) plus discharged energy from BESS (net of charging losses) shall count towards the generator's contracted capacity obligations, subject to metering protocols specified by SLDC.

42.13 The current regulation is silent on how generating companies can recover their BESS investment costs. CERC has acknowledged that tariff determination for BESS should be under regulatory purview with clear capital expenditure recovery mechanisms. Without a defined tariff structure, generating companies face significant investment uncertainty, particularly given that BESS capex remains substantial and requires cost-plus tariffs where the weighted average cost of capital exceeds. Accordingly, a new Regulation 9.5 may be added to the draft Regulations as follows:

"For BESS co-located with or owned by generating companies, the Commission shall notify a separate tariff determination framework within six months of the notification of these Regulations, which shall include:
(a) Capital cost recovery mechanism through fixed capacity charges;
(b) Variable energy charges linked to actual energy throughput;
(c) Provisions for recovery of auxiliary consumption and round-trip efficiency losses;
(d) Indexation formula for operating and maintenance costs;
(e) Performance-linked incentives for providing ancillary services. "

42.14 BESS technology is evolving rapidly, and regulatory frameworks are being updated frequently. The Ministry of Power has issued multiple amendments to the Electricity Rules 2005, including the recent September 2025 amendments regarding ESS ownership. Generating companies require protection against the adverse financial impacts arising from regulatory changes during the project lifecycle. Accordingly, a new Regulation 9.6 may be added to the draft Regulations as follows:

"Change in Law: Any change in any applicable law, including but not limited to taxes, duties, levies, statutory charges, or technical standards notified by CEA/MNRE/GoI after the date of signing of any commercial agreement or power purchase agreement shall entitle the generating company or BESS developer to claim compensation for the resulting financial impact from the procuring entity, as per the methodology to be specified by the Commission. "

Commission's Analysis/decision:

43. Suggestion has been received that tariff determined through competitive bidding often discovers only part of tariff and treatment of charging energy and trading charges needs enabling provisions. In addition, to address the local content requirement mandate from the Central/State Government the provisions of regulation 9.1 have been appropriately amended as follows:

"9.1 All procurement of BESS capacity and/or services by the Licensees shall be undertaken through tariff-based competitive bidding in accordance with the guidelines and notifications issued by Central Govt/ MoP/MNRE from time to time.

Provided that the bid documents shall explicitly specify the commercial and operational responsibility for charging energy, losses/round-trip efficiency, other battery parameters, metering, scheduling, settlement, and any trading/intermediation arrangement.

Provided further that in case of any deviations from the bidding guidelines and notifications issued as above the approval of the Commission shall be required for such deviations.

Provided also that any expenses requiring pass through in the ARR and provided in the bid documents shall be subject to the Tariff adoption/Approval of the Commission.

Provided also that the Commission may allow alternative procurement methods for pilot or demonstration projects and small scale or distributed projects."

44. As regards the suggestion to delineate the cost recovery mechanism for licensee-owned BESS assets and safeguarding consumer interests, Commission considers appropriate that the following provisos may be added to the sub-regulations 9.1:

45. As regards the suggestions, consumer arbitrage and to link settlement with ToD period and/or market discovered rates (Power Exchange Day Ahead Market, etc.,). , Commission consider it appropriate that third proviso to regulation 9.2 of the Draft Regulations shall be substituted with the following:

"Provided also that consumers/ Prosumers shall be allowed to operate the BESS in such a manner that the energy stored in the system, installed behind the consumer's meter, may be utilized for self-consumption or supplied to the Distribution Licensee during

peak hours for which Commission may specify incentivized tariff and other necessary conditions through a separate order."

46. While the settlement mechanism for consumer energy arbitrage will be specified through a separate order as stated in regulation 9.2, the Commission considers it appropriate to incorporate the following new fourth proviso after third proviso to regulation 9.2:

"Provided also that while specifying the settlement mechanism and incentivised tariff under this sub-regulation, the Commission shall have due regard to the following:

(a) Prevailing Time-of-Day (ToD)/ Time- of –Use(ToU) tariff framework of the Distribution Licensee or any such other reference Commission deem fit.

(b) Principle that energy stored from renewable sources shall retain its renewable character, consistent with regulation 9.4.

(c) Principle of avoidance of double taxation on stored energy, in consonance with National Framework for promoting Energy Storage Systems issued by the Ministry of Power.

47. Considering that pay- for-performance rewards accuracy, speed and availability of response are critical for BESS and fast responding resources, regulation 9.3 of the draft has been appropriately amended as follows:

"9.3.For procurement of ancillary services, the Commission may approve a single-part or multipart tariff structure, including fixed capacity charges, variable energy charges, and performance-linked payments. The Commission may also consider pay-for-performance mechanisms and/or cap-and-floor tariff frameworks to incentivize reliable and efficient provision of ancillary services."

48. As regards the suggestion received regarding the claim of RPO/RCO benefit for consumption upon discharge of BESS, for clarity, the regulation 9.4 shall be substituted with the following:

"9.4 Renewable energy procured and used for charging BESS shall retain its renewable character upon discharge. Accordingly, obligated entities/ consumers shall be eligible to claim RPO/RCO benefit for supply/consumption of such discharged energy."

49. As regards the suggestion of allowing issuance of REC for discharged energy and counting RE generation plus discharged energy towards contracted obligations (net of losses), it is stated that REC issuance is governed by the applicable CERC REC Regulations and associated

accreditation/registration rules, and this can also cause conflict. Therefore, the request in this regard is not acceptable.

50. As regards the suggestion of the cost recovery/tariff framework for generating company owned or co-located BESS, for ancillary services procurement, the draft already allows single-part or multi-part tariff, including capacity charge, variable energy charge, and performance incentives, these Regulations already provide for the same and no change is required in this regard here.

51. As regards the suggestion of incorporating a provision for a change-in-law, the same has been dealt with later in this order.

Regulation 10: Technical Standards:

Commission's Proposal:

"10. Technical Standards

BESS installations shall conform to technical standards specified by the Central Electricity Authority (CEA), MNRE, and other relevant authorities. BESS providers shall submit real-time data to SLDC as prescribed."

Stakeholders' Comments/Suggestions:

52. The stakeholders have mainly submitted as follows:

52.1 The Definition of State Nodal Agency may be added as follows:

52.2 BESS warranties typically specify end-of-life capacity guarantees ranging from 60-80% of original capacity after 10-15 years of operation. SECI's standard service level agreements already specify detailed degradation curves, capacity test protocols, and liquidated damages frameworks. Without explicit regulatory guidance, generating companies face asymmetric risk allocation in procurement contracts. Accordingly, a new Regulation 10.3 may be added to the draft Regulations as follows:

"Performance Standards and Degradation Management:

(a) The capacity degradation curve shall be mutually agreed between the generator/BESS developer and the procuring entity at the time of contract execution;
(b) Capacity guarantees shall be measured annually through mutually witnessed capacity test cycles;
(c) The procurement contracts shall specify reasonable end-of-life capacity guarantees ranging between 60-80% of original capacity over the contract period;
(d) Augmentation or capacity restoration obligations shall be clearly defined with reasonable timelines of not less than 90 days;
(e) Liquidated damages for capacity shortfall shall be capped at reasonable levels as specified by the Commission. "

Commission's Analysis/decision:

53. The suggestion has been dealt with later in this order.

Regulation 11: Safety, Cyber security, and Environmental Norms:

Commission's Proposal:

11. Safety, Cybersecurity, and Environmental Norms

11.1. BESS systems shall comply with applicable regulations, standards and codes issued by the Central Electricity Authority (CEA) regarding safety.
11.2. Cybersecurity and communication protocols shall adhere to the guidelines of the Ministry of Electronics and Information Technology (MeitY), the Central Electricity Authority (CEA), and the Ministry of Power (MOP).
11.3. Environmental management and end-of-life disposal of batteries shall be in accordance with the guidelines/regulations of the Government of India/GoR. The responsibility of disposal shall lie with the owner of the BESS.

