

**Presentation
on**

Enabling Consumer Choice in Electricity Sector

17 November 2015



Idam Infrastructure Advisory Pvt. Ltd.

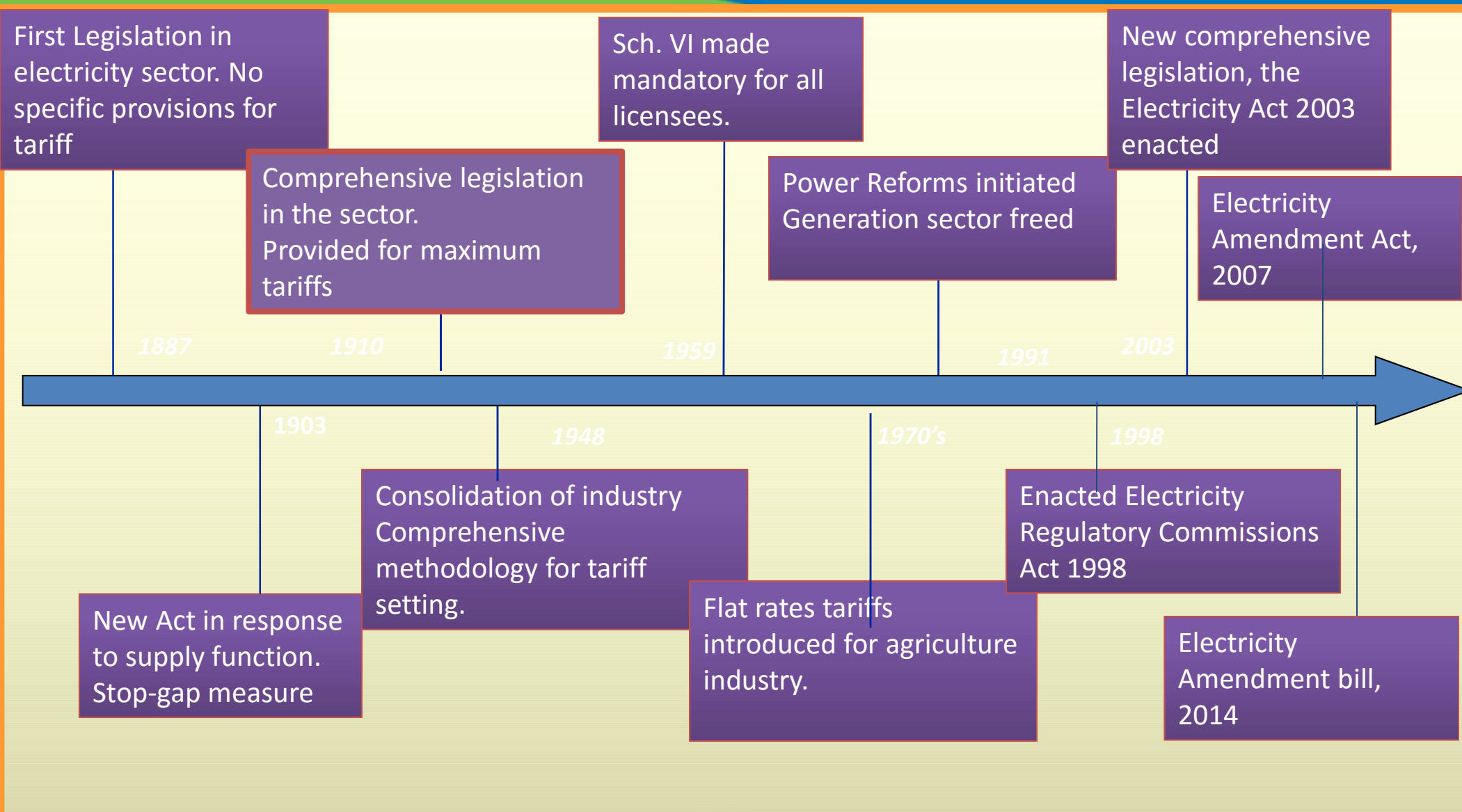
Agenda



- Regulatory Reforms in India
- Electricity Act 2003
- Competition in Electricity Market
- Case Study – Mumbai Competition Scenario
 - Background
 - One Mumbai One Network
 - Role of Stakeholder
 - Operational Aspects
 - Proposed Tariff Mechanism
 - Implementation issues

