



NATIONAL SOLAR ENERGY FEDERATION OF INDIA

Regd. No. 362 / IV of 8 May, 2013

भारतीय सौर ऊर्जा महासंघ

पंजीकरण नं 362 / IV - 8 मई, 2013

Ref no: NSEFI/CERC/2026-27/0081

Date: 06/04/2026

To,

The Secretary
Central Electricity Regulatory Commission
6th, 7th & 8th Floors, Tower B
World Trade Centre, Nauroji Nagar
New Delhi- 110029.

Subject: Submission of comments on the rate of Congestion charge in real-time operation in inter-state transmission of electricity.

Ref: Petition No. 1/SM/2026: Dated- 13.03.2026

Respected Sir,

Greetings from National Solar Energy Federation of India (NSEFI)!

NSEFI is a non-profit organization with the objective of Renewable power development. It is an umbrella organization representing Renewable Energy companies active along the whole photovoltaic value chain: project developers, manufacturers, engineering companies, financing institutions and other stakeholders. The organization was founded in 2013 with the vision to promote renewable energy. Our members have executed Solar as well as Wind power projects across the country, under the State and Central Schemes across India.

This is with reference to the Order issued by the Central Electricity Regulatory Commission (CERC) on the **“Rate of Congestion Charge in Real-Time Operation in Inter-State Transmission of Electricity,”** published on its website on 13th March 2026.

In this regard, NSEFI has consulted its members and compiled their inputs and suggestions on the subject matter. Based on these inputs, NSEFI has prepared a consolidated submission, **which is attached herewith as an Annexure** for the kind consideration of the Commission.

We hope the inputs will be useful for consideration. We remain available for any further clarification or discussion, if required.

With Best Regards,



Subrahmanyam Pulipaka
Chief Executive Officer
National Solar Energy Federation of India



Annexure–

The comments are structured to first address the **fundamental question of whether a separate congestion charge remains necessary in the current power system and market environment**, and thereafter, **only in the event the Commission decides to retain such charges**, to propose specific, limited dispensations for renewable energy generators.

1. Whether a separate congestion charge is required in the present framework

1.1 Changed System and Market Context

Congestion charges were introduced in 2009–10 under a system characterised by:

- Limited inter-regional transfer capacity,
- Absence of organised real-time markets,
- Frequency-linked UI mechanism as the primary balancing tool, and
- Limited commercial signals apart from UI.

Since then, the power system has undergone a structural transformation, including:

- Replacement of UI with a **comprehensive, market-linked DSM framework**,
- Introduction of **Day-Ahead Market (DAM), Real-Time Market (RTM), market splitting, and ancillary services**,
- Security-Constrained Economic Dispatch (SCED) for optimal generation dispatch,
- Progressive tightening of DSM discipline, including for renewable generators.

In the present framework, **system stress, imbalance, and scarcity are already reflected through DSM prices, market outcomes, and Grid operator led corrective actions**. As a result, the original rationale for a separate, standalone congestion charge as a blunt deterrent has weakened substantially.

1.2 Overlap with existing commercial signals

DSM today:

- Reflects real time scarcity and system conditions through market referenced pricing,
- Imposes steep penalties for excessive deviations,
- Is supported by RTM price discovery and market splitting during congestion.

In this context, a congestion charge applied in addition to DSM risks becoming an **overlapping commercial signal**, potentially penalising the same physical behaviour more than once, without a clear incremental benefit to grid security.

Accordingly, it is respectfully submitted that the Commission may consider **whether congestion management objectives are already effectively addressed through the existing DSM and market framework**, and whether a separate congestion charge continues to serve a distinct and necessary purpose.

2. Without Prejudice: If Congestion charges are retained

Without prejudice to the above submission, and **only in the event the Commission decides to impose or retain a congestion charge framework**, the following submissions are made specifically from the perspective of renewable energy generators.

3. Limited controllability of renewable energy output

Renewable energy generation is inherently weather dependent and subject to short term variability. Under injection by wind, solar, and hybrid generators may arise due to:

- Rapid and intra block changes in wind speed or solar irradiance
- Forecasting errors inherent to variable renewable resources
- Sudden meteorological changes close to real time

Unlike conventional generators, renewable generators **do not have the ability to instantaneously ramp up output** to offset such variations. Consequently, under injection within modest limits is a technical characteristic of renewable operation rather than a behavioural deviation.

4. DSM Regulations already provide for RE-specific treatment

The DSM Regulations, 2024 explicitly recognise renewable variability by:

- Prescribing technology-specific tolerance bands,
- Providing for **zero deviation charge within the tolerance band**, and
- Applying deviation charges only beyond thresholds where deviations are considered avoidable.

These provisions reflect a deliberate and balanced regulatory approach, arrived at after stakeholder consultation, to align grid discipline with physical realities.

5. Need for Harmonisation Between Congestion Charges and DSM

If congestion charges are applied independently of DSM tolerance bands, there is a significant risk that renewable generators may be **commercially penalised even when operating within the deviation limits explicitly permitted under DSM**.

Such an outcome would:

- Undermine the intent of DSM tolerance bands,
- Lead to duplicative commercial signals,
- Reduce regulatory consistency and predictability.