Stakeholders' Comments/Suggestions:

54. The stakeholders have mainly submitted as follows:

54.1 The provision of regulation 11.3 does not align with the Battery Waste Management Rules, 2020 (BWM Rules) notified under the Environment Protection Act, 1986. These rules establish an Extended Producer Responsibility (EPR) framework for all categories of batteries, including stationary. Under Rule 4 of the BWM Rules, the legal obligation for the collection, recycling, and environmentally sound disposal of end-of-life batteries lies with the producer (the manufacturer or importer placing batteries on the market), not with the consumer or end-user. The owner of a BESS is only required to hand over waste batteries to an authorized entity, and they are not responsible for disposal or compliance with the

EPR targets. It is requested that the Commission revise Regulation 11.3 to align with the Battery Waste Management Rules, 2022, by clarifying that disposal obligations rest with the producer under the EPR framework, while the owner's responsibility is limited to handing over the waste batteries to authorized channels.

54.2 It is requested that more stringent provisions should be incorporated for the disposal of BESS.

Commission's Analysis/decision:

55. BWMR 2022 is the central legal framework governing battery life cycle management in India. Accordingly, regulations11.3 has been aligned with BWMR to ensure legal consistency avoiding regulatory conflict enforcing producer responsibility.

56. After considering the suggestions, regulation 11.3 regarding Battery Waste Management shall be substituted with the following:

"11.3 "Decommissioning, recycling and disposal of batteries used in BESS shall be carried out in accordance with the Battery Waste Management Rules, 2022, as amended from time to time, including provisions relating to Extended Producer Responsibility (EPR), collection targets, recycling efficiency, and reporting obligations."

Regulation 12: Role of Licensees :

Commission's Proposal:

12. Role of Licensees

12.1. Distribution Licensees shall publish on their websites potential sites at the 11 kV voltage level in their 33/11 kV substations for establishing BESS of the required capacities based on feeder-level solarization.
12.2. Distribution licensees shall register AS providers and Aggregators in accordance with these Regulations.
12.3. Expenditure on BESS shall be recoverable through the Annual Revenue Requirement (ARR) under specified heads for power purchase or capital expenditure, as applicable, subject to Commission approval, for which the Distribution Licensee shall file suitable proposals.
12.4. The Transmission Licensee shall include BESS in its planning and investment plan and file proposals for Commission approval. Approved expenditure shall be recoverable through the Transmission Business ARR.
12.5. Except for the Battery Energy Storage Systems (BESS) installed and owned by the licensees, the procurement of BESS capacity or services shall be undertaken only through a transparent competitive bidding process conducted in accordance with

the guidelines issued by the Government of India, indicating the applicable case as specified in such guidelines.
12.6. The Transmission Licensee shall prepare a standard agreement format for procuring ancillary services and obtain the Commission's approval before entering into agreements.

Stakeholders' Comments/Suggestions:

57. The stakeholders have mainly submitted as follows:

57.1 At regulation 12.1, details of the likely benefit that shall accrue to the developer should also be mentioned on websites.

57.2 At regulation 12.3, the impact on tariff should be specified, and regulations to ensure the installation of BESS should reduce the existing tariff.

57.3 Regulation 12.4 provides that the Transmission Licensee shall include BESS in its planning and investment plan, and approved expenditure shall be recoverable through Transmission Business ARR.BESS installed and operated by a Transmission Licensee can be:

(i) At its substation having connectivity to the cluster of RE power plants so as to store energy during RE generation and discharge it during the rest of the hours, so that the load on transmission lines is considerably reduced.

(ii) At any point on the grid for frequency regulation that is charging during a high frequency period and discharging during a low frequency period.

The regulations provide for considering their investment in the ARR of the Transmission License. The Commission appears to be considering these under Mode (i) mentioned above, so that trading is not involved. Transmission Licensees selected through TBCB for Transmission Systems do not file ARR, so this provision will not apply to them. Thus, this provision would apply only to RVPN, as all fixed charges on investment will be considered in ARR (and

hence, transmission charges), so there would be no fixed charges payable for their BESS services. The Commission may elaborate in the regulation that investment of RVPN for BESS will be decided under Section 62 of the Electricity Act,2003, and renewable energy for their charging will be supplied by the Distribution Licensee. The entire energy generated by the BESS will be availed by the distribution licensee, with no profit or loss to RVPN, so that the BESS operation does not involve trading. Thus, there will be no tariff-based competitive bidding for BESS installation and operation by RVPN for (i) and (ii) above. To promote this mode and to compensate Discoms for losses of RE in storage, a rebate on transmission charges on energy supplied from BESS at (1/(Normative losses)-1) x average rate of RE purchase, e.g., (1/0.15)-1)x 2.50=Rs 0.44 per kWh, may be considered. These charges may be considered as operational expenses of BESS in the ARR of RVPN.

57.4 At Regulation 12.4:

(i) it is mentioned that the approved expenditure on BESS shall be recoverable through Transmission Business ARR, but the mechanism to recover operational expenses of BESS needs to be specified.

(ii) Further, the regulation does not speak about the mechanism to recover expenditure on BESS, by a licensee who does not file an ARR.

(iii) The charging/discharging charges or other charges for BESS may be defined through separate RERC orders.

(iv) SLDC should be exempted from monitoring and scheduling of BESS connected and distribution licensees' network.

57.5 At regulation 12.6, procuring ancillary services by transmission licensees should ensure a reduction in transmission tariffs.

57.6 Clear timelines with deemed approval provisions may be incorporated to protect generating companies from procedural delays. CEA has forecasted that India needs 74 GW/411 GWh of combined battery and pumped hydro storage by 2031-2032, requiring streamlined approval processes to meet deployment targets. Accordingly, a new Regulation 12.7 may be added to the draft Regulations as follows:

12.7. Procedural Timelines and Deemed Approval:
(a) All applications for registration as BESS or AS provider shall be processed by the SLDC within thirty days of receipt of complete application;
(b) In case of failure to process applications within the stipulated timeline, the application shall be deemed approved subject to subsequent verification;
(c) Connectivity applications for co-located BESS shall be processed within sixty days;
(d) Any disputes regarding registration or connectivity shall be escalated to the State Power Committee within seven days of filing of grievance. "

Commission's Analysis/decision:

58. It is suggested by one of the stakeholders submitted that ARR recovery applies mainly to RVPN, and TBCB transmission licensees don't file ARR and requested to clarify non-trading operation, charging energy arrangement, and suggested compensation. It is clarified that Regulation 12.4 applies to a regulated cost-of-service transmission licensee (RVPN/STU) adequately addresses the concern. Therefore, no change is required.

59. In Commission's view limiting site identification only to 33/11 kV substations overlooks transmission level congestion and renewable evacuation challenges. According to the Commission, publishing a similar list for EHV substations will improve transparency, reduce project development risk and will support faster development of both distribution and transmission connected BESS. Accordingly, regulation 12.1 of the draft Regulations will be substituted with the followings:

"*12.1 STU in consultation with Distribution Licensees shall publish on their websites potential sites at the 11 kV voltage level 33/11 kV substations and at Extra High Voltage (EHV) substations for establishing BESS of the required capacities based on feeder-level and system-level renewable integration and network requirements.*

60. As regards the suggestion of specifying clear timelines with deemed approval, the following new regulation 13.8 may be added:

"13.8 Timelines for registration/empanelment:
(a) SLDC shall dispose of complete applications for registration/empanelment as an Aggregator of AS provider (where applicable) within thirty days.
(b) Where an application cannot be disposed of within the timeline, SLDC shall issue a reasoned deficiency/extension notice and dispose of the application within an additional thirty days.
(c) Connectivity processing timelines shall be as per the applicable SLDC procedure notified under these Regulations.
(d) Any grievance regarding delay or denial of registration or empanelment under this regulation, if remains unresolved for fifteen days, may be escalated by the aggrieved party to the State Power Committee under the dispute Resolution mechanism specified in regulation 17.2 of these Regulations.

61. The regulation 14 of the Draft Regulations has been renumbered as regulations 13 with its sub-regulations also renumbered accordingly. Similarly, regulation 15 and onwards Draft Regulations have be renumbered and have been dealt with accordingly in the subsequent paras.