Regulatory Reforms in India

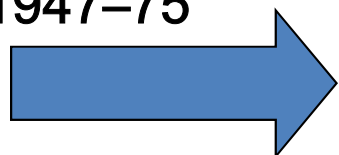
History of Regulatory Framework



Reforms Process

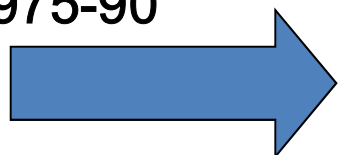


1947-75



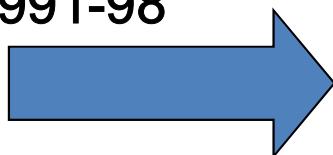
- Major growth,
- State govt led and ownership
- Creation of State Electricity Boards,
- Electricity (Supply) Act, 1948
- Acquisition of Private Distribution Co.

1975-90



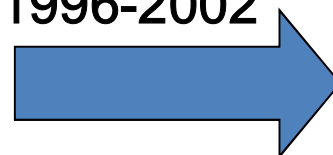
- Increased rural access (green revolution)
- Federal intervention in generation
- Formation of PGCIL and NTPC
- Skewed tariff

1991-98



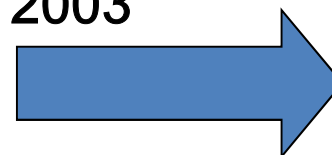
- IPP Era**
- Initiation of reforms
- Financial crisis - controversial IPPs
- High cost gen, high T&D losses

1996-2002



- WB Model**
- Attempt of un-bundling
- Privatization of distribution Co.
- Odisha/ Delhi
- Electricity Regulatory Commissions Act, 1998

2003



- Electricity Act**
- Bulk competition,
- Captive gen,
- subsidy for increased access
- Trading
- Promotion of renewable
- Open Access

Electricity Act 2003

- **Preamble**

*An Act to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity and generally for taking measures conducive to development of electricity industry, **promoting competition therein, protecting interest of consumers and supply of electricity to all areas, rationalisation of electricity tariff**, ensuring transparent policies regarding subsidies, promotion of efficient and environmentally benign policies constitution of **Central Electricity Authority, Regulatory Commissions and establishment of Appellate Tribunal** and for matters connected therewith or incidental thereto.*

- EA'03 repealed following Acts related to Electricity sector:

- Indian Electricity Act, 1910
- Supply Act, 1948
- Electricity Regulatory Commission Act, 1998

And consolidated these into one Act- The Electricity Act, 2003.

Electricity Act 2003 – Salient Features



- De-licensing of power generation
- Open Access to Transmission System
- Open Access to Distribution System
- Key provisions for renewable and cogeneration
- Trading in electricity permitted
- Liberal provisions for captive power generation
- Multiple Distribution Licensees permitted
- Rural generation and distribution freed from licensing
- Direct and transparent payment of subsidies
- Expanded role for the Regulatory Commissions