6. Suggested Dispensation for Renewable Energy Generators

In light of the above, it is respectfully suggested that, **if congestion charges are to be retained**, the framework may be modified as follows:

S.No	Existing Provision in Order in 1/SM/2026	Remarks	Request from Hon'ble Commission
1	10. We have considered the representations received from the ASOCHAM and NGEL, praying to exempt RE sources from the congestion charge. We are of the view that congestion is an issue of grid security, and all entities must act to reduce it. With largescale	The Commission's observation that " RE sources cannot be exempted from the congestion charge " does not adequately account for the inherent operational characteristics of RE generation. Unlike conventional generating stations, renewable energy plants do not possess instantaneous ramp-down capability for congestion	Already bid out RE Project may be exempted from levy of congestion charges. And New RE generator may be provided a " grace period " of 4 time-blocks (1 hour) to respond to congestion warnings before charges apply conspiring invariability.

	<p>RE integration, RE sources cannot be exempted from the congestion charge. The Congestion Charge mechanism, as prescribed under the CERC (Measures to Relieve Congestion in Real Time Operation) Regulations, 2009, is designed to ensure equitable and efficient use of the transmission network under constrained conditions. Congestion charges are a system operation tool aimed at maintaining grid reliability, and security and discouraging injection or drawal beyond the available transmission capability. The applicability of such charges to all entities, including RE generators, ensures non-discriminatory treatment and uniform accountability for actions that contribute to congestion, regardless of the source of generation.</p>	<p>mitigation. Any forced reduction in generation results in irrevocable energy spillage, thereby leading to a permanent loss of available renewable energy.</p>	<p>Congestion charges for generators should be applicable only where clear causality is established, i.e., where over-injection or under-injection is controllable and avoidable under grid codes and operational instructions.</p>
2	<p>12 (a) The rate of congestion charge shall be 1.5 times the 'Reference Charge Rate' (RR), 'Contract rate' or 'Normal Rate of Charges for Deviation' (NR), as applicable for such entity for such time block as per Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2024 and subsequent amendments and re-enactments, with a minimum rate of Rs 3/unit and a maximum of Rs 10/unit</p>	<p>DSM-Linked Multiplier (1.5x) The proposal to set congestion charges at 1.5 times the DSM rate constitutes dual penalization. RE generators already pay deviation charges for variability, this inherent variability makes it challenging to precisely match generation with real-time demand. If a congestion event is triggered by a deviation that is already being charged under DSM, an additional 1.5x multiplier will have huge impact on the viability of RE Projects which are already under stress. Objection to the Minimum and Maximum rate A fixed floor of ₹3/kWh is economically disconnected from the "Must-Run" status of RE. During peak solar hours, the Market Clearing Price (MCP)</p>	<p>The floor rate of Rs. 3/unit has not been calibrated with reference to RE project economics or competitive bid tariffs. It appears to have been set with conventional generators or merchant entities in mind, where contract rates are significantly higher. Congestion charges should only apply to deviations beyond the existing DSM tolerance bands. Further, with respect to Minimum /Maximum price We humbly submit that to remove the floor price for RE generators and set the maximum price @1.5* Weighted average RE tariff for past 3 years for respective RE category. A floor that exceeds the revenue of the very entity being charged is economically irrational and will deter future RE investment.</p>

		often drops below ₹0.5/kWh. Applying a ₹3/kWh congestion penalty for "over-injection" essentially forces RE generators to curtail power, leading to a national loss of green energy.	
Additional Comments		<p>While congestion management is critical for grid security, renewable generators differ fundamentally from conventional generation in terms of controllability, forecasting accuracy, and operational flexibility.</p> <p>RE deviations are often non-intentional and weather-induced, RE generators lack tools such as real-time procurement or contract revision,</p> <ul style="list-style-type: none"> • Applying congestion charge even within DSM tolerance bands results in double penalty without system benefit. <ul style="list-style-type: none"> ○ RE generation is: Weather-dependent and inherently variable, classified as "Must-Run" under prevailing regulations, and subject to forecasting limitations despite best efforts. 	<ul style="list-style-type: none"> • Apply congestion charges on generators only where controllability exists. • Provide calibrated treatment for RE generators considering must-run and variability aspects. • Re-examine the upper cap to avoid excessive cumulative penalties. • Prioritise market and ancillary mechanisms ahead of commercial penalties.
Additional comments		Since Congestion is a result of delayed transmission infrastructure (ISTS).	Congestion charges should be waived for generators which are

