Azure Power

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To,

Shri Harpreet Singh Pruthi,
Secretary,
Central Electricity Regulatory Commission,
6th, 7th & 8th Floors, Tower B, World Trade Centre,
Nauroji Nagar, New Delhi-110029

Subject: Comments on CERC Staff Paper on Stakeholder's Suggestions for Modifications in the GNA Regulations.

Dear Sir,

We wish to introduce Azure Power India Private Limited ("**Azure Power**") which is among the top growing renewable IPPs and sustainable development company in the country. Azure is in the business of setting up Renewable energy projects and has more than **3 GW+** of operational and under construction projects spread over multiple states across India.

We appreciate the opportunity to provide feedback on the CERC staff paper addressing stakeholder suggestions for modifications in the GNA Regulations. The proposed measures can enhance transmission asset utilization and improve grid stability, especially with increasing VRE penetration. However, we believe that certain aspects of the proposal warrant additional review to ensure practical implementation. Below are our detailed comments:

1. Clause 8.3 (i) which refers "*Should existing solar generators (without storage) also be given the option to install storage for utilisation of connectivity/GNA during non-solar hours by submitting an application to CTUIL within* ***three months*** *and installing within a* ***period of 24 months****, failing which connectivity/GNA during non-solar hours shall be utilised to grant another connectivity through the same transmission system as 'non-solar hour connectivity' to another applicant, based on the other RE resources or Storage plant, for injection of power during non-solar hours?"*

a) <u>Three-month Application Window for availing the benefit of Storage Installation with existing solar connectivity</u>

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The proposed three-month window for existing solar generators to apply for storage-based connectivity during non-solar hours appears short. This compressed timeline may lead to challenges, including:

- **Technical Assessment:** Existing solar plants will need to undertake a detailed technical and financial assessment of the feasibility of installing energy storage systems (ESS). This includes studies related to site layout, integration with existing infrastructure, and operational feasibility.
- **Land availability –** Options to evaluate installation of addition solar/wind projects for meeting the charging requirements for the BESS.
- **Financial feasibility –** it will take time to obtain quotes from BESS + wind OEMS to evaluate if the most optimal option at each interconnecting point is standalone BESS or BESS + wind project to supply energy during non-solar hours
- **Offtake –** Currently there is no established market (tenders/Merchant market) to give assurance of offtake for the Non solar supply through BESS. The market building for this power will take time to evolve and create enough depth for developers to have assurance of offtake and financing the Project for non-solar hours Power supply.

Suggestion: We recommend extending the application window to **12-18 months** to allow sufficient time for existing solar generators to evaluate the feasibility, secure necessary internal approvals, and make an informed decision regarding ESS integration.

b) <u>Twenty-four-month Implementation Timeline for Storage Installation</u>

The current proposal mandates that existing solar generators must install storage within 24 months of submitting the application. This timeline is ambitious, particularly for large-scale solar projects, and may lead to rushed implementation or non-compliance. Specific concerns include:

- **Route to market:** evaluate to supply power during non-solar hours eunder PPA called by various REIAs. For securing long term power sales each developer would have to participate in various tenders and get awarded LOA and execute PPA before any substantial investment can be made in the Project to supply power during non-solar hours
- **Supply Chain Delays:** Global supply chain constraints, particularly for batteries and other ESS components, could lead to delays. Additionally, procurement and delivery timelines for storage systems, especially in large capacities, can easily exceed 24 months.
- **Project Financing and Contractual Adjustments:** Raising capital and finalizing agreements with EPC contractors and technology providers, coupled with discussion with existing lenders for the existing solar Project, can require more time.
- **Regulatory Clearances and Approvals:** Adding ESS may require additional regulatory approvals, including environmental, land use clearances and NoC from the existing DISCOM/offtakers for the existing solar projects which can be time-consuming and vary across states.

Suggestion: We propose extending the implementation timeline to **36 – 48months months flexible with developer as per the PPA (offtake) timelines**, considering the complexities involved in storage deployment and grid integration.

2. Clause 8.6 which refers "*An applicant should take Connectivity for a quantum that it wishes to utilise. It is proposed that to ensure the optimal utilization of the transmission system,* ***a minimum annual capacity utilization, i.e., 50%, for RHGS may be mandated****, failing which the* ***underutilized capacity of the Connectivity may be reduced****, effective 1st October 2026. Alternatively, the quantum of Connectivity equal to the average of maximum injection in any time block of a day over the year (first year after the declaration of COD) may be allowed to be retained by the Connectivity grantee, and the balance quantum of the* ***part of the Connectivity may be revoked*** *(with corresponding Conn-BGs to be returned). Connectivity on such vacated capacity may be granted to other entities".*