Competition in Electricity Markets

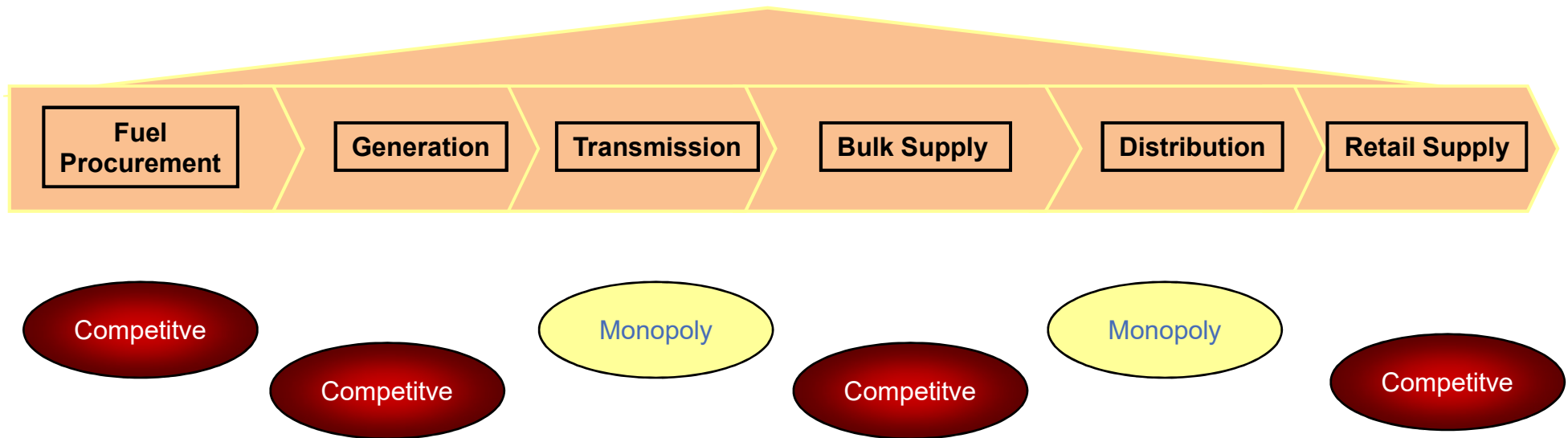
*“23. If the Appropriate Commission is of the opinion that it is necessary or expedient so to do for maintaining the efficient supply, securing the equitable distribution of electricity and **promoting competition**, it may, by order, provide for regulating supply, distribution, consumption or use thereof.”*

*“60. The Appropriate Commission may such issue directions as it considers appropriate to a licensee or a generating company if such licensee or generating company enters into any agreement or abuses its dominant position or enters into a combination which is likely to cause or causes an **adverse effect on competition in electricity industry**.”*

“61. The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely:-

*(c) the factors which would **encourage competition**, efficiency, economical use of the resources, good performance and optimum investments;”*

Electricity Value Chain



Market for electricity always existed, though competition was very little which this Act attempts to increase

Steps to develop Competitive Market



- Generation barring hydro completely de-licensed
- Tariff determination through competition was encouraged
- Captive power plants was allowed to sell excess energy to DISCOMs
- Trading was accepted as a distinct activity and actively promoted
- Regulators were mandated to promote market
- Transmission Open Access permitted to distribution companies and captive consumers with immediate effect.
- Distribution Open Access or choice to consumers with more than 1 MW loa was provided over 5 years

Instruments of Competition

Generation

- Competitive Bidding/ Captive
- Power Exchange/ Trading

Transmission

- Independent Power Transmission Company
- Joint Ventures with STU

Distribution

- Parallel/Multiple Distribution Licence
- Franchisee operations

Consumer

- Parallel/Multiple Distribution Licence
- Open Access (Trading/ Captive)

Open Access – Key Enabler



- Electricity Act 2003 has prescribed 'Open Access' as tool for introducing 'consumer choice'
- Open Access implies
 - Choice to consumers to select supplier
 - Choice to Suppliers to sell power to consumers
 - Multiple contracts and transactions
- Open Access from Network or System perspective
 - Right to Access Network
 - Right to Use Network
- Operationalizing above aspects is critical for successful introduction of Open Access

The Act gave the State Commission discretion to introduce open access in phases:

“....(47) “ open access” means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in accordance with the regulations specified by the Appropriate Commission;....”