Regulation 13: Role of Nodal Agency (SLDC):

(Earlier Regulation 14)

Commission's Proposal:

14. Role of Nodal Agency (SLDC)
14.1. SLDC shall verify governor settings of thermal generators and assess the requirement of Primary, Secondary, and Tertiary Reserve Ancillary Services (PRAS, SRAS, TRAS) from BESS. The report shall be published and updated annually.
14.2. The SLDC shall specify eligibility criteria for BESS resources to provide ancillary services, based on technical criteria and operational performance, and publish on its website within three months from the date of notification of this Regulation.
14.3. The SLDC, in consultation with STU and licensees, shall prepare and publish on its website the eligibility criteria for the registration of AS providers within three months from the date of notification of this Regulation.
14.4. The SLDC shall prepare a procedure for Scheduling, Metering, Accounting, Settlement, and Commercial mechanisms for the operationalization of ancillary services through BESS, for approval by the Commission, within six months from the date of publication of this Regulation.
14.5. The SLDC shall monitor the performance of BESS, including State of Charge (SoC), Round-Trip Efficiency, and availability.

Stakeholders' Comments/Suggestions:

62. The stakeholders have mainly submitted as follows:

62.1 Regulation 14 sets out several responsibilities for SLDC, including annual assessment of reserve requirements (Reg 14.1) publishing eligibility criteria of BESS participation within three months (Reg.14.2 and 14.3), developing procedures for scheduling, metering, accounting, and settlement within six months (Reg.14.4), and ongoing performance monitoring (Reg.14.5). Although these timelines provide a broad implementation structure, the regulation does not define the technical or operational basis on which the SLDC is expected to perform this task. For instance, Regulation 14.1 requires SLDC to verify governor settings and assess PRAS, SRAS, and TRAS requirements from BESS. However, the regulation does not specify the standards or data protocol needed for such an evaluation. Regulations 14.2 and 14.3 require SLDC to publish eligibility criteria for BESS and ancillary service providers, but they do not specify the performance thresholds, response time requirements, or metering specifications that should form the basis of these criteria. Similarly, Regulation 14.4 mandates the development of scheduling and settlement procedures without outlining the principles that must govern charging, energy discharge, round-trip losses, or deviation handling. Where the Commission delegates operational procedures to SLDC without defining the standard data requirements or decision-making criteria that constrain the discretion, the delegation risk becomes unguided. Such unguided discretion can result in inconsistency across entities, procedural uncertainty, and an uneven application of obligations that affect both system security and tariff outcomes. It is requested that the Commission should define the key operational principles that SLDC must incorporate when drafting eligibility norms, reserve assessment methodologies, and scheduling and settlement procedures.

62.2 It is requested that small BESSs should be exempted from the role of the Nodal Agency (SLDC).

62.3 Regulation must ensure an independent agency for SLDC instead of it being an arm of one of the utilities, due to frequent legal cases concerning scheduling, accounting and settlements.

62.4 CERC has acknowledged the need for separate deviation charges for BESS through DSM Regulation amendments. Grid-India has highlighted operational coordination issues related to co-located solar-plus-BESS projects, including scheduling complexities and metering challenges. CERC's approved procedure for the Fatehgarh BESS project established a precedent for single-point metering due to technical limitations, with segment-wise monitoring through SCADA. Accordingly, Regulation 14.4 may be amended and added new sub-regulations to the draft Regulations as under:

"14.4. The SLDC, in consultation with generating companies, BESS developers, licensees, and other stakeholders, shall prepare a procedure for Scheduling, Metering, Accounting, Settlement, and Commercial mechanisms for the operationalization of ancillary services through BESS, for approval by the
Commission, within six months from the date of publication of this Regulation.
14.4.1. For co-located BESS with existing generating stations, the procedure shall allow single-point metering at the interconnection point, with segment-wise internal monitoring for the state of charge, performance, and computation of incentives.
14.42. Deviation Settlement Mechanism for BESS shall be specified separately by the Commission, considering the unique operational characteristics of storage systems including rapid response times and bidirectional energy flow.
14.4.3. The charging energy for BESS shall be accounted separately from the main generating station's schedule to avoid adverse deviation settlement impacts on the generator. "

Commission's Analysis/decision:

63. As regards the suggestion that the regulation should specify the technical/operational basis for SLDC tasks—performance thresholds, etc., it is stated that technical and operational modalities regarding BESS are in the evolving stage and in our view it is better to leave these to the independent body SLDC, which in consultation with STU, should provide the same in their procedure. Therefore, in our view no change is required

in this regard and regulation 13.4(renumbered 14.4)shall be substituted as follows :

"13.4. The SLDC shall prepare a procedure for Scheduling, Metering, Accounting, Settlement, and Commercial mechanisms for the operationalization of ancillary services through BESS, within six months from the date of publication of these Regulation."

64. As regards the suggestion of exempting small BESS from SLDC nodal role, in our view SLDC involvement should be limited to resources providing ancillary services or requiring system-level scheduling. Small BTM systems settled under DISCOM's retail framework should not be pushed into SLDC processes. The Commission clarifies that DERA registration under regulation 12.2 pertains to distribution level aggregation services within area of supply of the Distribution Licensees, while Ancillary Services (AS) provider registration under regulation 13.6 pertains to system level ancillary services requiring SLDC coordination. Where an entity performs both the above roles, dual registration shall be required through SLDC and Distribution Licensees to streamline the process. Accordingly, the following new sub-regulations 13.6& 13.7(renumbered 14.6 & 14.7) shall be substituted:

" 13.6. SLDC shall register Ancillary Services (AS) providers in accordance with these Regulations.
Explanation: Registration as an Ancillary Services (AS) provider under this sub-regulation is distinct from and in addition to registration as a Distributed Energy Resource Aggregator (DERA) under regulation 12.2, where an entity is registered as a DERA and also intends to participate in ancillary services, such entity shall additionally register as on AS provider with SLDC under this sub-regulation.

13.7. The SLDC shall prepare a standard agreement format for procuring ancillary services and obtain the Commission's approval before entering into agreements."

Regulation 14: Role of GENCOS/IPPs/CPPs/BESS Developers:

Commission's Proposal:

15. Role of GENCOS/IPPs/CPPs/BESS Developers

GENCOS, IPPs, CPPs, and BESS Developers may establish BESS at any point in the system, after obtaining due approvals, and participate in the ancillary services market and may register with the relevant licensee to provide such services.

Stakeholders' Comments/Suggestions:

65. The stakeholders have mainly submitted as follows:

65.1 The provisions of Clause 6.4 and 6.7 of the Rajasthan Integrated Clean Energy Policy 2024 clearly establish the operational and commercial framework for BESS deployment and utilization. Therefore, the same needs to be included in the proposed draft regulation. In case BESS is developed and operated by generating companies, independent power producers (IPPs), or captive/group captive power plants (CPPs), then in such cases, entities shall need to have the flexibility to either:

- supply power from their BESS to their respective captive or group captive consumers or
- participate in the ancillary services market as per operational and commercial requirements.

Accordingly, Regulation 15 may be amended as follows:

"***15. Role of GENCOS/IPPs/CPPs/BESS Developers***

GENCOS, IPPs, CPPs, and BESS Developers may establish BESS at any point in the system, after obtaining due approvals, ***and choose either to supply to their consumer or Group Captive/captive based on their demand or choose to*** *participate in the ancillary services market and may register with the relevant licensee to provide such services."*

65.2 Grid-India has recommended that both existing and new plants (solar + BESS) should be provided with 24x7 grid connectivity without limiting their physical connection to solar or non-solar hours only. SRPC has noted that installing BESS at existing thermal power stations can enhance flexibility and reliability while supporting grid stability. This aligns with NTPC's 5 GWh allocation under VGF Scheme Tranche 2 to optimize existing thermal generation and transmission infrastructure. Accordingly, the Regulation 15 may be amended as follows:

"14. Role of GENCOS/1PPs/CPPs/BESS Developers

GENCOS, [PPS, CPPs, and BESS Developers may establish BESS at any point in the system, after obtaining due approvals, and participate in the ancillary services market and may register with the relevant licensee to provide such services.
For existing generating stations seeking to add co-located BESS:
(a) The existing generator shall retain 24x7 grid connectivity without limiting physical connectivity to solar or non-solar hours only;
(b) The combined injection at any time may be limited to the respective connectivity quantum during solar and non-solar hours;
(c) Both the existing generator and the new BESS shall act as a single plant from grid operations perspective through a master controller.
The STU shall process connectivity applications for BESS co-located with existing generating stations on priority within sixty days from the date of complete application. Existing thermal generating stations installing BESS at their premises for storing excess energy during solar hours shall be entitled to priority grid access during peak demand periods. "

Commission's Analysis/decision:

66. As regards the suggestion that a generator/IPP/CPP/BESS developer can either supply its consumers/group captive/captive based on demand, or participate in ancillary services, the modern storage economics typically require multi-use (self-supply, OA/market, and/or ancillary services).In this regard it is stated that such entities may participate in the open market subject to the appropriate rules/Regulations. However, for the sake of clarity renumbered regulation 14 shall be substituted with the following:

"14. Role of Generating Companies/IPPs/CPPs/BESS Developers:

Generating companies, IPPs, CPPs, and BESS Developers may establish BESS at any point in the system, after obtaining due approvals. Such entities may participate in the ancillary services market and may register with the SLDC to provide such services through market mechanisms."

