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Comment Submission

For the kind attention of:

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Comments to CEA on the Draft Distribution Perspective Plan – 2030 (DPP-2030), released on 2nd February, 2024

Background

We want to thank the Central Electricity Authority (CEA) for this opportunity to comment on the Draft Distribution Perspective Plan, 2030 (DPP-2030).

In recognition of the importance of distribution infrastructure and services in meeting India's load through 2030, and to consolidate the plans of discoms across the country to augment distribution systems through 2030, the DPP-2030 lays out a valuable roadmap for distribution growth. We commend the CEA for developing this report and appreciate the chance to contribute the Regulatory Assistance Project's (RAP's) insights to advance this effort.

Our interest is solely to provide assistance to the CEA and Indian power sector decision-makers as you seek, through reform and regulation of the country's electricity systems, to make it more efficient, achieve important public policy goals, and to contribute to serving the public good in India. We trust that you will find our observations below to be objective, independent, and tailored to support CEA's guidance on distribution.

RAP's comments and suggestions are as follows:

1) **Planning – Drivers for New Investment**:

Section 3.1 discusses the drivers for DISCOM investments including Load Growth, Smart Grid needs etc. While the list is good, the Plan should also consider other drivers such as:

a) Replacement of Aging Infrastructure: A significant amount of the Distribution infrastructure is likely aged and needs to be replaced. Instead of simply waiting for a piece of equipment to fail for it to be replaced, it would be prudent to consider a planned approach for systematic replacement of the infrastructure, for efficiency and increased reliability. There are several approaches for a systematic replacement including those based on an assessment of risk factors.

b) DER Penetration: A significant need for augmentation of the DISCOM network would be needed to accommodate the immense of Roof-Top-Solar (RTS) that is contemplated, especially in light of the recent goals announced by the Prime Minister. The distribution system historically has been designed to accommodate a one-way power flow. But with increased penetration of Distributed Energy Resources (DER) including RTS, the need to augment the distribution system is increased to accommodate the power flow from the resources into the distribution network.

c) Climate Change: The DISCOM design criteria needs to be re-examined in light of climate change impacts (e.g., extreme heat for sustained periods) and the new criteria will likely increase the need for more investments in the distribution infrastructure.

d) Resilience: As the electric supply mix moves to more intermittent resources, and with climate change impacts on the system, there would be increased resilience needs that may increase the need for distribution infrastructure (for example, the increase in adoption of micro-grids, local storage etc).

e) New Load Growth: It is unclear if the demand projections included potential load growth from increased penetration of electric vehicles, electrification of the building sector, and from electrolysis, all driven by decarbonization goals. Further, there is proliferation of data centres and crypto manufacturing that is driving up electric demand significantly. These should be explicitly accounted for[1].

2) Specific Reforms for Distribution Sector:

Section 5.2 contains numerous recommendations for reforms. Comments on a few of them are offered below:

- **Govt Subsidy through Direct Benefit Transfer (DBT):** The section discusses DBT as the government giving the subsidy directly to the consumer as a preferable approach rather than flowing it to the utility. If a policy decision is made to move in this direction, then steps need to be taken to ensure that the customer pays the DISCOM the money he owes. If not, there is a risk that DISCOM will not get the money from the government or the customer and that would adversely affect DISCOM financially.

- **Time of Day (TOD) Tariffs**: The section also nicely discusses the benefits of TOD tariffs. However, it prescribes that the tariff should be 10-20% lower during solar hours and 10-20% higher during peak hours and should be adopted by all DISCOMs by April 2025. While the intent and direction are right, such a granular prescription of the level of the tariff should be left to the State Electric Regulatory Commissions (SERC). The

[1] For example, see the demand forecast of New York Independent System Operator, explicitly accounting for such load growth in its annual laod forecasts. See page 15 summary table at: https://www.nyiso.com/documents/20142/2226333/2023-Gold-Book-Public.pdf

SERC should set the tariff based on DISCOM load shapes and underlying costs, economic, and public policy principles. The percentages prescribed here may or may not be the right figures.

