Ref: PXIL/S&R/26052026/1 Date: 26th May 2026

To
The Secretary
Central Electricity Regulatory Commission
World Trade Centre, 7th floor, Tower-B
Nauroji Nagar
New Delhi - 110029

Sub: Public notice issued by CERC titled - Staff Paper on "Capacity Market for Electricity in India" – Observations, comments and suggestions from Power Exchange India Limited.

Ref: RA-14027(12)/1/2026-CERC dated 29th April 2026

Dear Sir,

The Hon'ble Commission notified implementation of Central Electricity Regulatory Commission (Power Market) Regulations, 2021 ('PMR') from 15th August 2021. Regulation 4(1)(a)(vi) of PMR 2021, provides enabling provision for introduction of 'Capacity Contracts' in Power exchanges.

In an electricity system, capacity means there are adequate resources on the grid to ensure that the demand for electricity can be always met. A capacity market is designed to ensure sufficient reliable capacity is available by providing payments to encourage investment in new capacity or for existing capacity to remain available. Currently, all Contracts operating on power exchanges are 'Energy-only' Contracts, where emanating price signals is not sufficient to attract investments in generation capacity to ensure reliable and adequate supply of power.

Introduction of Capacity market ensure resources are adequately available, either in the short term, medium term or long term. With the notification of resource adequacy planning regulations by Central Electricity Authority, the transition to an 'energy + capacity market' will ensure security of supply through a market-based mechanism.

We request the Hon'ble Commission to kindly take our suggestions on record and grant us an opportunity to present them to the Commission and its staff.

Thanking You,

Yours faithfully,

For **Power Exchange India Limited**

ANIL VITTHAL KALE

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Anil V. Kale
Head – Strategy and Regulatory

PXIL suggestions and observation on Staff Paper on "Capacity Market for Electricity in India"

The Ministry of Power, Government of India ('MOP') in consultation with Central Electricity Authority ('CEA') has notified 'CEA (Guidelines for Resource Adequacy Planning Framework for India)' on 28.06.2023. The guidelines enable Discoms to ensure sufficient tie-up of capacities to meet Resource Adequacy ('RA') requirements over different time horizons, i.e. Long-term providing 10-year look ahead and Short-term providing 1-year look ahead.

RA planning ensures availability of adequate generation capacities, round-the-clock to reliable serve demand under various scenarios, thus RA lays down the optimal capacity mix to meet the projected demand at least-cost-optimally by considering different types of generation resources.

In current electricity market, the discoms procure capacities by inviting bids using two-part tariff structure, i.e. fixed charge and variable/energy charge. The fixed charge is fully recoverable at normative availability of 85% and the energy charge is recovered based on day-ahead/real-time scheduling of power. With large scale integrations of renewables, the existing conventional generators are constrained to run at lower PLF resulting in non-recovery of energy expense due to high incremental cost of generation. This situation arises because the scheduling/dispatch rights of such contracts/generation plants do not go through the markets and rests with buying discoms. On the other hand, Discoms pay fixed charge for capacities that do get scheduled due to high energy charge and are burdened with capacities whose utility is negligible during non-peak hours.

To overcome this situation, introduction of capacity market is both win-win for generating asset, Discom/buyer and the electricity eco-system, as under:

a. Capacity gets contracted through an auction run on power exchange assuring fixed charge for generating asset. Discoms participating in capacity auctions need to pay fixed charge irrespective of its utilisation
b. Discoms retain the right to schedule power prior to opening of DAM / RTM auction window, in case, the power is not scheduled, then the generator is free to bid in DAM/RTM
c. To prevent misuse/gaming, such generators be mandated to participate and get cleared during notified peak time blocks by submitting price taker bids for notified peak time blocks. Failure to clear will result in heavy penal charges being multiples of fixed charge discovered in auction

Capacity market is created in addition to existing 'energy only' electricity markets, herein only capacity is remunerated and traded. Capacity markets can be considered as 'generation resource adequacy' needed to ensure supply meets demand at any given point of time

PXIL would like to submit the following clause wise comments / suggestions on the draft regulations.

1. Comments solicited on the proposals as outlined in this paper for:

a. Capacity Market for RA / Capacity Obligation
b. Reserve Capacity Market and
c. Secondary / Short-term Capacity Market

Suggestions:

PXIL welcomes the proposal to introduce Capacity Contract in Power exchange platform as the Capacity market contracts ensures adequate capacity for the energy market, the electricity price remain under self-control thereby benefitting Discoms and consumers at large.

The Capacity market framework will ensure availability of generating assets in time-blocks of system need, while at the same time, clearing and settling capacity market contracts terms, dispatch and pricing to the coupled DAM / RTM after roll-out of market coupling under provisions of Regulation 37 to Regulation 39 of CERC (Power Market) Regulations, 2021 and its amendments.

PXIL has following suggestions:

A. Capacity Market for Resource Adequacy / Capacity obligation

i. Market to for Resource Adequacy / obligation should be implemented right-away
ii. The contract duration of 15-years would ensure bankability of the project and provide comfort to lenders
iii. Option-2 is best suited
   - As it invites investments to be made based on 'total cost i.e. capacity charge + variable charge' auction invited by Discom on power exchange
   - Discoms can schedule until commencement of bidding window in DAM / RTM
   - Both Discoms and Generator submit bids in DAM/RTM
   - The Power exchange settles the transaction, i.e. pay-in/pay-out, at MCP
   - The Discom and Generator undertake bilateral contract settlement, based on difference between MCP and 'total cost' discovered in above auction
   - This ensures optimal dispatch of generation, adequate availability of capacity in the market, security of supply for discom enabling market driven control of prices

It is submitted that Option-2 is preferred over Option-1 as 'bilateral contract settlement' enables mitigation of price risk to both Generator and Discom.

