Renewables, Open Access and the future of Retail Competition

Roundtable on Renewables and Open Access in India
Organised by: Prayas (Energy Group)
7th September 2021
Background and Context: Extent of sales migration

- Sales migration (OA+ Captive) as a share of total DISCOM Non-Agricultural Sales at 26% (FY19)
- Reported migration is dominated by Captive, except in Tamil Nadu.
- Estimate does not include migration due to rooftop solar (6.8 GW as on Dec, 2020)

Source: PEG compilation from various tariff orders, additional surcharge petitions and CEA general review. *The OA numbers for Tamil Nadu are for the year 2019-20, as 2018-19 numbers are unavailable.
Captive migration due to price advantage

- OA consumption ↓ across the states (except Gujarat and Haryana)
- ↑ in captive → CSS exemption, non-levy of AS
- > 30% savings for captive (compared energy charges)
- Savings for OA negligible and ↓ → 4 p.p ↓ in 3 years

Assumptions: Indicative analysis as fixed charges have not been considered. Base price for OA & Captive for both years at Rs. 3.5/unit. Includes impact of cross subsidy surcharge, additional surcharge, electricity duty, parallel operation charge, wheeling charge and intra-state transmission charge capture while estimating savings for an industrial consumer with 70% load factor, connected at 33kV in each state. This analysis does not include concessions for RE which would increase savings.

Source: PEG analysis based on data from tariff orders and other regulatory orders from various states along with CEA data.
Increasing cost-competitiveness and growth potential of RE

<table>
<thead>
<tr>
<th>Year of Commissioning for Coal</th>
<th>Year of Bidding for Solar</th>
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<tbody>
<tr>
<td>2015</td>
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<tr>
<td>3.93</td>
<td>5.61</td>
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<td>2016</td>
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Source: Prayas analysis based on MERIT database, CEA documents, regulatory orders, Lok Sabha Q&A, MNRE Demand for Grants, SEC1 results and various newspaper articles

Acknowledging comparability issues, competitiveness of RE vs new coal is striking.

RE versus Coal
- Solar- modularity, low gestation, minimal price escalation risk
- Makes migration more implementable, lucrative

RE Captive Snapshot – FY16- FY19
- 22% growth in sales: All India level
- Maharashtra, MP, Rajasthan and Karnataka saw substantial increase

RE Open Access snapshot- FY16-19
- Limited Data Availability
- RE share in total Open Access ↑:
  - Rajasthan: 2% to 12%
  - Maharashtra: 7% to 18%
Levy of sales migration charges

Status of OA charges (FY16-FY19)
Based on analysis of 8 states
• OA charges: ↑ 15% p.a
• CSS +AS: Rs. 1.42 to 2.32 /kWh
• Tx + Wheeling → Rs. 0.10 / kWh ↑
No change in standby charge, PoC charge in many states.
Banking/ DSM not reflective of costs.

AS not just OA but also Captive

Legal Tenability for AS on captive
• HP: All captive (regs)
• Maharashtra: Group captive (Matter is sub-judice)
• MP: RE captive (order, draft regs)
• TN: All captive (DISCOM petition)

Assured levy in the future?
• Demand ↑ and muted thermal capacity addition,
• Backing down will ↓

Uncertainty around whether AS levy will be justified and assured

Cross-subsidy reduction to retain consumers

• Cross subsidy revenue → 5% of Average Cost of Supply (All India)
• Per unit cross subsidy revenue falling at 2% per annum
• States give industrial subsidy:
  • Punjab, Haryana, Mah.
• Industrial tariffs < ACOS
  • Raj, MP, TN

Approach unsustainable with ↑ ACOS
Objectives and Key Features:

• Promote purchase of renewables through open access and captive route

• Provide clarity on ways and means for consumers to purchase RE/ meet RPO

• Standardization of processes to avail open access

• Clarity on charges for open access and captive

Important aspects to reflect on:

• Applicability and jurisdictional challenges

• Lack of clarity in provisions

• Reduction in OA eligibility limit

• Provisions to address STOA challenges

• Framework for RE purchase, banking

• Treatment of OA charges

• Centralised nodal agency and registry
Are Central Government Rules the right way to achieve changes?