“.. 42. (2) The State Commission shall introduce open access in such phases and subject to such conditions, (including the cross subsidies, and other operational constraints) as may be specified within one year of the appointed date by it and in specifying the extent of open access in successive phases and in determining the charges for wheeling, it shall have due regard to all relevant factors including such cross subsidies, and other operational constraints:..”

Key Requirements for Open Access



- Non-discriminatory Open Access is fundamental requirement of Open Access.
- Conditions for introduction of Open Access.
 - States to undertake segregation/un-bundling of transmission function from trading function.
 - Requisite communication and metering infrastructure to be available.
 - New Balancing and settlement arrangement to be formulated and implemented at State level.
 - Technical Codes for interconnection and Grid Code for Scheduling and Despatch to be updated.
 - Comprehensive and common regulatory framework across States for network charges.

Applicable Open Access Charges



1. Transmission Charges
2. Transmission Loss Compensation
3. Wheeling Charges
4. Wheeling Loss Compensation
5. Cross Subsidy Surcharge
6. Additional Surcharge
7. Default Supply Charge
8. Balancing Market Charge
9. OA Application Charges
10. SLDC Charges

It is the responsibility of the Regulator to determine all charges mentioned alongside.

SERCs have used significantly different methodologies to determine these charges.

Some ERCs have done complete turnabout in some instances

Today, Open Access is an established instrument for competition. In Oct 2014, Maharashtra alone permitted Open Access Capacity of in excess of 2000MW

- In case of parallel distribution licensees, the relevant provision of the Act is:

“ ..14.....

.....Provided also that the Appropriate Commission may grant a licence to two or more persons for distribution of electricity through their own distribution system within the same area, subject to the conditions that the applicant for grant of licence within the same area shall, without prejudice to the other conditions or requirements under this Act, comply with the additional requirements (including the capital adequacy, credit-worthiness, or code of conduct) as may be prescribed by the Central Government, and no such applicant who complies with all the requirements for grant of licence, shall be refused grant of licence on the ground that there already exists a licensee in the same area for the same purpose:....”

Multiple Players



EA 2003 - Second Proviso to Section 62(1)

“Provided that in case of distribution of electricity in the same area by two or more distribution licensees, the Appropriate Commission may, for promoting competition among distribution licensees, fix only maximum ceiling of tariff for retail sale of electricity.”

