

Submission on RRECL's Draft SOP for Monitoring of Installation of BESS with RE Projects by C&I Consumers on STU/DISCOM Network in Rajasthan

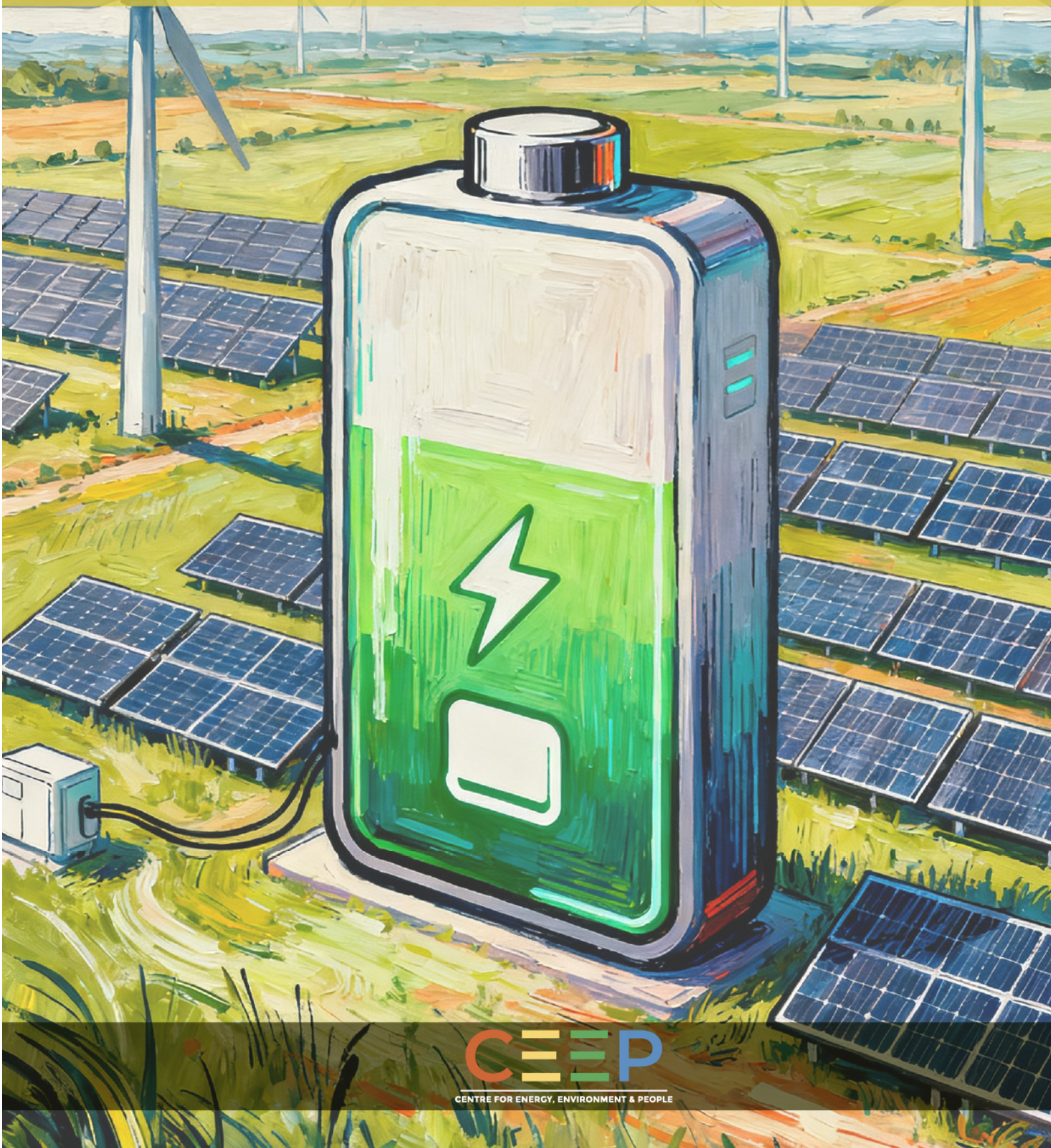


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1. Introduction

Rajasthan Renewable Energy Corporation Limited (RRECL) has invited public comments on the Draft Standard Operating Procedure (SOP) for Monitoring of Installation of Battery Energy Storage System (BESS) Projects by C&I consumers on STU/Discom Network in Rajasthan.

Centre of Energy, Environment and People, Jaipur, submits the following comments on the proposed SOP. It is requested that these comments be kindly admitted and taken on record, and that we be given an opportunity to present these submissions during any of the hearings.

2. General Comments

2.1. Powers and Functions of Coordination Committee

The Draft SOP, in its *Preamble*, states that RRECL has been mandated to monitor compliance with the SOP be responsible for monitoring compliance and “taking appropriate action” in cases of non-compliance pursuant to the decision of the 37th Meeting of the Coordination Committee of Rajasthan State Power Sector Companies held on 5th December 2025.

