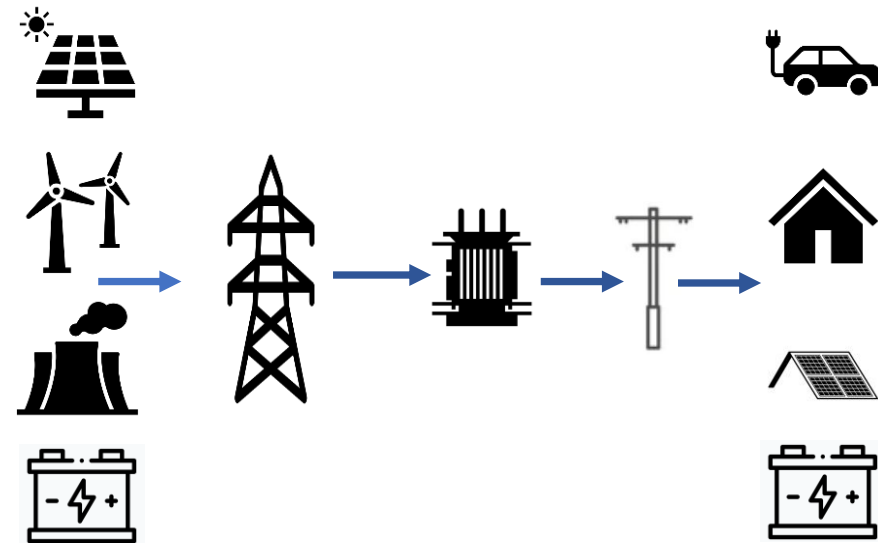


Regulatory reforms for distribution level flexibility

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Power system of the future



- Transformations in retail market are being brought by:
 - Electric vehicles
 - Demand response
 - Distributed generation
 - Battery storage
- Flexibility in all parts of the value chain will be the cornerstone of the energy transition.
- Leveraging the available technology requires
 - retail market transformation
 - shift in the roles of existing players
 - entry of new players in the market

How can regulations facilitate the required transformations?

Context

The electricity retail market will need to transform across various elements to leverage the technology advancements.

SEGMENT	EXISTING SITUATION	REQUIRED SHIFTS
Discoms	Network operators	Distribution system operators / active network management
Consumers	Passive consumption and price takers	Active engagement with wholesale prices with demand side responses Prosumers
New players	-	Aggregators Peer to Peer (P2P) platform providers Third-party storage providers
Infrastructure and technology	Non-interactive network, Meter interaction limited to between meter and discom	Smart grid, Information and communication technology, Energy management systems, interface, communication units, forecasting, dispatch
Electricity pricing	Fixed upfront prices	Energy prices linked to wholesale prices with regulatory safeguards for extreme situations. Fixed prices to recover infrastructure cost of utility. Flexibility contracts
Demand side management (DSM)	Implicit DSM with load shedding and ToD tariffs for some consumer segments	Expansion to explicit DSM with direct compensation for flexibility services

Relevance

- Expand renewable energy deployment
- Ensure business continuity by avoiding ‘utility death spiral’
- Adapt to the technological advancements

Business model of discom

- Existing business model of the discom is based on expanding sales
- Tariff regulations are aligned with the business model
- However, in a RE future, sales of discoms will decrease.

The current regulatory regime is primarily based on the principle of 'rate of return' regulation, where:

1. the discom obtains returns on its rate base,
2. the discom recovers **the aggregate** of its 'allowed' expenses from all its consumers, and
3. the revenue from sale of electricity is the primary source of income for the discom.



Solutions

- Fixed cost recovery through fees and charges
- Valuing services
- Customized for states
- Functional separation of wires and supply
- Policy direction

Key considerations

- How do the discoms make profit then?
- Whether DSOs should be profit making or revenue neutral?

Recommendations

- Policy direction at the highest level
 - Tariff policy
 - Resource adequacy
 - System operations
- Regulators revise the tariff regulations
- Build regulatory capacity
- Build discom capability

Thank You

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[Links/References \(If any\)](#)