67. As regards the suggestion of 24x7 physical connectivity and priority grid access for existing stations adding BESS, the priority grid access during peak as a regulatory entitlement may conflict with non-discriminatory access principles and system security. Therefore, no change is required in the draft Regulations on this account.

Regulation 15: Consumers/Prosumers:

(Renumbered from Regulation 16)

Commission's Proposal:

16. Consumers/Prosumers

16.1 All consumers shall be permitted to establish behind-the-meter Battery Energy Storage Systems (BESS) up to their contract demand, with or without solar power plants.

Provided that such consumers shall be required to register their BESS installations with the Distribution Licensees through the online portal developed and maintained by the Distribution Licensees Nodal Agency, however, no prior permission or formal connection agreement with the Distribution Licensee shall be required for installation of the BESS.

Provided also that such systems shall comply with the technical standards and safety requirements specified by the Central Electricity Authority (CEA).

16.2 In case the Battery Energy Storage System (BESS) is installed in hybrid mode along with a solar power plant that is either already installed or proposed to be installed under the Net Metering, Net Billing, Group Net Metering, or Virtual Net Metering framework, the entire hybrid system shall be governed by the respective provisions applicable to the framework under which the solar plant is registered, i.e., Net Metering, Net Billing, Group Net Metering, or Virtual Net Metering, as specified under the Rajasthan Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy Generating Systems) Regulations, 2021, as amended from time to time.

Provided that in such cases, the energy injected into the Distribution Licensee's network during non-solar peak hours shall be payable to the consumer at the incentivized tariff, as may be specified by the Commission through a separate order issued either suo motu or upon an application filed before it.

16.3 Consumers or prosumers having eligible behind-the-meter BESS shall be permitted to participate in the demand response and such similar programmes, either directly or through an Aggregator, subject to compliance with applicable regulations. The Discoms shall also develop programmes for Vehicle to Grid/Grid to Vehicle concept through smart chargers.

Provided that participation in such services shall require the installation of a smart meter and communication infrastructure capable of real-time data acquisition and transmission, as may be specified by the Distribution Licensee.

Stakeholders' Comments/Suggestions:

68. The stakeholders have mainly submitted as follows:

68.1 Regulation 16.1 requires a consumer to register BESS installation with the Discom. Presently, batteries and inverters are installed at non-domestic,

mixed-load consumers and at substations to meet various essential loads during power failures/fluctuations. These are for uninterrupted power supply to computer/server/CCTV surveillance communications, to protective relays, to emergency lighting in switchyards and control rooms, to the continuation of operation of forced oil pumps of transformers for short duration, and to a few lights and fans at consumers' premises. For these, the battery is connected with the DISCOM supply for charging, and the inverter supplies power to the load, but this does not back-feed power to the DISCOM. Regulation may clearly state that such BESS at consumer or substation premises will not require registration.

68.2 In case of a small BESS with or without a hybrid arrangement, it will be paid as per the FY tariff decided by the Commission based on the smart meter installed on the outgoing side of the small BESS. Without proper, even slightly lucrative compensation, a small BESS system may not materialize, and all efforts may remain on paper.

68.3 At regulation 16.1 It should be made mandatory for all C&I consumers with connections greater than 25 kW to set up BESS to help improve grid conditions and availability during peak hours.

68.4 Consumer should be allowed to install the behind-the-meter BESS with or without solar power plants based on the Technical Feasibility of the System. This will encourage greater adoption of BESS, enabling consumers to store surplus daytime energy and utilize it during peak demand hours, thereby improving energy efficiency and grid stability.

68.5 In order to align the technical and operational feasibility of Group Net Metering (GNM) with the evolving role of distributed energy resources, particularly hybrid systems integrating solar and BESS. Under the existing regulatory framework, GNM enables multiple prosumers to aggregate their energy generation and consumption across different service connections. However, the absence of clarity on the permissible

capacity of hybrid systems under GNM may lead to interpretational ambiguities and operational constraints. In view of the above following additional provision is proposed:

> *"In case the consumer is availing Group Net Metering (GNM), the permissible capacity of the solar plant with integrated Battery Energy Storage System (BESS) shall be allowed up to the cumulative Contract Demand of all participating Prosumers under the GNM arrangement."*

Commission's Analysis/decision:

69. Suggestion of consumer/substation batteries for backup and which do not back-feed to Discom, should not require registration. It is also suggested that all C&I consumer connections greater than 25 kW be required to install BESS to improve grid conditions and availability during peak hours. After considering these suggestions, in our view such considerations are related to visibility requirement of the grid and thus, ideally be part of part of the planning. It would, therefore, be appropriate that such minimum storage requirement may be specified through a separate order by the Commission.

70. As regards the suggestion of allowing the permissible capacity of solar plant with integrated BESS up to cumulative contract demand of participating prosumers availing GNM, according to us this suggestion is essentially an amendment/interpretation of Net Metering/GNM/VNM rules, not the part of the storage policy, therefore, doesn't pertain to these Regulations. Therefore, suggestion in this regard is not acceptable.

71. As regards the suggestion that injection from small BESS be allowed at predetermined time slots, only technical suitability is to be checked; it may be exempted from scheduling/planning/capacity declaration. In our view, if a device can export to the grid, some form of metering, accounting, and settlement must be in place. However, for small BTM exports, it can be settled through net billing/net metering rather than full SLDC scheduling. Further, SLDC scheduling may not be required for such

small resources unless they participate via an Aggregator or in AS. The following proviso to regulation 15.3 may be added:

"Provided further that Behind-the-meter BESS exports by such consumers, where permitted and settled under the applicable net billing/net metering/GNM/VNM/ToD/ ToU framework administered by the Distribution Licensee shall not require SLDC scheduling, however, if such BESS participates in the market or in ancillary services directly or through an Aggregator shall comply with the directions of Distribution Licensee & SLDC and also comply with SLDC's Scheduling requirement as provided under the SLDC procedure."

Regulation 16: Open Access to BESS:

Commission's Proposal:

17. Open Access to BESS

The RERC Green Energy Open Access Regulations, as amended from time to time, shall govern the open access and related charges. The Commissions based on a petition filed by the licensees , Generators or SLDC, may also issue a separate order for waiver or method of charging for BESS in case any such need arises.

Stakeholders' Comments/Suggestions:

72. The stakeholders have mainly submitted as follows:

72.1 Regulation 17 provides " Commission may also issue a separate order for waiver or method of charging for BESS in case any such need arises". The prima facie it would be open access charges, but this provision does not clearly indicate it. The Commission may appropriately modify this regulation.

72.2 In order to ensure regulatory certainty and investor confidence, requested that provisions and Incentives of Rajasthan Integrated Clean Energy Policy, 2024 & Rajasthan Investment Promotion Scheme 2024, be explicitly incorporated into the proposed BESS Regulations. This will provide statutory backing to the policy provisions and eliminate ambiguity for RE project developers/Consumers, and investors. Such inclusion is essential as it is in line with the proposed objectives of the draft BESS Regulations and is consistent with the legal doctrine of

harmonious construction, ensuring alignment between the aforesaid policy and this proposed Regulation.