			facing curtailment due delay in Inter State Transmission System
Additional comments		Encouraging Storage as a Solution Instead of penalties, the Commission should incentivize relief.	Regional Entities may be encouraged to use Battery Energy Storage Systems (BESS) to mitigate congestion. Financial support may be provided in this regard.
Additional Comments		Need to Exempt Auxiliary Drawal by Solar and Wind Generating Stations from Congestion Charges Solar and wind generating stations necessarily require limited drawal of electricity from the grid for auxiliary consumption, including for control systems, protection equipment, communication systems, lighting, inverter and transformer support systems, cooling arrangements, oil circulation, monitoring equipment, and other essential station services. In the case of solar projects, such auxiliary drawal may continue during non-solar hours, and in the case of wind projects, during low-wind periods, when generation is unavailable or insufficient but the station must remain energised, safe, and operationally ready. Such drawal is not in the nature of discretionary commercial over-drawal, but is an inherent technical requirement for maintaining the generating station in a safe, stable, and grid-compliant condition.	1. Auxiliary drawal by solar and wind generating stations should be exempted from congestion charges, including drawal during non-solar hours or low-wind periods, where such drawal is for genuine auxiliary requirements. 2. Auxiliary drawal should be distinguished from commercial over-drawal and should not attract congestion charges merely because it occurs during a congested period. A solar or wind generator should not be treated as causing congestion only on account of auxiliary drawal, unless such drawal is shown to be excessive, non-genuine, or in violation of RLDC / NLDC directions.
Additional Comments		Regulatory Misalignment Between Schedule Revision and Congestion Charge Timelines Renewable energy generators are inherently dependent on variable and non-dispatchable sources such as solar irradiation and wind speed.	1. The Commission may consider providing a schedule revision period for RE generators that is aligned with the timeframe prescribed for congestion warning and imposition of congestion charge.

		<p>Owing to the nature of RE generation, timely schedule revision is not always operationally feasible in response to changing system conditions. At the same time, congestion charge may become applicable within a shorter timeframe than that available for schedule revision to take effect. This creates a regulatory inconsistency, as RE generators may be exposed to congestion charges despite lacking the technical ability to undertake timely corrective revision.</p>	<p>2. Such alignment is necessary to ensure that RE generators have a meaningful opportunity to undertake corrective action before being subjected to congestion charges.</p> <p>3. Alternatively, RE generators may be exempted from congestion charges in cases where deviation arises from the inherent variability of renewable resource and timely revision is not operationally feasible.</p> <p>This would ensure that RE generators are not subjected to adverse commercial consequences on account of technical limitations intrinsic to renewable generation and a regulatory framework that does not operate in harmony.</p>
<p>Additional Comments</p>	<p>Ancillary Services Framework as an Alternative or Complementary Mechanism for Grid Stability</p>	<p>ASSOCHAM's submission (Sl. No. 7 of the Order) raised a substantive and forward-looking argument: that CERC's Ancillary Services framework — specifically the Secondary Reserve Ancillary Services (SRAS) and Tertiary Reserve Ancillary Services (TRAS) mechanisms — provides a more effective and equitable tool for managing grid stability during congestion events than the blunt instrument of congestion charges. The Order, however, does not engage with this argument in any meaningful way, and simply retains congestion charges as the primary commercial tool.</p> <p>Congestion charges are a retrospective penalty as they are assessed after the fact, on entities that deviated from schedule, without any guarantee that the</p>	<p>1. For congestion events in corridors that are predominantly RE-driven (i.e., where congestion arises due to high RE generation rather than over-drawal by DISCOMs), NLDC and RLDCs should be directed to first exhaust ancillary services options before invoking congestion charge notices. Congestion charges should be the last resort, not the first response.</p> <p>2. The Commission should establish a formal hierarchy of congestion relief tools:</p> <ol style="list-style-type: none"> i. real-time redispatch through ancillary services; ii. RTM procurement by DISCOMs' to reduce over-drawal;

		<p>charge actually relieved the congestion in real time.</p> <p>Ancillary services, by contrast, are a prospective market mechanism. NLDC actively procures relief from willing and capable providers, who receive payment for the service they render. The ancillary services approach is therefore more directly linked to actual congestion relief and is less likely to impose costs on entities (such as RE generators) that lacked the ability to respond.</p>	<p>iii. emergency instructions to controllable generators; and</p> <p>iv. congestion charges as a backstop only when the above tools have been exhausted or are unavailable.</p> <p>A time-bound pilot may be mandated in the identified RE-rich corridors where ancillary services are used as the sole congestion management tool for a defined period, with detailed data collected to assess efficacy before any decision is taken on the final congestion charge rate.</p>
Additional comments		<p>CERC introduced Regulations on Congestion Charges in 2009 and Approved Procedures in 2013, however these were the times when Renewable Injection to Grid was not significant.</p>	<p>CEA, Grid-India, or any other competent agency to undertake a comprehensive study analysing historical congestion trends in the ISTS, including congestion attributable to RE generators. The study should also examine the operational measures adopted by Grid-India—including SRAS, TRAS, and the Real-Time Market (RTM) mechanisms under the Grid Code—for ensuring grid security during congestion. Such an evidence-based assessment is essential before arriving at any conclusion to justify the imposition of such high congestion charges on RE generators. Accordingly, directs Grid India to prepare a Priority List for various Generators (Thermal, Solar, Wind and others) and buying entities/Discoms, vis a vis not supporting the Grid during Congestion, for proportionate levy of congestion charges. Further, CERC may Repeal Regulations and Procedures for levy of Congestion Charges on</p>



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			Renewable Energy Generators after considering must run rules, and existing forecasting issues in RE
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