**Jurisdiction under Electricity Act**

- Rules under Section 176 (2) (z)
- What about existing ERC regulations and powers vested to regulators under Section 42 and Section 86?
- Many proposed changes will affect sales migration, tariff design, revenue recovery by DISCOMs
- States may challenge rules → Possibility of long litigious process before policy implementation

**Framework for the way forward**

- State agencies bear the risk → decision making to be left to them
- Accelerated adoption can be strongly urged/‘nudged’
- Inspire a ‘race to the top’ given need to ↑ industrial demand

**Harmonious changes required across legal, policy and regulatory instruments**

- Amendment of the **Electricity Act, 2003**
- Discussions with State decision makers
- Provisions in **NEP, Tariff Policy, new OA policy?**
- Guiding documents to facilitate change in state sectors
- Change in **model regulations**
- SERCs urged to adopt changes based on deliberative discussions
- Incentive based **scheme** by central government
- For reaching specific milestones, ‘grand bargain’ for participation
Lack of clarity in provisions (some examples)

1. Levy of CSS (Rule 9 (a))
   CSS for green OA consumers purchasing from a generating plant using RE shall not be increased during 12 years from date of commissioning by more than 50% of surcharge fixed when open access is granted

2. Applicability of rules for Captive
   Entity means any consumer who have contracted demand/ sanctioned load of 100 kW or more except for captive consumers (Rule 2 (b))
   There shall be no limit of supply of power for the captive consumers taking power under green open access (Proviso 1 of Rule 5)

3. Applicability of Uniform RPO (Rule 4 (1))
   There shall be uniform Renewable Purchase Obligation, on all obligated entities that is- the distribution licensees, open access consumers and captive consumers, from the date of notification of these Rules

4. Green/ Renewable (Rule 2 (c))
   “Green energy” means electrical energy generated from renewable sources of energy;

- Onus on consumers?
- What about PX purchase?
- Accounting clarity for DISCOM

- Can consumers below 100 kW avail captive?

- Uniform RPO across states/entities?
- RPO changes annually for captive like DISCOMs? (Unlike 2019 MoP clarification)

- Is large hydro (recently commissioned/ old) counted as green?
- What are the implications?
Five ‘C’ Changes for RE uptake by C&I consumers

Clarity
- Captive Rules Amendment
- Transparency, simplicity in Application process
- Treatment of BTM systems, demand aggregators

Certainty
- Charge (fixed for medium term)
- Retrospective applicability
- Adequate adaptation time before major changes

Compensation
- Banking → block-wise valuation
- Revision of standby charges
- Net metering charges
- Seasonal variation in ToD charges

Convergence (over time)
- Open Access and Captive
- LT/HT in terms of eligibility
- Removal of policy concessions

Choice
- Open Access on DEEP, OTC Platforms, G-DAM, G-TAM
- Between net/gross metering, net feed in, BTM
Reduction in OA eligibility from 1 MW to 100 kW for REOA

Long road to going below 1 MW

- Since 2008, very few states have OA Limit below 1 MW
  - Uttarakhand, with 100 kW, MP draft – 500 kW
  - Limit intrinsically applicable on captive in many states (exceptions like Guj.)
- Medium/ Small enterprises do not have access to market options despite compelling price advantage
- Shift is techno-economically viable → tariff increase, SEM cost reduction

Potential challenges

- With smaller consumers, nature of open access regulations need to be re-evaluated
- One time change without time for adaptive measures will impact DISCOM
- No clarity on captive

Suggested Approach

- Extending applicability to all Open Access, not just RE
- Phase-wise reduction in threshold → 500 kW in FY22, 100 kW by FY24
- Size based differentiation in application scheduling and other processes: 0.1 to 0.5 MW | 0.5 - 1 MW | > 1 MW
- Provision of clarity for captive threshold/ limit (same as open access limit)
No provisions to address challenges due to short-term open access

The challenge:
— Opportunistic switching $\rightarrow$ Uncertain demand $\rightarrow$ DISCOM procurement remains a challenge
— Risk being borne by regulated consumers of DISCOMs by way of ↑ in cost-plus tariffs
— Challenge could be significant with reduction in OA limit

What can be done?
— Duration of STOA to be minimum 1 year
— STOA less than 1 year only under contingent circumstances $\rightarrow$ high application fees
— Higher OA charges for repeat STOA applications (like in Maharashtra)
— Penal standby charges and better scheduling practices
— DSM mechanism for embedded open access consumers
— Seasonal and daily variation in ToD charges for DISCOM supply

Some reflections:
— One year contract does not limit participation in power exchanges $\rightarrow$ buyer can continue to participate in DAM
— Sharing of DSM charges can take place on a pro-rata basis
Options for RE Procurement → providing enabling framework

Clarity on multiple routes, enables various business models with focus on:

- **Own Generation**: Captive, BTM, Net/Gross Metering
  - OA: using generator, traders (including PXs)
- **Use of RECs**, Purchase from DISCOM, Purchase of green hydrogen