National Tariff Policy

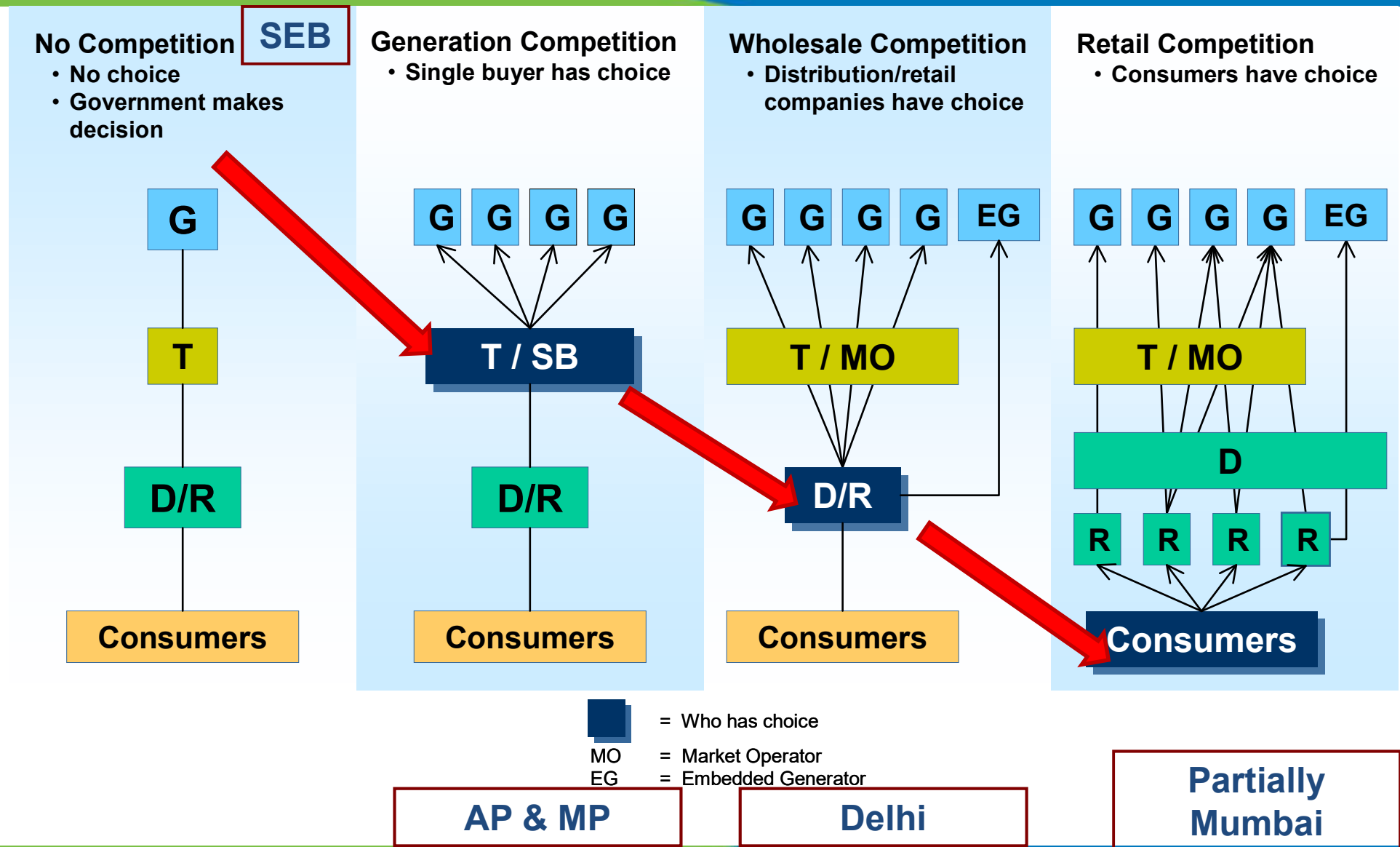
*“5.2 The real benefits of competition would be available only with the emergence of appropriate market conditions. Shortages of power supply will need to be overcome. **Multiple players will enhance the quality of service through competition.**”*

Challenges



- Role of Regulator to be re-assessed in the increasing competitive scenario
- Laying of Multiple networks under Parallel Licence – Duplication of network call for huge investments
- Proviso 6 of Section 14 of the Act mandates licensee to OWN distribution system
- Electricity Act provides for distribution licence and trading licence - Provisions of the Act to be modified or redefined to accommodate the segregation of wires and supply licence as different business activities
- Tariff is the single-most key trigger for any consumer to choose its supplier, who will decide Tariff??
- Competitive framework brings along the requirement to protect the low end consumers
- Low end consumers may suffer due to cherry picking by multiple licences or in case to levy of higher tariffs may result in tariff shock

Evolving electricity market in India



**Mumbai Case Study – Unique Experience to
introduce competition thru multiple licensees**

Background

Mumbai Distribution Licensees

- Mumbai has four Distribution Licensees:

- **Tata Power** – South Mumbai, Mumbai Suburbs (excluding Bhandup and Mulund), Mira-Bhayander Municipal Corporation
- **R-Infra** – Mumbai Suburbs (excluding Bhandup and Mulund), Mira-Bhayander Municipal Corporation
- **BEST** – South Mumbai
- **MSEDCL** – Bhandup and Mulund (MSEDCL, being the State Discom is also the deemed licensee for the entire Mumbai Metropolitan Region)



RELIANCE Energy
Anil Dhirubhai Ambani Group



Mumbai Distribution Licensees



- License to BSES (subsequently renamed R-Infra).
 - To supply power at 33 kV & below.
 - Power procurement from Tata Power.

