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Subject: Submission and Comments regarding Rate of Congestion charge in real-time operation in inter-state transmission of electricity

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Dear Sir,

The CERC ('Commission') has initiated suo-moto proceeding for revising the rate of congestion charge in real time operation in inter-state transmission of electricity and has invited public comments by 06th April, 2026.

Prayas' suggestions and comments on the proposal are detailed in the attached submission.

We apologize for the slight delay in sending these comments. We request you to take our comments on record and allow us to make additional submission if necessary.

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Kind Regards,

Ashwin Gambhir,

Fellow, [Prayas Energy Group](#),

Submission and Comments regarding Rate of Congestion charge in real-time operation in inter-state transmission of electricity.

Prayas (Energy Group)

8th April 2026

1. Background

The CERC ('Commission') has initiated suo-moto proceeding for revising the rate of congestion charge in real time operation in inter-state transmission of electricity and has invited public comments by 06th April, 2026.

The framework for congestion charges has evolved over time, in line with the increasing need to address stability and security of the grid. The Commission on December 22, 2009 had notified the *Central Electricity Regulatory Commission (Measures to Relieve Congestion in Real-Time Operation) Regulations, 2009* ('The Regulations'), which came into effect on December 24, 2009. Under these regulations, the Commission introduced the concept of a congestion charge '*to ensure stability and security of the transmission system*'.

The Commission under the Regulations would periodically set the rate of congestion charge by an order from time to time. The first such order established the rate of congestion charge at Rs. 5.45/kWh to be paid by the defaulting regional entity. This order is applicable till date. In 2013, the Commission approved a Detailed Procedure for relieving congestion in real-time operations which further operationalized the framework. The Commission in its suo-moto proceeding dated 13.03.2026 has now proposed to revise the congestion charge and its applicability as follows:

"(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.

(b) No congestion charge shall be levied for congestion in a transmission corridor if the power flow on the corridor is as per the schedule, but the congestion has been caused by forced outages of a line in the corridor, which occurs after the drawal schedule has been fixed. Such contingencies would have to be tackled through emergency instructions by the concerned /RLDCs/NLDC to the relevant regional entities in order to relieve congestion, considering grid security."

The Commission has proposed to link congestion charges to the Deviation Settlement Mechanism (DSM) rates, with a floor and ceiling.

In our view, the issue of congestion charges cannot be examined in isolation, and requires consideration within the broader framework of congestion management, system operations, and market design. Prayas' suggestions and comments on the proposal are detailed below.

2. Congestion Management in the Indian Power System

Congestion in the Indian power system is, in practice, primarily managed through ex-ante operational planning and scheduling mechanisms, rather than through ex-post financial charges. Congestion is effectively mitigated at the pre-dispatch stage through:

- (a) Declaration of Total Transfer Capability (TTC) and Available Transfer Capability (ATC) by NLDC/RLDCs;
- (b) Ensuring that schedules of control areas remain within declared ATC;
- (c) Market-based scheduling through Power Exchanges.

3. Real-Time Congestion: Limited Occurrence and Operational Handling

Instances of congestion in real-time operation have been extremely infrequent in recent years. In the limited instances where congestion arises due to unforeseen deviations, the same is addressed through established operational mechanisms, including:

- (a) Deviation Settlement Mechanism (DSM), which disincentivizes sustained deviations;
- (b) Rescheduling and dispatch interventions by system operators;
- (c) Activation of Ancillary Services (including TRAS/SRAS); and

Further, ATC is revised dynamically in real time, and subsequent market clearing (including RTM) reflects the updated system constraints. Operational and market mechanisms already provide effective tools for managing congestion in real time, thereby limiting the practical role of congestion charges.

4. Limited Role of Congestion Charges

Historical evidence indicates that congestion charges have been rarely invoked, and their contribution to overall DSM outcomes or market settlements has been marginal. The Report on Short Term Power in India for 2024-25¹ reports that total electricity generation was 1829 BU for 2024-25. For the same period, the total DSM volume was 32 BU, constituting approximately 1.75% of the total electricity generation. In this context, the Net Congestion Charge Surplus for the period from 16.09.2024 to 08.03.2026 amounted to **Rs. 1.82 Cr** (19.79 cr receivable and 17.97 cr payable) representing approximately 0.039% of the DSM Surplus of Rs. **4,554 Cr** for the same duration.² This indicates that congestion revenue constitutes a miniscule portion of the total DSM surplus. Additionally, congestion charges have historically³ been applied infrequently, as evidenced by the following:

| Year | Number of Instances of Congestion |
|--------------------|-----------------------------------|
| 2012-13 | 2 |
| 2013-14 | 2 |
| 2014-15 | 9 |
| 2015-16 | 11 |
| 2016-17 | 7 |
| 2017-18 | 3 |
| 2018-19 to 2023-24 | 0 |
| 2024-25 | 1 |
| 2025-26 | 4 |

Revision of the rate of congestion charge, in isolation, is unlikely to materially enhance grid reliability or market efficiency. The congestion charge mechanism may therefore be viewed as a residual or backstop instrument, rather than a primary tool for congestion management.

5. Need for a Holistic Review of Congestion Management

In light of evolving system conditions—including increased RE penetration, increasing share of real-time markets, and strengthening of DSM and ancillary services, the Commission may consider undertaking a comprehensive review of the congestion management framework.