72.3 The National Framework for Energy Storage Systems specifically recommends avoidance of double taxation, stating that electricity duty and cross subsidy surcharge may not be levied on input of power for ESS as they merely facilitate conversion of energy. This principle protects generating companies from unfair cost burdens that would erode BESS economics. Accordingly, the Regulations 17 may be amended as follows:

"17.1. The RERC Green Energy Open Access Regulations, as amended from time to time, shall govern the open access and related charges.
Following the principle of avoidance of double taxation, electricity duty and cross subsidy surcharge shall not be levied on input power for BESS during charging, as storage merely facilitates conversion of energy Such charges may only be levied on the final consumption of electricity.
For BESS owned by generating companies and used for time-shifting of their own generation, wheeling and banking charges shall be waived for the storage component.
The Commission, based on a petition filed by the licensees, Generators or SLDC, may also issue a separate order for waiver or method of charging for BESS in case any such need arises. "

Open Access to BESS shall be granted in accordance with, and the applicable Open Access charges shall be levied as per, the RERC Green Energy Open Access Regulations, as amended from time to time.

72.4 In order to ensure clarity, consistency, and equitable treatment of consumers utilizing Battery Energy Storage Systems (BESS) under open access, it is imperative that the draft regulation explicitly states that open access shall be granted and charges levied in accordance with the RERC Green Energy Open Access Regulations, as amended from time to time. The following change in Regulation 17 reinforces the principle of regulatory harmonization and avoids interpretational ambiguity regarding the applicability of open access provisions to BESS:

"***Open Access to BESS shall be granted in accordance with, and the applicable Open Access charges shall be levied as per, the RERC Green Energy Open Access Regulations, as amended from time to time***. *The Commissions based on a petition filed by the licensees, Generators or SLDC, may also issue a separate order for waiver or method of charging for BESS in case any such need arises."*

Commission's Analysis/decision:

73. Stakeholders have suggested providing clarity regarding the applicability of waiver charges under the Rajasthan Integrated Clean Energy Policy 2024 in case of open access using BESS. It is clarified that the same has already been incorporated under the RERC GEOA Regulations 2025 in line with Rajasthan Integrated Clean Energy Policy 2024. Further, while referring to the National Framework for Energy Storage systems, specifically the avoidance of double taxation, it has also been suggested not to levy the electricity duty and cross-subsidy surcharge on input power for ESS, as they merely facilitate the conversion of electricity. Regulation 17 (renumbered Regulation 16) shall be substituted with the following:

"***16. Open Access to BESS***
Open Access to BESS shall be granted in accordance with, and the applicable Open Access charges shall be levied as per, the RERC Green Energy Open Access Regulations, as amended from time to time."

Regulation 17: Dispute Resolution:

Commission's Proposal:

18. Dispute Resolution
18.1 Consumer-related disputes shall be dealt with as per the RERC (Consumer Grievance Redressal Forum, Electricity Ombudsman and Consumer Advocacy) Regulations, 2021.
18.2 All other disputes arising under this regulation shall be referred to the State Power Committee constituted under the State Grid Code which shall endeavor to resolve the grievance within 30 days and where State Power Committee is unable to resolve the grievance, it shall be referred to the Commission and Commission's decision in this regard shall be final and binding.

Stakeholders' Comments/Suggestions:

74. The stakeholders have mainly submitted as follows:

74.1 It is requested that Dispute Resolution may be made time-bound, as presently disputes are pending for long times at various levels.

74.2 Force majeure provisions have been subject to regulatory scrutiny, with CERC specifically addressing concerns that unilateral termination rights could transfer project risks from generators to procurers and ultimately consumers. A balanced approach is necessary to protect generating companies while ensuring consumer interests. Accordingly, a new Regulations 18.3 may be added as under:

"All commercial agreements for BESS procurement shall contain:
(a) Comprehensive force majeure definitions covering natural events, non natural events, and their exclusions in accordance with Ministry of Power guidelines;
(b) Relief provisions during force majeure events without penalty to either patty;
(c) Clear termination rights in prolonged force majeure scenarios exceeding twelve months;
(d) Provisions for equitable risk sharing between the generator and procurer. "

Commission's Analysis/decision:

75. The provision provided under the Draft Regulations for the Dispute Resolution is adequate and no change is required.

76. As regards the suggestion on Force Majeure the same has been dealt later in this order. Along with other suggestions mentioned earlier in this order regarding including change in law, performance testing and degradations provisions in the present regulations.

General Suggestions

77. One of the stakeholders submitted that asset-class and tariff-cap regulatory ambiguity has been identified as a significant restraint on BESS market growth, with an estimated negative 4.3% impact on CAGR forecasts. Generating companies require regulatory certainty to make long-term investment decisions, particularly given that BESS projects typically have 12-15 year operational lifespans. The levelized annual tariff benchmarks (such as INR 57.6 lakh/MW/year for the BRPL BESS project) provide reference points that need regulatory protection for which a new regulation be added. The Commission is of the view that a blanket investment protection provision that freezes tariff and commercial terms for the entire contract period and restricts future regulatory action is

neither necessary nor desirable in delegated legislation. Regulatory sanctity is already ensured through the sanctity of contracts, the established statutory framework under the Electricity Act 2003 and applicable regulations and orders. Further, limiting the prospective exercise of its statutory power, particularly in matters affecting consumer tariff, system security and market integrity, could lead to legal infirmity and operational rigidity. The risk allocation and investor safeguards have to be achieved through appropriate contractual provisions, procurement guidelines and case-specific orders as warranted. The same is also valid in respect of the other suggestions received for making provisions for change-in-law, force majeure, battery degradation, and performance guarantee framework. Further, Commission may also evolve its own framework considering the state specific requirement. Accordingly, the following provisos shall be added to the Regulation 8 of the Draft Regulations:

"Provided that all other aspects related to different agreements (such as award documents, commissioning, financial closure, transmission connectivity, payment of security mechanism, event of default and consequences of change in law, codes and standards for safety and grid connectivity) shall be in accordance with the guidelines issued by the Ministry of Power and amendments thereto issued from time to time.

Provided further that Commission may specify its own norms and standards from time to time, and the same shall be applicable."

78. The Commission takes note that several BESS related processes have already been initiated and orders passed by the Commission in respect thereof. In order to protect the sanctity of existing contractual arrangement and provide regulatory certainty to the on-going projects, the Commission considers it appropriate to incorporate a savings and transition provision in these Regulations to ensure that existing PPAs and procurement processes are not disturbed, projects already under construction are grandfathered and there is a smooth migration to the new regulatory framework. Accordingly, following new regulation 18

shall be inserted and subsequent regulations shall be renumbered accordingly:

"18. Savings and Transition:

18.1 Nothing in these Regulations shall affect the validity of any Power Purchase Agreement, Energy Storage Service Agreement or any other commercial agreement executed, or any procurement process initiated through issuance of Request for Selection (RfS) / Request for Proposal (RfP), prior to the date of notification of these Regulations as regards BESS Systems. Such agreements and processes shall continue to be governed by their respective terms and conditions and the applicable orders of the Commission.

18.2 Any BESS project that has achieved financial closure or has commenced construction prior to the notification of these Regulations shall be deemed to comply with the requirements of regulation 5.3 (minimum project size), notwithstanding any variation from the threshold specified therein.

18.3 Existing registrations or empanelments of Aggregators, AS providers or other entities with SLDC or Distribution Licensees, effected prior to the notification of these Regulations, shall remain valid subject to such entities shall complete re-registration under the procedure notified by the SLDC under these Regulations."

79. The Commission also observes that the Energy Department, Government of Rajasthan, in exercise of powers under Section 108 of the Electricity Act, 2003 vide its directive dated 16.10.2025 Order directed the Commission to expeditiously frame and notify the RERC (Battery Energy Storage Systems) Regulations 2025. The State Government has further directed that the directions may be treated as a matter of the highest priority considering the central role of BESS in enabling renewable energy integration, maintaining the grid stability and resilience, and fostering a competitive, consumer centric electricity market in Rajasthan.

80. In the light of the foregoing discussions, the finalized Regulations duly authenticated, placed below, may be published in the Official Gazette.