- Tata Power (Bulk supply licensee): Served bulk consumers (1000 kVA and above) in BSES and BEST.

2002

- R-Infra filed a petition complaining of encroachment by Tata Power within its area of supply (for consumers below 1000 kVA).

2003

- MERC held that Tata Power can supply to any consumer. However, Tata Power was restrained from offering new connections below 1000 kVA on the ground that there is no level playing field for Tata Power and RInfra.

2006

- APTEL held that Tata Power entitled to supply energy only in bulk and not retail.

Parallel Licensing Regime



2008

- The Hon'ble Supreme Court in its judgement dated 8th July 2008 said that Tata Power Company has license to supply electricity to retail consumers and Tata Power can utilize the facility of wheeling on Rlnfra-D network to meet its obligation of supplying power on demand to the consumers in these areas.
- Commission notified the MERC (Specific Conditions of Distribution Licence applicable to The Tata Power Company Limited) Regulations, 2008, effectively confirming Tata Power as a distribution licensee for the entire city of Mumbai, covering the licence areas of both BEST and Rlnfra-D. Tata Power's distribution licence is valid up to 15th August, 2014

2009

- MERC facilitated this proposal by taking appropriate view in the Tata Power Tariff Order and order in Case No 50 of 2009 dated 15th October 2009 setting out the detailed operating procedure/protocol for change-over of consumers.
- With the advent of this protocol significant consumer base changed-over from Rlnfra-D to Tata Power due to the benefit in tariff received by changing-over.

Parallel Licensing Regime



Jul 2011

- MERC allowed applicability of Cross Subsidy Surcharge (CSS) and Regulatory Assets for changeover consumers to Tata Power. Defined various groups for payment of CSS, namely, Group I, II and III

Sep 2011

- RInfra filed petition because of large scale migration under S.43 and raised issue of Cherry picking by Tata Power. Led to redetermination of cross subsidy surcharge for open access transaction and applicability of CSS to consumer who changeover to RInfra network

Aug 2012

- RInfra sought relief on issues affecting its financial viability. The Commission restricted the changeover for only Residential consumer consuming 0-300 units per month for one year and expedite network layout in 11 clusters.
- Tata Power challenged the matter before APTEL

Dec 2012

- Tata Power challenged MERC order of July, 2011 on levy of cross subsidy surcharge and Regulatory Asset charge in APTEL
- APTEL upheld the MERC decision.
- Tata Power approached Supreme Court on the matter

Heating up Competition



2013

- In the MYT Order's for Rlnfra and Tata Power, Commission changed the game making Rlnfra Tariff attractive for all consumer categories except residential consumer
- As result all consumers opted for reverse changeover

Oct
2013

- The Commission directed 7.92lakh consumers with 0-300 monthly consumption in 11 clusters to be treated as direct consumers of Tata Power
- The matter is pending before the APTEL

May
2014

- Supreme Court held that Tata Power and BEST are parallel distribution licensee in the South Bombay Area.
- Consumers opted for supply from Tata Power to avail benefit of lower tariff

Jun
2014

- BEST filed a petition for determination of cross subsidy surcharge and financial sustainability of BEST

Aug
2014

- The Commission renewed Tata Power's distribution Licence for 25 years and revoked the restriction on TPC's network expansion and supply to identified categories, consumers or areas in the earlier licence, thus allowing Tata Power to serve consumers other than 0-300 consumption consumers

The Electricity Act, 2003 defines distribution a licensee as follows:

- “...(17) *distribution licensee means a licensee authorised to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply...*”

Distribution system is defined as:

- “...(19) *distribution system means the system of wires and associated facilities between the delivery points on the transmission lines or the generating station connection and the point of connection to the installation of the consumers..*”

- Further, the Act has defined types of licensees that can be issued by the Commission under Section 14, Grant of license, as follows:

“...14. The Appropriate Commission may, on application made to it under section 15, grant any person licence to any person – (a) to transmit electricity as a transmission licensee; or (b) to distribute electricity as a distribution licensee; or (c) to undertake trading in electricity as an electricity trader, in any area which may be specified in the licence:..”