While the Government of Rajasthan, vide the Rajasthan Integrated Clean Energy Policy, 2024, has designated RRECL as the nodal agency for facilitating the implementation of BESS projects under Clause 5 read with Section B of the Policy, the Policy does not expressly confer upon RRECL the authority to monitor compliance or impose punitive action. It would therefore be appropriate to clarify the legal and institutional basis pursuant to which the additional functions of monitoring compliance and taking appropriate enforcement action have been entrusted to RRECL. In light of this lack of clarity, we seek the following:

- a) Copy of the specific Minutes of 37th Meeting of the Coordination Committee pursuant to which RRECL has been entrusted with the stated functions be provided along with all its annexures.
- b) Copy of legal document, if any, through which such powers and functions have been conferred upon the Coordination Committee.

3. Section-wise Comments

3.1. Monitoring of BESS Compliance on Energy (MWh) Basis Only

Clause 3.2 of the draft SOP provides that monitoring and compliance assessment for under Case I and Case II shall be undertaken on an energy basis (MWh) only. While energy capacity is an important parameter for assessing compliance, restricting the assessment to MWh alone may not be sufficient to determine whether the installed BESS can meet the mandated requirement. The BESS’ power capacity (MW) is also relevant, as it determines the rate at which the stored energy can be delivered. Therefore, both energy capacity (MWh) and power capacity (MW), as appropriate, may need to be considered for verifying compliance. The draft SOP itself recognises this distinction, as the illustrative calculations in *Annexure 2* determine both energy and power.

It is therefore suggested that the word “only” in Clause 3.2 be reconsidered and that the SOP specify appropriate parameters for verification of requisite compliance, including available power capacity (MW), available energy capacity (MWh), and, where relevant, the ability of the BESS to deliver the mandated energy over the specified duration.

Further, where the BESS requirement is linked to RE generation, the applicable normative CUF/PLF may also be considered for determining the required energy capacity (MWh), in accordance with the applicable regulatory framework and procedures. The methodology should be clearly defined and consistently applied to ensure that the BESS requirement appropriately reflects the associated RE capacity and generation.

3.2. Treatment of BESS Degradation and Temporary Unavailability

Clause 5.1.1 requires that the stored energy declared at the time of commissioning be maintained throughout the project lifecycle. Clause 5.1.2 further requires the consumer/developer to restore any deficit by installing additional BESS capacity whenever the stored energy falls below the declared level.

This requirement may not adequately account for the degradation of BESS over their operating life. This is particularly relevant as the draft SOP itself requires submission of the warranted State of Health (SoH) degradation curve, warranted cycle life and other relevant technical parameters as part of the installation report. Accordingly, there appears to be a need to distinguish between normal degradation of the BESS within the OEM warranted performance profile and an actual deficiency in the mandated BESS capacity.

It is therefore suggested that the restoration requirement under Clause 5.1 be linked to the applicable degradation profile and the SoH of the BESS, rather than requiring the originally declared stored energy to remain unchanged throughout the entire project lifecycle. This shall be technically and financially unviable for the C&I consumers. A suitable tolerance may also be specified to account for normal operational variation and measurement uncertainty.

Further, *Category A: Non-Installation and Prolonged BESS Unavailability* presently covers BESS capacity shortfalls that are not restored within the prescribed timeline, while prolonged BESS unavailability is defined as unavailability exceeding 30 consecutive days or 45 days in the aggregate during a quarter, irrespective of the cause. Such a formulation may result in events beyond the reasonable control of the consumer/developer, being treated in the same manner as deliberate non-compliance.

It is therefore suggested that the SOP address the following circumstances separately when dealing with unavailability:

- a) normal degradation within the OEM warranted profile
- b) planned maintenance as communicated to RRECL
- c) force majeure events or other circumstances beyond the reasonable control of the consumer/developer

The SOP may also provide for timely reporting and submission of documentary evidence for such events, together with a reasonable restoration period based on the nature of the

deficiency. This would ensure that enforcement is proportionate to the nature and cause of the deviation, while maintaining the availability of the mandated BESS capacity over the project lifecycle.

3.3. Data Requirement in Annexure 1

Annexure 1 requires extensive technical information relating to the RE plant and BESS, including module ratings, number and make of modules, inverter make and rating, WTG make and model, hub height, rotor diameter, battery chemistry, manufacturer, PCS, EMS, self-discharge rate, warranted cycle life and other technical parameters.

It is recognised that certain technical information may be necessary for verifying compliance with applicable safety, metering and technical requirements. But the information sought should bear a clear relationship to the SOP's specific purpose.

The objective of the SOP is principally to verify compliance with the mandated BESS requirement. Accordingly, detailed information regarding individual equipment and design parameters should not be required unless it is demonstrably necessary for a specific regulatory or technical verification.

This is particularly relevant for parameters such as detailed equipment make/model, rotor diameter, module specifications, and other proprietary technical characteristics that may not be directly relevant to determining the mandated BESS capacity or to monitoring ongoing compliance under this SOP.