¹ https://cercind.gov.in/2025/market_monitoring/Annual-Report-2024-25.pdf

² https://webcdn.grid-india.in/files/grdw/2026/03/DSM%20Pool%20Status%20from%2016.09.2024%20to%2008.03.2026_663.pdf

³ <https://grid-india.in/en/markets/congestion-charge>

Such review may include the following aspects:

5.1 Moving towards Smaller Bid Areas

The Detailed Procedure for Allocation of Transmission Corridor for Scheduling of General Network Access and Temporary General Network Access under Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022⁴ defines '**Bid Area**' as *the largest geographical area within which market participants are able to exchange energy without capacity allocation.*

Further, it also notes in Regulation 5,

5. Allocation of Transmission Corridor

a) In order to determine whether the drawl schedules as requisitioned by the GNA and T-GNA grantees can be allowed, RLDCs shall check the availability of the margin for each and every time block against the available inter-regional import/export transfer capability as well as intra-regional and bid/control area import/export transfer capability. This process shall be carried out for all the bid area (s) / control area (s) / group of control or bid areas.

b) For the purpose of transmission corridor allocation, all states and Union Territories shall be configured as bid areas. Further, additional bid areas/groups of bid areas may also be configured as and when the need arises. (emphasis added)

c) NLDC shall be responsible for the configuration/reconfiguration of these bid area(s) based on the anticipated congestion and prevailing grid conditions. Power Exchanges shall keep the provision in their respective systems for the configuration of bid areas as and when intimated by NLDC with due advance notice.

The procedure in its Appendix further notes that,

5. Methodology for assessment of TTC, TRM and ATC

5.1. The Total Transfer Capability (TTC), Available Transfer Capability (ATC) and Transmission Reliability Margin (TRM) for both import & export shall be computed for all the States/Union Territories (UT), Intra-regional/Inter-state level, Inter-regional system, Cross-border interconnections and bid areas. The bid area can also be a part of the Region/State/UT or any combination of the same. The bid area shall be separately defined from time to time as per operational/commercial requirements.

While NLDC/RLDCs have been declaring and publishing TTC/ATC for each state, enforcement has been challenging as this would need configuring each state as a bid area in Power Exchanges and applying such limits. As the above excerpt from the Procedure of allocation of GNA and T-GNA notes, States or even areas within States can be configured as bid areas. Operationalising this change towards smaller bid areas is a critical area of further reform towards congestion management.

5.2 Strengthening of DSM Framework

- (a) DSM continues to play a central role in maintaining grid discipline;
- (b) There is a need to ensure that DSM provides appropriate and responsive economic signals to discourage deviations contributing to congestion.

5.3 Strengthening of Ancillary Services

- (a) Ancillary services have emerged as a critical operational tool for maintaining grid security;
- (b) There is a need to further develop market-based ancillary services and ensure adequate availability of reserves;

⁴ <https://cercind.gov.in/Regulations/Order-allocation290923.pdf>

A robust ancillary services framework is better suited to address real-time congestion than reliance on financial penalties.

5.4 Data Reporting

There should be more public reporting on congestion. The data provided by Grid India should include:

- i. Date/Time of warning issued under Regulation 6 of the Regulations by NLDC/RLDC;
- ii. By what percentage was the ATC breached by the defaulting party

6. Congestion Charges: Residual and Transitional Role

Congestion charges may be retained as a secondary and transitional mechanism, subject to periodic review. The proposed linkage of congestion charges to DSM rates may serve as an appropriate starting point as an interim measure; however, its effectiveness should be reviewed after a reasonable period of implementation. Some options for consideration in terms of refining the charges could include,

- A. If the Commission considers strengthening the deterrent effect, higher penalty bands may be examined. Say Rs 5-15/kWh rather than the proposed Rs 3-10/kWh, given the extremely limited applicability of the penalty, but considering the critical need for grid security.
- B. Consideration of graded penalty structures, linked to the extent of congestion or deviation (w.r.t. to TTC).
- C. Differentiation based on time of day (peak/off-peak) and criticality of transmission corridors.
- D. Enhanced transparency and public reporting of congestion events and ATC breaches.

7. Applicability to Renewable Energy Generators

The Commission has proposed that Congestion Charges will be applicable *'to all entities, including RE generators'*. This, as per the Commission, *'ensures non-discriminatory treatment and uniform accountability for actions that contribute to congestion, regardless of source of generation'*.

The insignificant scale of the historical congestion charges is expected to have negligible impact on the financial viability of competitively bid RE projects. Accordingly, the Commission observation that *'congestion is an issue of grid security, and all entities must act to reduce it'* is well founded and underscores the importance of collective responsibility in maintaining the grid.

Given their inherent intermittency, RE generators are getting some relaxations within the DSM framework such as, a) deviation formula being linked to AvC and not Schedule, b) aggregation benefit, c) no link to frequency and no penal charges up to a certain error band. Similarly, there are other entities which also get certain relaxations under the DSM framework⁵ where no penalty or deviation charges are levied.

| Entity | Deviation Limit |
|--|--|
| General seller (except MSW and RoR) | When both 2 conditions are met: <ul style="list-style-type: none"> • $49.97 \text{ Hz} \leq f \leq 50.03 \text{ Hz}$ • Deviation within 10% or 100 MW |
| RoR generating station | Deviation within 15% or 150 MW |
| MSW | Deviation within 20% |
| Solar/ Hybrid RE | Deviation within 10% (till Mar 2026) and 5% (from 1 st April 2026) |
| Wind | Deviation within 15% (till Mar 2026) and 10% (from 1 st April 2026) |
| Buyer | Over drawal but $f=50 \text{ Hz}$ |

Thus, if RE generators are given exemption under this framework, other entities may also make the same request, which will dilute the entire premise of the congestion framework.

⁵ <https://www.cercind.gov.in/regulations/192-Noti.pdf>

Thus, the principle of non-discriminatory applicability of congestion charges across all entities, including RE generators, is appropriate, given the increasing share of RE. At the same time, it is submitted that system frameworks, including DSM and ancillary services, should continue to account for the inherent variability of RE generation, and prioritize system-level solutions over penal mechanisms.