81. A copy of this memo, along with the finalized RERC (Battery Energy Storage System) Regulations, 2026 may also be sent electronically and/or by post to the State Government, Central Electricity Authority (CEA), concerned Utilities and other stakeholders.

(Hemant Kumar Jain)
Member

(Dr. Rajesh Sharma)
Chairman

Annexure-I

S.No.	Stakeholders Name
1.	Sh. Shanti Prasad
2.	Rajasthan Rajya Vidyut Utpadan Nigam Ltd(RVUNL)
3.	RUVITL
4.	Centre for Energy, Environment & People (CEEP)
5.	Laxmi Narayan Nimawat
6.	D.D.Agarwal
7.	Er. Y.K. Bolia
8.	Statcon Energiaa Pvt Ltd
9.	UltraTech Cement Ltd
10.	CGE II Hybrid Energy Pvt Ltd
11.	JVVNL

Annexure-II

S.No.	Stakeholders Name
1.	Rajasthan Rajya Vidyut Utpadan Nigam Ltd(RVUNL)
2.	RUVITL
3.	Centre for Energy, Environment & People (CEEP)
4.	Laxmi Narayan Nimawat
5.	D.D.Agarwal
6.	CGE II Hybrid Energy Pvt Ltd
7.	JVVNL

RAJASTHAN ELECTRICITY REGULATORY COMMISSION

NOTIFICATION

Jaipur, March…,2026

No. RERC/Secy/Reg. _____ /2026,- In exercise of the powers conferred on it under Section 61, Section 86 read with Section 181 of the Electricity Act, 2003 (No. 36 of 2003), and all other powers enabling it in this behalf, the Rajasthan Electricity Regulatory Commission, after previous publication hereby makes the following Regulations, namely:

1. Short Title, Commencement, and Applicability:

1.1. These Regulations shall be called the Rajasthan Electricity Regulatory Commission (Battery Energy Storage Systems) Regulations, 2026.

1.2. These Regulations shall come into force from the date of publication in the Official Gazette.

1.3. These Regulations shall apply to all Licensees, State Transmission Utility (STU), State Load Despatch Centre (SLDC), Generating Companies, Renewable Energy Developers, Aggregators, Battery Energy Storage System (BESS) Service Providers, Consumers/Prosumers, and other entities involved in the Planning, Procurement, Deployment, Operation, or Utilization of Battery Energy Storage Systems within the State of Rajasthan.

1.4. Technology Neutrality: These Regulations are intended to be Battery Energy Storage System technology-neutral and shall apply to all forms of battery energy storage systems that meet the required technical and performance standards, ensuring the framework remains relevant as technology evolves.

Provided that these Regulations, by order of the Commission, may be extended to other energy storage technologies mutatis-mutandis until such time as the specific Regulations for such technologies are notified by the Commission.

2. Definitions:

(1) In these Regulations, unless the context otherwise requires:

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

(b) "Aggregator(s)" or "Distributed Energy Resources Aggregator or DERA" means an entity registered with the Distribution Licensee to provide aggregation of one or more services including demand response services, Distributed Generation, Energy Storage, etc., within a licensee area;

(c) "Ancillary Services" or "AS" means the services defined under the Central Electricity Regulatory Commission (Ancillary Services) Regulations, 2022 as amended from time to time;

(d) "Battery Energy Storage System" or "BESS" means a stationary system connected to the electricity system which is used to store electrical energy by means of electrochemical materials and typically includes batteries, power conversion system and Battery Management System (BMS);

(e) "Battery Energy Storage System Developer" or "BESSD" or "Developer" means the entity owning and/or operating the BESS facility for the supply of power or provision of storage services under these Regulations;

(f) "Commission" means the Rajasthan Electricity Regulatory Commission;

(g) "Distribution Licensee", "Transmission Licensee", "Generating Company", and "**SLDC**" shall have the meanings assigned to them under the Act;

(h) "**Nodal Agency**" means the State Load Despatch Centre (SLDC), which shall be responsible for the implementation of the Ancillary Services at the intra-state level;

(i) "Ownership of Energy Storage System" shall mean the ownership of Energy Storage System including Battery Energy Storage Systems as per the guidelines issued by the Ministry of Power (MoP) from time to time, permitting ownership by Distribution Licensees, Transmission Licensees, Generating companies, independent power producers, consumers, Aggregators and third party investors, subject to applicable laws and Regulations;

(j) "Round-Trip Efficiency" means the ratio of the total electrical energy discharged from the BESS to the total electrical energy supplied to charge the BESS, expressed as a percentage;

(k) "Standalone Battery Energy Storage System (BESS)" means an energy storage system that is not co-located with any generating station or consumer load and is not dedicated to a specific generator or consumer, and which may participate in power markets, ancillary services, or be contracted under long-term or short-term arrangements;

(2) Save as aforesaid and unless repugnant to the context or the subject matter otherwise requires, words and expressions used in these Regulations and not defined herein, but defined in the Act, or the State Grid Code/IEGC (as applicable) or any other Regulations/orders of the Commission/CERC/CEA shall have the meaning assigned therein, as amended from time to time.

3. Objectives

The primary objectives of these Regulations are:

(a) To enable deployment and utilization of BESS as part of generation, transmission, and distribution assets;

(b) To facilitate the participation of BESS in ancillary services and energy markets;

(c) To promote cost-effective energy storage solutions that support grid stability, frequency management, and renewable energy integration;

(d) To establish a framework for Aggregators and third-party BESS developers to participate in the electricity market;

(e) To enable market development and adoption of Battery Energy Storage Systems across all sectors.

4. Ownership and Business Models

4.1. BESS may be developed, owned, leased, or operated by Distribution Licensees, Transmission Licensees, Generating Companies, Independent Power Producers (IPPs), Independent Battery Energy Storage Service Provider, Consumers/Prosumers, Standalone BESS developers, Renewable Energy Developers, Aggregators, or any third-party investors, in accordance with the Guidelines/Notification/Rules issued by the Central Govt from time to time.

Explanation: "Consumers/Prosumers" include consumers participating under Net Metering/Net Billing/Group Net Metering/Virtual Net Metering frameworks or under Green Energy Open Access, as applicable.

Provided that the SLDC, as Nodal Agency, shall discharge system operation functions in accordance with these Regulations.

Provided further that nothing in these Regulations shall be construed to determine or modify the status/eligibility of any Captive Generating Plant, captive user(s), or Group Captive arrangement. Any such determination shall be governed by the applicable captive framework and the relevant regulations/rules/orders.

4.2. BESS may be deployed as co-located with RE & Conventional generators, grid-connected standalone storage, embedded in distribution or transmission networks, behind the meter (Consumer level), or integrated with Electric Vehicle (EV) infrastructure for Vehicle-to-Grid (V2G) services.

4.3. The Battery Energy Storage System shall be utilised either as an independent Battery Energy Storage System or as part of the generation, transmission, or distribution system, or integrating the consumer's load independently or colocated with RE sources installed behind the meter.

4.4. The Battery Energy Storage System shall have the same legal status as that of the owner:

Provided that if such a Battery Energy Storage System is not co-located with, but owned and operated by, the generating station or licensee or consumer, the legal status shall still be that of the owner, but for the purpose of scheduling and dispatch and other matters, it shall be treated at par with a separate storage element.

Provided further that:

(1) Standalone BESS and any non-co-located BESS scheduled as a separate storage element shall comply with scheduling, metering, telemetry, and dispatch requirements under the applicable Grid Code and SLDC procedures.

(2) Deviations from the schedule for such BESS shall be settled as per provisions of the applicable Regulations/Orders/ Procedure of CERC mutatis- mutandis in this regard, as amended from time to time, till such time Regulations in this regard are issued by the Commission.

(3) Metering shall be through SEM or other such arrangement as specified by SLDC to distinctly capture charging drawal and discharging injection at the interconnection point.

5. Planning and Procurement:

5.1. The holistic system requirements, including but not limited to, managing reverse power flow from lower to higher voltage at various substations, addressing transmission or distribution network congestion mitigating high renewable energy penetration challenges, and resolving voltage or frequency stability issues, shall be the criterion for finalizing the BESS locations in the Distribution System or Transmission System by Distribution/Transmission Licensees.

