Renewables, Open Access and the future of Retail Competition

Roundtable on Renewables and Open Access in India

Organised by: Prayas (Energy Group)

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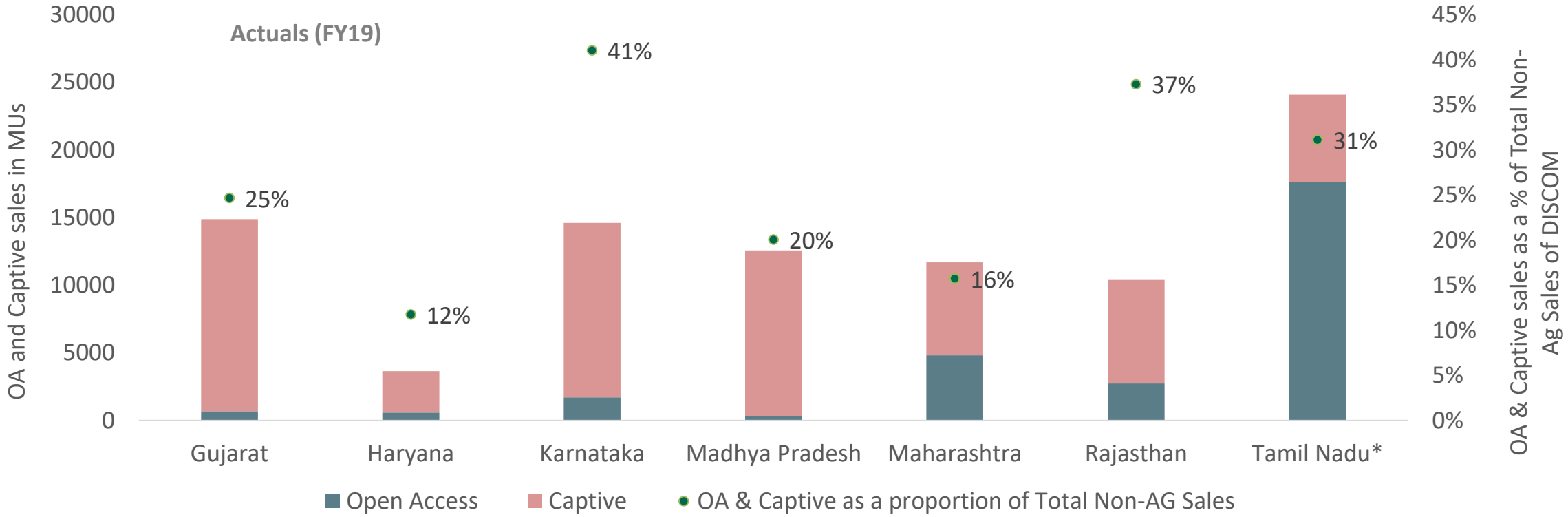
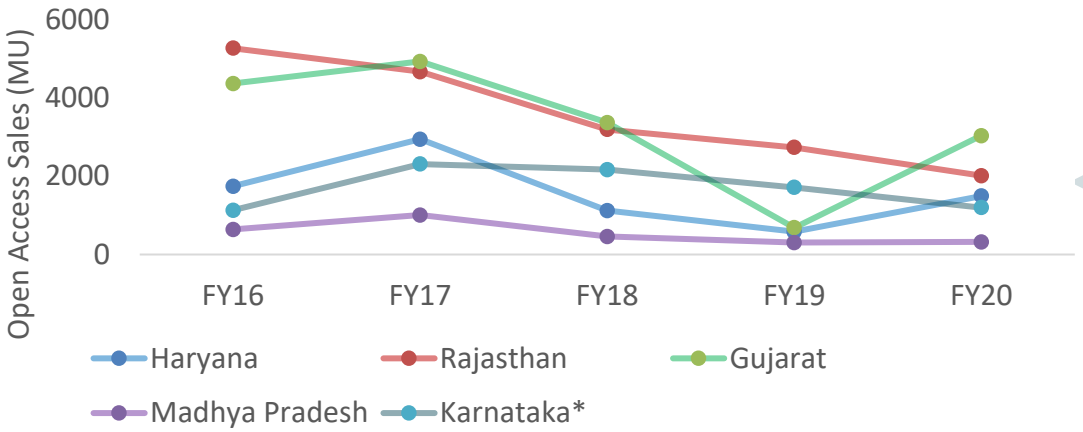
Background and Context: Extent of sales migration