It is suggested that Annexure 1 be rationalised by retaining only those parameters necessary for establishing project identity, RE capacity, applicable BESS obligation, installed BESS power and energy capacity, metering, safety compliance, and relevant performance parameters. Detailed proprietary technical information may either be omitted or required only where specifically necessary for technical verification by the competent authority.

3.4. Need for a new portal in presence of existing mechanism

Clause 5.3 proposes a dedicated monitoring and compliance portal to be developed by RRECL, through which consumers/developers would upload metered data, JMRs and other documents. Clause 5.4 simultaneously provides that RRECL's monitoring record will be based on annual reports, data received from DISCOM/SLDC and monthly meter data. This may result in duplication of reporting and monitoring requirements, particularly where the same information is already available with the concerned utility.

The issue is particularly relevant in light of the RERC BESS Regulations, 2026. The Regulations recognise consumers/prosumers as BESS owners and provide a separate framework for behind-the-meter BESS under Regulation 15. Further, *Regulation 4.1* provides for SLDC to discharge system operation functions in accordance with the Regulations, while Regulation 10 provides for submission of real-time data to SLDC as prescribed. *Regulation 13.5* also provides for monitoring of BESS performance, including State of Charge (SoC), Round Trip Efficiency and availability.

Further, for behind-the-meter BESS, Regulation 15.1 provides for registration with the relevant Distribution Licensee through its online portal and states that no additional permission or formal connection agreement with the Distribution Licensee is required merely for installation of the BESS. In this context, the need for an additional standalone RRECL portal should be examined, particularly where the required information is already being collected or maintained by the Discom or SLDC.

It is suggested that, wherever a separate RRECL portal is considered necessary, it should be integrated with the existing Discom/SLDC systems to enable retrieval and sharing of information already available with the concerned utility, rather than requiring consumers/developers to submit the same information through multiple interfaces. RRECL may function as the compliance and monitoring layer for the specific BESS mandate under this SOP, while system operation, real-time monitoring and operational data management may remain with SLDC/DISCOMs in accordance with their respective regulatory functions. This would reduce duplication, simplify compliance for consumers/developers and improve coordination among the concerned agencies.

3.5. Time for Addition/Removal of BESS Not Defined

Clause 5.5 provides that where installed RE capacity changes, the Case I BESS obligation shall be recalculated and the consumer shall install or adjust the BESS capacity within the restoration timeline applicable under Clause 5.1.2. But the draft does not clearly specifies the date on which the change in RE capacity or contract demand shall be considered as effective and the date by which the additional BESS capacity must actually be installed, commissioned and demonstrated as compliant. This could potentially lead to a gap in ensuring compliance with the compliance requirements.

It is requested that a specific and reasonable timeline be prescribed for the installation/augmentation/reduction of BESS following a change in RE capacity or contract demand. The timeline may take into account procurement, installation, testing and commissioning requirements. The SOP may also clarify how the project will be treated during the interim period between the effective date of the change and the commissioning of the revised BESS capacity.

3.6. Ease of doing business

Clause 5.7.1 requires prior written approval of RRECL for removal, relocation or decommissioning of the mandated BESS. While the clause provides that RRECL shall respond within 30 days, it further states that failure to respond will result in escalation to the competent authority and that *“silence shall not be construed as approval”*.

It is suggested that Clause 5.7.1 provide a definitive time-bound process for the disposal of applications. Where the competent authority is unable to take a decision within the initial 30 day period, the matter may be mandatorily escalated within a specified period and finally disposed of within a further defined timeline. The consumer/developer should not remain indefinitely uncertain merely because an application is pending at RRECL.

3.7. Alignment with the Regulatory Framework and Hierarchy of Instruments

The draft SOP states that it is to be read with the Policy, RERC regulations, CEA/CERC standards, and other guidelines, and that the SOP may be revised by RRECL. This is important because the underlying BESS obligation is set out in the RERC regulatory framework, whereas the SOP is an instrument for implementation.

The RERC BESS Regulations, 2026, were notified under Sections 61, 86 and 181 of the Electricity Act and now provide a dedicated state framework for BESS.

The SOP should therefore clearly state that, in the event of any inconsistency between the SOP and the Act, Rules, and RERC Regulations, the latter shall prevail.

3.8. Penalty and proportionality

Section 6 of the draft SOP provides for categories of non-compliance and specifies actions and penalties for each category. While such categorization provides a structured enforcement framework, the proposed approach does not account for the degree and nature of the non-compliance. Different levels of deviation in BESS capacity, availability or performance may have materially different implications and therefore warrant proportionate action or penalty.

It is therefore suggested that the enforcement framework be suitably modified to provide for due consideration of the nature, extent, and duration of non-compliance, as well as the reasons for such non-compliance, prior to determining the appropriate action or penalty. Such penalty or action can commensurate with the degree of non-compliance rather than being applied uniformly across all instances falling within a particular category.