- The Act does not envisage separate wire (or wheeling distribution) licensees and retail supply licensees. Distribution licensee is liable for owner ship of wires and supply to consumers

Challenges faced in current landscape



Consumers

- Difficulty in connecting with the desired license
- Not able to exercise choice in true sense
- Procedural delays and regulatory constraints
- Unable to take advantage of supply from cheaper service provider
- At mercy of the service providers
- Multiplicity of charges

Discoms

- Loading of existing assets to optimal level
- Multiplicity/ duplication of Network
- Space constraints for development of parallel network
- Creating a level playing field
- Operational issues related to switching over of consumers
- Recovery of all costs incurred to serve the consumers

MERC

- Issues related to migration of consumers and difficulties faced
- Network layout by Utilities
- Complex Tariff structure of competing Utilities
- Protecting low-end consumers and ensuring Cross-subsidy

One Mumbai One Network

Concept

- Entire Network of the Mumbai would be consolidated into one single umbrella
- Wires cost, namely ARR of all the Licensees shall be pooled to determine the Wheeling charges for all Mumbai consumers
- All consumers in Mumbai Licence Area shall pay the same Wheeling charges
- Distribution licensee who has created or invested in this asset would continue to earn its ROE under ARR approved by MERC
- Issue of redundant assets and duplication of network shall be addressed