- 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.*

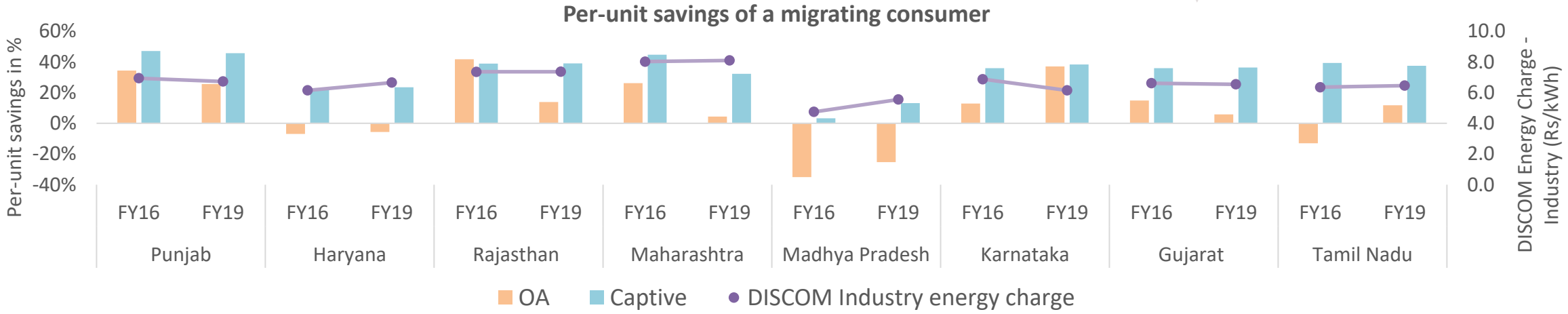
Captive migration due to price advantage



Source: PEG compilation from tariff orders and additional surcharge petitions.
Note: The OA numbers for the year 2019-20 for Karnataka are as per the RTI replies received.

- OA consumption ↓ across the states (except Gujarat and Haryana)