5.2. The Distribution Licensees and the State Transmission Utility (STU) in consultation with SLDC shall plan the requirement of energy storage capacity within their respective areas of operation, keeping in view, among other relevant factors, the technical considerations, system reliability, load requirements, peak management, congestion relief, renewable energy integration and ancillary services and such other factors as may be relevant. While preparing the storage plan due consideration will be given to projected ARR savings from the relevant factors, but not limited to, avoided power purchase cost, deferred T& D Capex, reduction of losses and curtailment.

Provided that the storage planning shall be aligned with the State's Renewable Energy Policy, Energy Storage Targets, State Transmission Plan and any directives issued by the State Government or the Commission from time to time.

Provided further that the STU shall prepare a consolidated intra-state storage plan (including recommended locations/voltage levels), considering transmission and distribution constraints, and shall share it with Distribution Licensees, Transmission Licensee, SLDC and all other relevant entities for alignment on procurement/implementation.

Provided also that such planning and procurement shall, to the extent applicable, be aligned with the prevailing Resource Adequacy Plan/guidelines notified by the Ministry of Power/Central Electricity Authority. The proposed storage plan shall indicate the adequacy gap addressed, the expected capacity contribution of BESS , and a cost-optimization/options assessment, including alternatives such as network augmentation, demand-side measures, or flexible generation.

Provided also that where a Distribution Licensee or Transmission Licensee or a generating company subject to inclusion in above plan proposes BESS as a regulated network/grid-support asset (including associated enabling infrastructure) for, but not limited to, reliability, congestion management, voltage support or deferral of network augmentation, the Commission may approve such investment and cost recovery through ARR/Tariff following the due regulatory process for which the Commission may suitably adopt CERC Norms/methodology and also considering prevailing market conditions, as applicable, till such norms/methodology specified by the Commission.

Provided also that in their respective storage plans, the licensees or generating company shall specifically indicate whether they intend to install and operate their own Battery Energy Storage System (BESS) or procure energy storage capacity or services from third-party providers, along with its proposed location, specifying the proposed injection point, justifying the location based on technical, economic and grid integration considerations.

5.3. The minimum individual project size shall have a power rating of 1MW and above, with a suitable energy rating of at least two hours, connected at 11 kV or above.

Explanation: Consumers/ Prosumers" include consumers participating under Net Metering/Net Billing/Group Net Metering/Virtual Net Metering frameworks or under Green Energy Open Access, as applicable.

Provided that this minimum size does not apply to BESS at the Distribution Transformer (DTR) level or for behind-the-meter applications by consumers/ Prosumers.

Provided further that for BESS co-located with existing generating stations, the minimum energy rating requirement may be reduced to less than two hours where the primary application is ancillary services/frequency regulation, subject to approval of the storage plan by STU, Discom and SLDC.

Provided also *that* the Commission may, from time to time, review and revise the minimum project size through separate order to adapt to technological advancements and market conditions.

6. Utilization for Ancillary Services:

6.1. BESS shall be eligible to provide services including, but not limited to frequency regulation, spinning reserves, voltage support, black start services, and demand response services or any other services defined in IEGC/State Grid Code as amended from time to time.

6.2. BESS may provide multiple services concurrently or sequentially, subject to technical capability, telemetry/communication requirements, dispatch instructions, and contractual obligations.

Provided that the SLDC shall specify the methodology for separate accounting of such multiple services in the Procedure issued by it under **regulation 13** of these Regulations.

6.3. Revenues and performance obligations for different services shall be accounted separately, and the framework shall prevent double accounting or double recovery of benefits or liabilities.

6.4 Any entity owning, operating or providing multiple services through BESS including Generating companies, Licensees, Standalone BESS Developers, Aggregators and IPPs shall maintain adequate capacity to meet all contractual commitments and shall not indulge in gaming. Where there is a conflict between contracted commitments and real-time system security requirements, SLDC instructions for grid security shall prevail, and settlement shall be as per the SLDC procedure issued in accordance with **regulation 13** of these Regulations.

6.5 BESS participating in ancillary services shall meet the following minimum requirements:

(a) Response time as specified by SLDC for each category of ancillary services;
(b) Communication and Telemetry infrastructure enabling real time data transmission to SLDC;
(c) Capability to receive and respond to Automatic Generation Control (AGC) signals, where applicable; and
(d) Metering arrangement as specified by the SLDC.

7. Role of Aggregators:

Aggregators may aggregate BESS resources from multiple sites to provide services to the SLDC/ Transmission Licensee/Distribution Licensee/Generating Companies or other market participants and shall follow the protocols issued by SLDC.

Provided that the SLDC in consultation with licensees, shall specify the minimum technical and financial eligibility criteria, online registration formats, applicable fees, and any other terms and conditions for an entity to register as an Aggregator.

8. Commercial Agreements:

Eligible entities may enter into commercial agreements with Licensees or other market participants for the provision of BESS services:

Provided that all other aspects related to different agreements (such as award documents, commissioning, financial closure, transmission connectivity, payment security mechanism, event of default and consequences of change in law, codes and standards for safety and grid connectivity) shall be in accordance with the guidelines issued by the Ministry of Power and amendments thereto from time to time.

Provided further that Commission may specify its own norms and standards from time to time, and the same shall be applicable.

9. Tariff and Market Participation:

9.1 All procurement of BESS capacity and/or services by the Licensees shall be undertaken through tariff-based competitive bidding in accordance with the guidelines and notifications issued by Central Govt/ MoP/MNRE from time to time.

Provided that the bid documents shall explicitly specify the commercial and operational responsibility for charging energy, losses/round-trip efficiency, other battery parameters, metering, scheduling, settlement, and any trading/ intermediation arrangement.

Provided further that in case of any deviations from the bidding guidelines and notifications issued as above the approval of the Commission shall be required for such deviations.

Provided also that any expenses requiring pass through in the ARR and provided in the bid documents shall be subject to the Tariff adoption/Approval of the Commission.

Provided also that the Commission may allow alternative procurement methods for pilot or demonstration projects and small scale or distributed projects.

9.2. Battery Energy Storage Systems (BESS) owned or operated by consumers/ Prosumers shall be permitted to participate in energy arbitrage by purchasing electricity from the grid during off-peak hours and selling it back to the grid during peak hours.

Provided that the settlement mechanism for such transactions shall be as specified by the Commission through a separate order either Suo-motu or based on application filed before it.

Provided further that consumers/ Prosumers may install the Battery Energy Storage System either as a standalone system or in conjunction with a solar power plant.

Provided also that consumers/ Prosumers shall be allowed to operate the BESS in such a manner that the energy stored in the system, installed behind the consumer's meter, may be utilized for self-consumption or supplied to the Distribution Licensee during peak hours for which Commission may specify incentivized tariff and other necessary conditions through a separate order.

Provided also that while specifying the settlement mechanism and incentivised tariff under this sub-regulation, the Commission shall have due regard to the following:

(a) Prevailing Time-of-Day (ToD)/ Time- of –Use(ToU) tariff framework of the Distribution Licensee or any such other reference Commission deem fit.
(b) Principle that energy stored from renewable sources shall retain its renewable character, consistent with regulation 9.4.
(c) Principle of avoidance of double taxation on stored energy, in consonance with National Framework for promoting Energy Storage Systems issued by the Ministry of Power.

9.3. For procurement of ancillary services, the Commission may approve a single-part or multipart tariff structure, including fixed capacity charges, variable energy charges, and performance-linked payments. The Commission may also consider pay-for-performance mechanisms and/or cap-and-floor tariff frameworks to incentivize reliable and efficient provision of ancillary services.

9.4. Renewable energy procured and used for charging BESS shall retain its renewable character upon discharge. Accordingly, obligated entities/ consumers shall be eligible to claim RPO/RCO benefit for supply/consumption of such discharged energy.

10. Technical Standards:

BESS installations shall conform to technical standards specified by the Central Electricity Authority (CEA), MNRE, and other relevant authorities. BESS providers shall submit real-time data to SLDC as prescribed.