B. <u>Reserve Capacity Market</u>

i. This market mechanism requires States to demonstrate reserve procurement and its compliance. NLDC is mandated to identify State-wise shortfall of reserves to initiate a combined procurement of reserves on power exchanges

ii. The combined demand would then be used to discover capacity charge based MCP which shall be the intersection of demand with aggregated supply curve

iii. The charges to be quoted by generator for participating in this market are – capacity charge and offer price (i.e. energy charge for offering capacity)

iv. The NLDC may schedule and dispatch from generator resulting in payment of 'capacity charge' and 'offer price'. In case NLDC schedules but does not dispatch, the generator receives 'capacity charge' and a regulated 'commitment charge' to be determined by Hon'ble Commission

v. In case capacity is not scheduled, the generator is allowed to participate in DAM/RTM resulting in payment of 'capacity charge' from NLDC and 'MCP' from DAM/RTM

vi. The capacity to be recovered proportionately from reserve deficit States under provision of IEGC and 'offer price'/commitment charge' to be paid from DSM&AS pool under provision of DSM regulations

The contract duration of 1 years and auction frequency of once in a year is welcome step as it meets the Short-term Resource adequacy requirement of one (1) year prescribed in RA guidelines.

C. <u>Secondary /Short-term Capacity Market</u>

i. The Secondary / Short term Capacity Market should be implemented right-away as it enables unused/unscheduled capacities that's unable to enter markets due to decentralised/silo framework of PPA contract arrangement and scheduling

ii. The contracts would be notified as 'rolling quarterly contracts' with maximum duration of up to three (3) months ahead, it may thus reflect calendar quarters for the year, i.e. Q1, Q2, etc.

iii. Option-1 is recommended for introduction as it has twin benefits of restricting Discoms liability to payment of 'capacity charge', enables increase in sell side participation in DAM/RTM resulting in softening of clearing price in DAM / RTM.

iv. The MCP eliminates 'free rider' phenomena and ensures optimal dispatch of generating assets

It is submitted that 'Option-1' is preferred over 'Option-2' as Sellers have an oppurtunity to trade their capacity in 'Option-1' where as 'Option-2' restricts revenue realisation for Sellers as Buyer may schedule power prior to opening of auction in DAM and RTM.

Roadmap for Development of electricity market in India

PXIL submits that MOP in report titled '*Development of Electricity Market in India*' with an objective to create an efficient, optimal and reliable market framework to enable the energy transition and integration of renewable energy into the grid. The report identifies market elements to be implemented in three phases i.e. within one year from now, medium-term i.e. within 1-2 years from now and long-term i.e. two years and beyond from now.

At Chapter 4, Clause 4.8 to 4.13, MOP report prescribes a road-map to introduce capacity contracting by recommending short-term, medium term and long-term measures.

> *"4.8. The Group acknowledged that steps have been initiated by CEA for introducing a Resource Adequacy framework in India. While this gets rolled out from 2023 onwards, an accompanying framework for capacity markets would be required. Taking the above into account, the following possible options for short-term and long-term capacity markets and implementation roadmap were evaluated in Indian context:*
>
> *4.9 and 4.10: Possible variants of short-term capacity markets with an analysis of key aspects*
> *4.11: The Group recommends the below roadmap for the introduction of short-term capacity markets*
> *4.12: Possible variants of long-term capacity markets with an analysis of key aspects*
> *4.13: The roadmap for the introduction of long-term capacity markets*

The MOP report establishes a roadmap for utilisation of Power exchanges as the central piece for development of robust, transparent and liquid Markets in Electricity

Conclusion

For reliable, secured, and economic operation of the electricity grid, resource planning is an essential exercise. The most important function of Capacity Markets is 'generation resource adequacy' which, in power markets is the ability of the system to meet any level of power demand, and peak demand always. The Capacity markets have to work in tandem with Energy markets to ensure investments materialise to build adequate capacity, to meet consumers requirement of reliable power supply.

With large scale investment and integration of renewables, existing and/or prospective fossil fuel generators will have no incentive to increase capacity / invest further due to falling PLF's leading to financial distress. Hence, in a Capacity market, when capacity gets explicitly traded, it incentivises developers stay in the market and provide capacity/reserve.

The existing 'energy-only' Contracts does not attract 'adequate investments' as it does not solve the problem of 'missing money' (i.e., lack of sufficient dispatch during life-cycle of plant to cover fixed costs). The short term 'energy only' market would be suitably complemented with optimal mix of longer duration 'Capacity Market Contract' to maintain equilibrium of prices during peak/stressed time blocks.

The staff paper marks a defining moment in the evolution of India's power market structure as future developments in the market is made by positioning 'power exchange' as the central piece of market evolution to attract future investments.

Future development in power sector is dependent on increasing the scope of market-based electricity transaction in the country, in this regard 'Capacity Market Contract' will increase depth in power exchanges as market linked dispatch/procurement of power becomes a reality. Such an evolution will enlarge the role of power exchange as 'Market Infrastructure Institution' in electricity space.