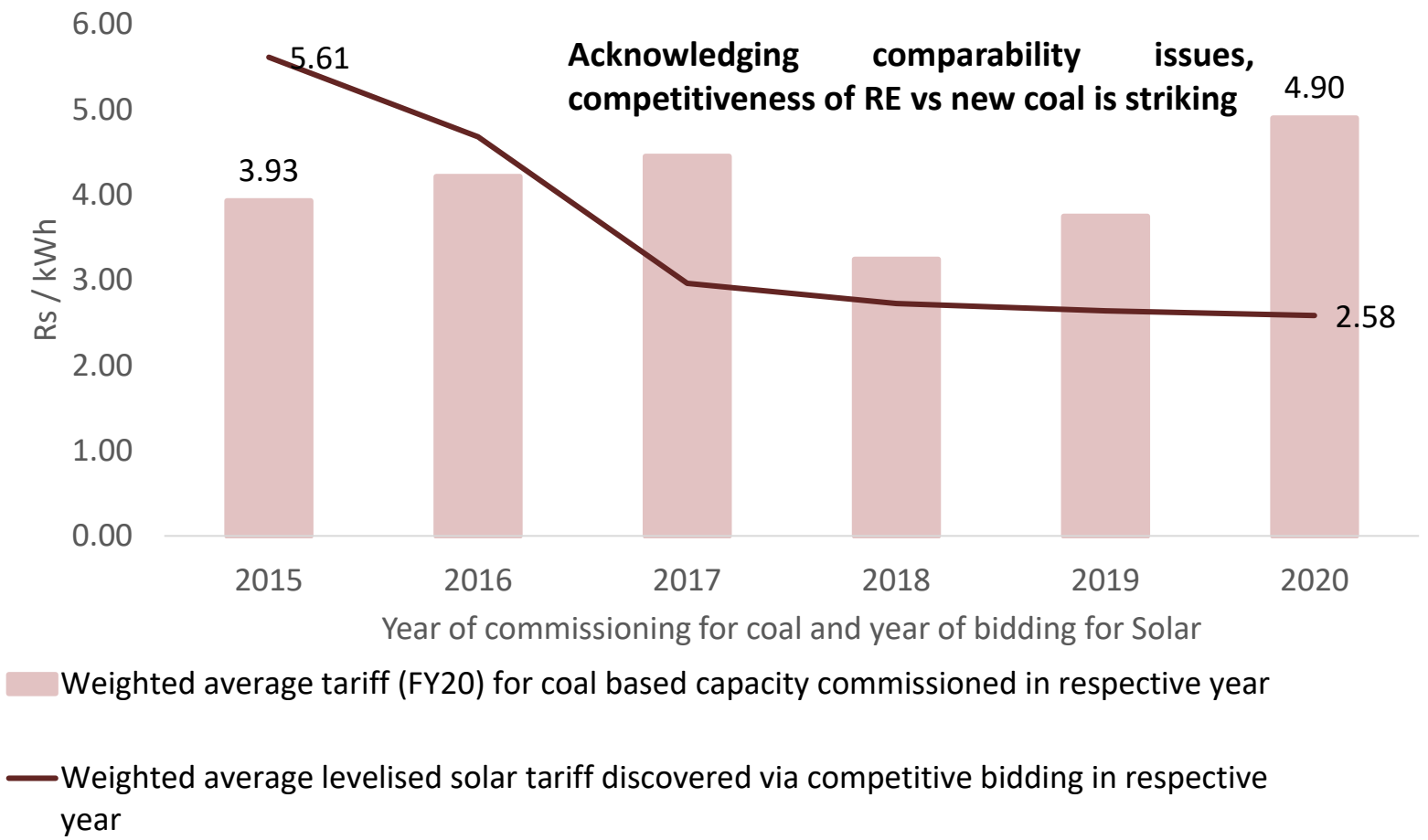
- ↑ in captive → CSS exemption, non-levy of AS
- > 30% savings for captive (compared energy charges)
- Savings for OA negligible and ↓ → 4 p.p ↓ in 3 years



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

Variable charge for recently commissioned coal power plants as on 9th August 2020 compared to average levelized solar tariffs discovered in the year of commissioning of the coal plant



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

Source: Prayas analysis based on MERIT database, CEA documents, regulatory orders, Lok Sabha Q&A, MNRE Demand for Grants, SECI results and various newspaper articles

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

Draft Green Open Access Rules,2021

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

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

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)

- Can consumers below 100 kW avail captive?

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

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

4. Green/ Renewable (Rule 2 (c))

"Green energy" means electrical energy generated from renewable sources of energy;

- 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 → Uncertain demand →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→ high application fees
- Higher OA charges for repeat STOA applications (like in Maharashtra)

Specific to STOA

- Penal standby charges and better scheduling practices
- DSM mechanism for embedded open access consumers
- Seasonal and daily variation in ToD charges for DISCOM supply

Applicable to all

Some reflections:

- One year contract does not limit participation in power exchanges → 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

Behind the Meter Systems	DISCOM procurement	Green hydrogen
Proposal→ No capacity limit **Suggested approach** — Specify min & max limit • 1 kW to connected load — Register BTM systems • Mh, Rajasthan — Levy monthly charges — akin to PoC/ Standby charge for captive	**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 = ∑ Drawal Value – ∑ Injection Value

Drawal → Value @ highest variable cost of the dispatched power (incl. any power bought from bilateral contracts/exchanges)

Injection → Value @ marginal cost of backed down power (lowest VC among backed down plants)

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

Must run	0.1
Must run	0.5
Must run	2
Dispatchable thermal 1	2.1
Dispatchable thermal 2	2.2
Dispatchable thermal 3	2.5
Dispatchable thermal 4	2.7
Dispatchable thermal 4	2.8
Day Ahead Market	3
Backed down unit 1	3.1
Backed down unit 2	3.3
Backed down unit 3	4

From lowest to highest VC

The Proposal : Centralised nodal agency and standardisation of processes..1

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

Some suggestions : Centralised nodal agency, standardisation…2

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?

THANK YOU
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