11. Safety, Cyber security, and Environmental Norms:

11.1. BESS systems shall comply with applicable regulations, standards and codes issued by the Central Electricity Authority (CEA) regarding safety.

11.2. Cyber security and communication protocols shall adhere to the guidelines of the Ministry of Electronics and Information Technology (MeitY), the Central Electricity Authority (CEA), and the Ministry of Power (MoP).

11.3 Decommissioning, recycling and disposal of batteries used in BESS shall be carried out in accordance with the Battery Waste Management Rules, 2022, as amended from time to time, including provisions relating to Extended Producer Responsibility (EPR), collection targets, recycling efficiency, and reporting obligations.

12. Role of Licensees:

12.1. STU in consultation with Distribution Licensees shall publish on their websites potential sites at the 11 kV voltage level 33/11 kV substations and at Extra High Voltage (EHV) substations for establishing BESS of the required capacities based on feeder-level and system-level renewable integration and network requirements.

12.2. Distribution licensees shall register Distributed Energy Resource Aggregator (DERA) in accordance with these Regulations.

12.3. Expenditure on BESS shall be recoverable through the Annual Revenue Requirement (ARR) under specified heads for power purchase or capital expenditure, as applicable, subject to Commission approval, for which the Distribution Licensee shall file suitable proposals.

12.4. The Transmission Licensee shall include BESS in its planning and investment plan and file proposals for Commission approval. Approved expenditure shall be recoverable through the Transmission Business ARR.

12.5. All procurement of BESS capacity or services shall be undertaken only through a transparent competitive bidding process conducted in accordance with the guidelines issued by the Government of India, indicating the applicable case as specified in such guidelines.

13. Role of Nodal Agency (SLDC):

13.1. SLDC shall verify governor settings of thermal generators and assess the requirement of Primary, Secondary, and Tertiary Reserve Ancillary Services (PRAS, SRAS, TRAS) from BESS. The report shall be published and updated annually.

13.2. The SLDC shall specify eligibility criteria for BESS resources to provide ancillary services, based on technical criteria and operational performance, and publish on its website within three months from the date of notification of this Regulation.

13.3. The SLDC, in consultation with STU and licensees, shall prepare and publish on its website the eligibility criteria for the registration of AS providers within three months from the date of notification of these Regulations.

13.4. The SLDC shall prepare a procedure for Scheduling, Metering, Accounting, Settlement, and Commercial mechanisms for the operationalization of ancillary services through BESS within six months from the date of publication of these Regulations.

13.5. The SLDC shall monitor the performance of BESS, including State of Charge (SoC), Round-Trip Efficiency, and availability.

13.6. SLDC shall register Ancillary Services (AS) providers in accordance with these Regulations.

Explanation: Registration as an Ancillary Services (AS) provider under this sub-regulation is distinct from and in addition to registration as a distributed energy Resource Aggregator (DERA) under **regulation 12.2**, where an entity is registered as a DERA and also intends to participate in ancillary services, such entity shall additionally register as on AS provider with SLDC under this sub-regulation.

13.7. The SLDC shall prepare a standard agreement format for procuring ancillary services and obtain the Commission's approval before entering into agreements.

13.8. Timelines for registration/empanelment:

(a) SLDC shall dispose of complete applications for registration/empanelment as an Aggregator of AS provider (where applicable) within thirty days.

(b) Where an application cannot be disposed of within the timeline, SLDC shall issue a reasoned deficiency/extension notice and dispose of the application within an additional thirty days.

(c) Connectivity processing timelines shall be as per the applicable SLDC procedure notified under these Regulations.

(d) Any grievance regarding delay or denial of registration or empanelment under this regulation if remains unresolved for fifteen days, may be escalated by the aggrieved party to the State Power Committee under the dispute Resolution mechanism specified in regulation 17.2 of these Regulations.

14. Role of Generating Companies/IPPs/CPPs/BESS Developers

Generating companies, IPPs, CPPs, and BESS Developers may establish BESS at any point in the system, after obtaining due approvals. Such entities may participate in the ancillary services market and may register with the SLDC to provide such services through market mechanisms.

15. Consumers/Prosumers:

15.1. All consumers/ prosumers shall be permitted to establish behind-the-meter Battery Energy Storage Systems (BESS) up to their contract demand, with or without solar power plants.

Provided that such consumers/ prosumers shall be required to register their BESS installations with the Distribution Licensees through their online portal, however, no other permission or formal connection agreement with the Distribution Licensee shall be required for installation of the BESS.

Provided further that such systems shall comply with the technical standards and safety requirements specified by the Central Electricity Authority (CEA).

15.2. In case the Battery Energy Storage System (BESS) is installed in hybrid mode along with a solar power plant that is either already installed or proposed to be installed under the Net Metering, Net Billing, Group Net Metering, or Virtual Net Metering framework, the entire hybrid system shall be governed by the respective provisions applicable to the framework under which the solar plant is registered, i.e., Net Metering, Net Billing, Group Net Metering, or Virtual Net Metering, as specified under the Rajasthan Electricity Regulatory Commission (Grid Interactive Distributed Renewable Energy Generating Systems) Regulations, 2021, as amended from time to time.

Provided that in such cases, the energy injected into the Distribution Licensee's network during non-solar peak hours shall be payable to the consumer/prosumer at the incentivized tariff, as may be specified by the Commission through a separate order issued either suo motu or upon an application filed before it.

15.3. Consumers or prosumers having eligible behind-the-meter BESS shall be permitted to participate in the demand response and similar programmes, either directly or through an Aggregator, subject to compliance with applicable regulations. The Distribution Licensees shall also develop programmes for Vehicle to Grid/Grid to Vehicle concept through smart chargers.

Provided that participation in such services shall require the installation of a smart meter and communication infrastructure capable of real-time data acquisition and transmission, as may be specified by the Distribution Licensee.

Provided further that Behind-the-meter BESS exports by such consumers, where permitted and settled under the applicable net billing/net metering/GNM/VNM/ToD/ ToU framework administered by the Distribution Licensee shall not require SLDC scheduling, however, if such BESS participates in the market or in ancillary services directly or through an Aggregator shall comply with the directions of Distribution Licensee & SLDC and also comply with SLDC's Scheduling requirement as provided under the SLDC procedure.

16. Open Access to BESS:

Open Access to BESS shall be granted in accordance with, and the applicable Open Access charges shall be levied as per, the RERC Green Energy Open Access Regulations, as amended from time to time.

17. Dispute Resolution:

17.1. Consumer-related disputes shall be dealt with as per the RERC (Consumer Grievance Redressal Forum, Electricity Ombudsman and Consumer Advocacy) Regulations, 2021.

17.2. All other disputes arising under these Regulations shall be referred to the State Power Committee constituted under the State Grid Code which shall endeavor to resolve the grievance within 30 days and where State Power Committee is unable to resolve the grievance, it shall be referred to the Commission and Commission's decision in this regard shall be final and binding.

18. Savings and Transition:

18.1 Nothing in these Regulations shall affect the validity of any Power Purchase Agreement, Energy Storage Service Agreement or any other commercial agreement executed, or any procurement process initiated through issuance of Request for Selection (RfS) / Request for Proposal (RfP), prior to the date of notification of these Regulations as regards BESS Systems. Such agreements and processes shall continue to be governed by their respective terms and conditions and the applicable orders of the Commission.

18.2 Any BESS project that has achieved financial closure or has commenced construction prior to the notification of these Regulations shall be deemed to comply with the requirements of regulation 5.3 (minimum project size), notwithstanding any variation from the threshold specified therein.

18.3 Existing registrations or empanelments of Aggregators, AS providers or other entities with SLDC or Distribution Licensees, effected prior to the notification of these Regulations, shall remain valid subject to such entities shall complete re-registration under the procedure notified by the SLDC under these Regulations.

19. Power to give directions:

The Commission may, from time to time, issue such directions and orders as it considers appropriate for the implementation of these Regulations.

20. 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 as may be necessary for removing the difficulty.

21. Power to relax:

The Commission may, for reasons to be recorded in writing, relax any of the provisions of these Regulations on an application made before it.

22. Power to amend:

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

By Order of the Commission

(Secretary)

Rajasthan Electricity Regulatory Commission