a) Minimum Annual Capacity Utilization

- Enforcing a uniform minimum 50% annual capacity utilization may be restrictive for RHGS, given the variability in solar and wind generation due to seasonal and weather-related factors. To achieve the 50% utilisation factor substantial oversizing is needed which may not be required by various offtake contracts and would expose the developer to excessive market price risk (Merchant market). Higher open market exposure also increases the financing interest rates. All the above factors combinedly will lead to higher tariffs for Wind/Solar Project.
- Energy Clipping – to meet the 50% utilisation the developer will have to seek connectivity much lesser than the installed capacity which will lead to clipping of energy during peak generation hours on a daily basis. Approximately ~ 10-20% energy would be clipped which will lead to waste of energy and increase in tariff of power sold to recover the cost of wasted energy.

Suggestion: It is recommended that the minimum CUF requirement be specified on a tender-by-tender basis, considering factors like resource availability, location, and project design. This approach provides flexibility and allows the developers/generators to set CUF targets that align with the technical and operational characteristics of the specific project, ensuring more accurate and achievable utilization benchmarks.

b) Revocation of Connectivity for Underutilization

- **Impact on Long-Term Planning:** Revoking underutilized capacity after a year could disrupt long-term planning for renewable generators, especially for hybrid systems that need flexibility to adapt to changing grid requirements or expand over time.

Suggestion: Consider introducing a grace period or review mechanism before capacity is revoked, allowing RHGS entities to justify underutilization due to operational or external factors.

3. Clause 8.3 (e) which refers *"It is proposed that the existing connectivity grantee, which was solar-based REGS, shall be* ***mandated to share the dedicated grid infrastructure*** *(terminal bay and the dedicated transmission line) with payment of charges for the dedicated transmission infrastructure (as mutually agreed or as determined by CERC in case of disagreement). For solar hours, the new grantee shall be allowed to schedule power if the transmission system is available after scheduling power of*

existing solar REGS. The hours other than solar hours shall be treated as non-solar hours. It is clarified that the existing solar REGS can also seek GNA (non-solar)/connectivity at par with the new entity."

a) Sharing of Dedicated Transmission Infrastructure

While the proposal to share transmission infrastructure is a step toward efficient resource utilization, certain aspects require clarification to safeguard existing investments and ensure fairness:

- Implement a **commercial compensation mechanism** for existing connectivity holders, reflecting their investment in evacuation infrastructure and rights to develop future projects at the same interconnection point.
- Ensure **continued connectivity rights** for the existing holder until the useful life of the infrastructure, even post-PPA expiry, to maximize asset utilization. Right to use to be granted to the new allottee for a specific period only (e.g.12yr/15yrs) rather than giving the allocation for a non-definitive time.
- Require CTU to obtain time-based **consent from existing IPPs** regarding the credentials of potential allotee for connectivity sharing to promote trust with existing project lenders.

b) Proposal for Solar-hour and Non-Solar hour Connectivity Rights

We agree that the proposal to allocate connectivity rights based on solar and non-solar hours will lead to more efficient use of the transmission system. However, the following aspects need further attention:

- **Solar Hours Definition:** We urge Grid India to publish a region-specific definition of solar hours, considering seasonal variations and local solar irradiance patterns. This will provide clarity to all stakeholders.
- **Hybrid Projects:** For hybrid projects (e.g., solar + wind or solar + storage), the methodology for calculating connectivity during non-solar hours must be explicitly defined. We support the inclusion of such projects but recommend clearer criteria to avoid operational uncertainty. Limit proposed non solar hour connectivity to solar installed capacity.

4. Broader Regulatory Considerations:

a) Utilization of Connectivity by Affiliates

Permit the utilization of connectivity by the parent company, subsidiaries, or affiliates of the applicant, enabling flexibility in operational planning and efficient use of resources.

b) Provisions for Capacity Expansion and Source Flexibility

While the existing GNA regulation includes provisions to add capacity within the quantum of connectivity granted. However, it lacks enabling provisions for change in generation source or enhancing installed capacity within connectivity for new projects or PPAs. This is required to ensure alignment with evolving market dynamics and project requirements. As per the current Project financing norms of the lenders each project needs to be set up in a new SPV/separate SPV. The use of

connectivity by an affiliate company is needed for getting the financing for the new non solar hour Projects.

We appreciate CERC's proactive steps towards enhanced grid flexibility and stability. While the proposed GNA Regulations represent a significant step forward, incorporating the above suggestions would ensure a smoother transition and greater participation from existing and new renewable energy stakeholders.

We look forward to engaging further on this matter and remain available for any clarifications or discussions to help shape a sustainable and resilient regulatory framework for the renewable energy sector.

Sincerely,

For Azure Power India Private Limited
Kritika Baralia (Vice President – BD & Commercial)

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