- **Inter-Class Cross Subsidies**: The section rightly aims to reduce the existing inter-class cross subsidies in tariffs. It prescribes that "the tariffs for all categories of consumers should be brought within the limits of **±**15% of average cost of supply." The specific metrics and determination should be left to the SERCs. Ideally, the tolerance band is not based on the average 'cost of supply,' but should be based on the 'system average rate of return' vs 'class rate of return.' These are derived from cost-of-service studies. Some classes provide a higher rate of return, and some classes provide lower class rate of return compared to the average level. For fairness and efficiency, the DISCOMs should modify the tariffs whereby all classes provide a return closer to the system average. The methodology and transition should be left to the SERCs to approve.

- **Penalty on Load Shedding:** The section correctly tries to make the customer whole by compensating him/her for loss of service due to company "default in performance." In investor owned DSICOMS, such penalties typically come out of profits for shareholders. Given that most DISCOMs are government owned and there are no shareholders in the DISCOMs, it is unclear who pays for the penalties. If the penalty amount is simply paid by other customers, then it would not influence the DISCOM behavior to improve service and would be considered unfair to other customers. There should be approaches adopted to affect the DISCOM behavior through incentive mechanisms as discussed in the next section.

- **Timely Filing of Tariff Petition by DISCOMs to SERC:** The section prescribes that DISCOMs should file tariffs in August-September each year so SERCs can act by the beginning of next financial year. Timely filing by DISCOMs and approval by SERCs is a necessary action. However, there should be consideration by SERCs of adopting a 'Performance Based Ratemaking (PBR)' approach in setting DISCOM tariffs, as opposed to simple cost-based tariff setting. The PBR approach relies significantly on the use of rewards/incentives and penalties to affect DISCOM behavior to drive system efficiency and improve reliability and customer service. There should be a tariff methodology adopted by each SERC as to how they will set tariffs and the process for DISCOM filing, public involvement, and SERC decisions.

3) **Best Practices in O&M**:

Section 6.3 discusses some of the best practices that DISCOMs should incorporate in their O&M plans, and these are good practices to adopt. One more practice to consider is an assessment of the state of health of the DISCOM equipment on a periodic basis.

For example, in New York, DISCOMs must *inspect* all their facilities, at least once every five years (it is staggered and done every month) [2]. Based on the findings of the inspections, assets are categorized as needing immediate attention up to needing a fix within a five-year systematic replacement plan. This data also helps with the 'root-cause' analysis. Critical examination of causes of power outages and a root-cause analysis is another good utility practice that should be considered if it is not already done. Among other variables, these two would inform the development of capital budgets for DISCOMs.

Like the best practices for O&M there should be best practices for capital budgeting given the limited capital budget funds available for deployment by the DISCOM. It should be based on risk mitigation among other criteria. The SERC should have the responsibility to oversee the DISCOM capital budgets as the costs associated with the capital spending affect tariffs. Further, the capital budget decisions clearly affect system reliability.

4) **Role of Energy Efficiency (EE) and Demand Response (DR):**

These are acknowledged and discussed, but it is unclear if they made their way into demand projection (reduction of energy and peak demand in 2030). EE is mentioned in Section 6.3.3 as part of DSM toolkit but could use more emphasis. DR is mentioned in Section 7.1.2 as helping with reducing balancing costs, and Automatic DR is discussed in Section 7.11 as part of benefits of smart grid deployment. Clearly in a Report that is already 177 pages, perhaps there is not much more room to discuss these, but the value EE and DR bring to the customer and the system should be emphasized more.

We hope the comments above assist with finalization of the DPP-2030.

Once more, we wish to applaud CEA for developing this useful publication, and we lend our support to the plans articulated therein.

Thank you for this opportunity to comment. If we can be of further assistance, please don't hesitate to ask.

Sincerely,
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[2] See New York Public Service Commission Order instituting Safety Standards and therein the Inspection Program requirements, issued January 5, 2005, at https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={41FC64C3-1A22-495E-9468-7285FBBB0930}. Although parts of the Order have been revised over time, the thrust of the inspection program remains.