Need for clearer, enabling framework for new procurement options

<table>
<thead>
<tr>
<th>Behind the Meter Systems</th>
<th>DISCOM procurement</th>
<th>Green hydrogen</th>
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</table>
| **Proposal** → No capacity limit | **Proposed approach:**
  - Tariff → REPPC+ CSS+ Dist cost.
    - Inadequate
    - < APPC in Guj, Mh, TN
    - Contract: at least 1 year
  **Procurement allowed only if:**
  - Tariff: 5-10% > energy charges
  - RE purchase for RPO in excess of target | **Proposed Approach:**
  - RPO → Green hydrogen equivalent of electricity
  - Norms to be notified by CERC
  **Need for more detailing:**
  - Agency, Process → Monitoring, Certification
  - Accounting mechanism in RPO
  - SERC role |
Treatment of Open Access Surcharges

MoP Proposal:
- Ceiling on CSS ↑ for OA consumer for 12 years from RE generator COD
- Exemption from Additional Surcharge for RE OA
- Exemption from AS and CSS for Waste to Energy
- Standby charges as specified by the SERC

Changes needed in approach
- AS, CSS not sustainable with ↓ in cross-subsidy and ↑ in demand
- RE procurement should be based on economic proposition, not concessions
- Principles of certainty, convergence compensation:
  - Standby charged based on service provided by DISCOMs
  - OA charges: DISCOMs → assured revenue, Consumer→ certain charges
  - Over time → parity between open access and captive

Suggestion (through Act amendment or model regulations)
- Delink surcharge from cross-subsidy, backing down → fix @ Rs. 2.5/unit for 5 years
- ↑ duty on captive → revenue recovery at par with OA over time
- 3 tier standby charge
  - fixed monthly demand charge
  - Higher charge for planned/unplanned standby (like in Mh)
- No concessions on charges for RE
Banking

Proposal
- Banking on monthly basis
- Commission to fix banking charge
- Banking limited to 10% of annual consumption from DISCOM

Suggested Approach
- Banking on annual basis
- Subject to payment of banking charge
- Banking charge at cost on 15 minute basis rather than in-kind
- Restriction on banking → accelerate shift to BTM/ storage

Valuation of Banking Service

Monthly Banking Service Bill = \( \sum \) Drawal Value – \( \sum \) Injection Value

DISCOM merit order stack with indicative variable prices in Rs/kWh

<table>
<thead>
<tr>
<th></th>
<th>Price (Rs/kWh)</th>
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<tbody>
<tr>
<td>Must run</td>
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<tr>
<td>Must run</td>
<td>0.5</td>
</tr>
<tr>
<td>Must run</td>
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</tr>
<tr>
<td>Dispatchable thermal 1</td>
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</tr>
<tr>
<td>Dispatchable thermal 2</td>
<td>2.2</td>
</tr>
<tr>
<td>Dispatchable thermal 3</td>
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<td>Day Ahead Market</td>
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<td>Backed down unit 3</td>
<td>4</td>
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</tbody>
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From lowest to highest VC
The Proposal: Centralised nodal agency and standardisation of processes

Much needed process:
- Delays in application process constrain uptake
- Process complex with multiple approvals needed from multiple agencies
- DISCOMs, ERCs, STU and LDCs need to be on board for approach.

Provisions in the draft rules

Centralised application process
- Central nodal agency for green open access
- Centralised Registry → Single window application
- Application to be routed through state nodal agency

Deemed Approval for Applications to prevent delays
- Complete application uploaded by nodal agency
- Application deemed approved after 15 days
- Subject to ERC specified technical requirement

State Nodal Agency for RE-OA notified by SERC
- SLDC for STOA
- CTU/STU for LT/MTOA
- Centralised portal updated by these nodal agencies

Transparency and appeal process
- Denial of open access only with written order
- Denied applicant will be heard
- Appeal against nodal agency order → SERC
### Centralised single window clearance not just for RE OA
- Streamline process, reduce multiple application processes
- Provide flexibility → bundling, use of G-DAM, RTM etc.
- Extend to other applications → Net metering, banking

### Incentivise participation/standardisation
- Interface can be tuned to existing state regulation
- One-time incentive for centralised, standardised process
- Rs.5 k crore at All-India level
- Added incentive for 1 lakh applications processed

### Transparent and simplified process
- Applicant → track progress online
- National and state-specific statistics
- Reduce requirements, minimise interaction with multiple agencies

### Mechanisms to hold DISCOMs accountable
- DISCOM play role DOA in DOA consent
- Delays persist even with deemed approval
- Penalties? Simplified appeal process?

### Clarity on role of ERC
- Specify processes, adjudicate disputes, monitor trends, reduce risk
- Should ERC be agency for all OA appeals?

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Some suggestions: Centralised nodal agency, standardisation...2
THANK YOU
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