Consumer benefits

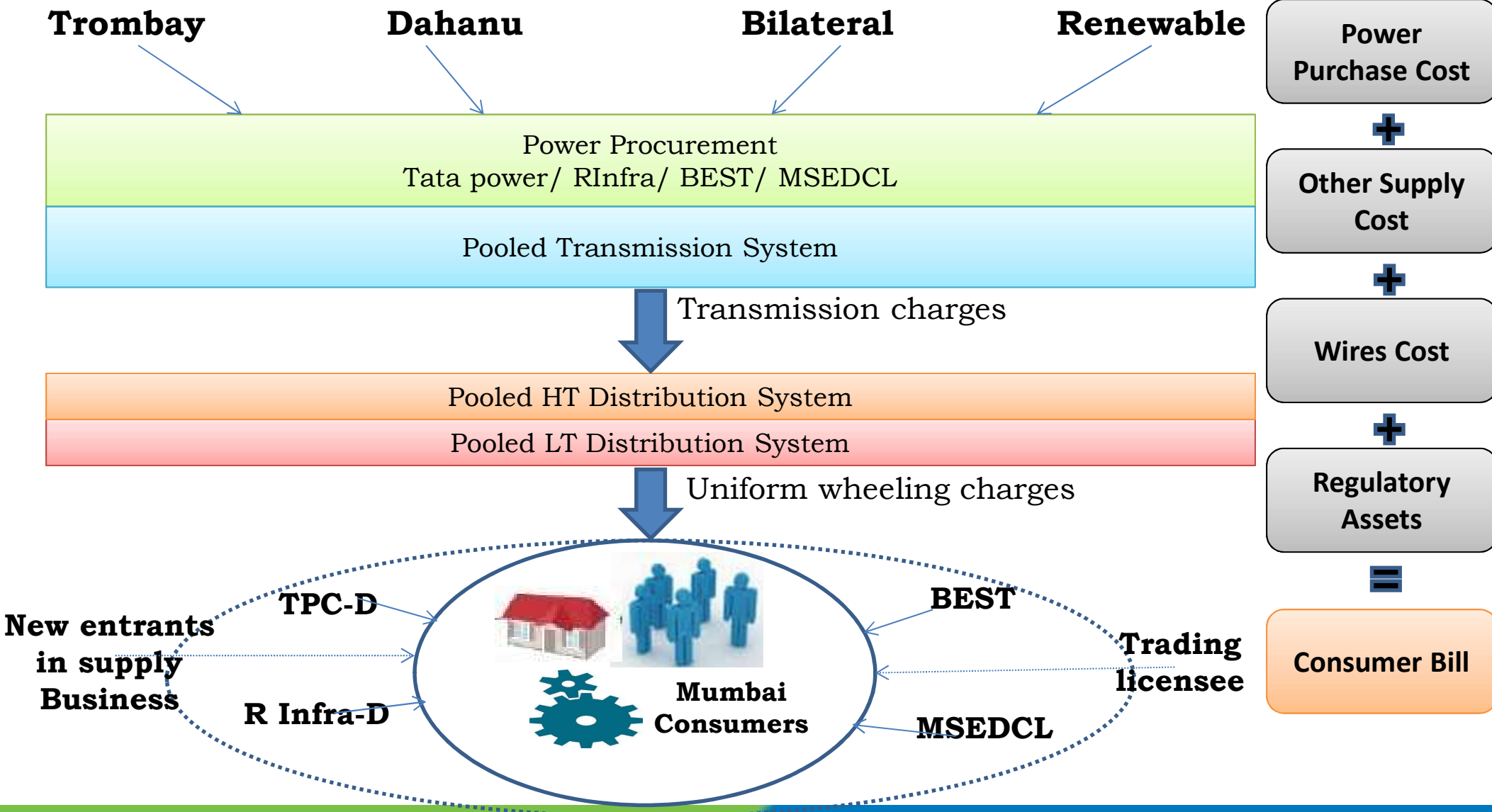
- All consumers taking supply from any Licensee shall be connected to OMG
- Consumers shall have the choice to choose its supplier
- Consumer shall take full advantage of the competitive tariff with reduced procedural constraints and issues
- Consumers shall not suffer hassles on account of shifting from one licensee to another
- Migration on Wires shall not be required as the Wheeling charges of the entire Grid should be same
- Migration for Supply shall be easy and there shall be no need to change meters as well

Objectives of Proposed Competition Framework



- Provide consumers choice to opt for the desired supplier
- Easy changeover of consumers from one licensee to another
- Develop economic distribution system in Mumbai by avoiding duplication of network and optimum utilization of available resources
- Protect the interest of the consumers and provide them competitive tariffs
- Promote fair competition and level playing field
- Encourage utilities to bring in efficiency in operations and improve their performance to earn unlimited incentives

Competition framework – Entire Mumbai



Role of Stakeholder

- Wires owner would continue to earn Return on Equity (ROE) and recover the Annual Revenue Requirement (ARR) for wires business as in the current scenario
- ARR of each wires licensee shall be scrutinised by the Commission and approved
- Operation and maintenance of existing and new distribution system shall be the responsibility of the wires owner
- Distribution system should be available/sufficient to meet the increasing load requirement
- Loss reduction Incentives shall be linked to ROE
- Wheeling charges may be cross subsidised for Residential consumers

Supply Business



- The licensee would serve the consumers through the distribution grid and pay the wheeling charges for grid usage
- Licensee shall offer competitive tariff to the consumers considering all associated cost (G-T-D)
- Licensee would continue to hold the existing Power Purchase Agreements and use the existing transmission and distribution network by paying charges determined by the Commission
- Renewable Purchase Obligation shall be complied by the licensee
- Reduction in cross-subsidy targets will be given to all licensees
- Margins depend on supply licensee pricing and O&M expenses
- The Commission shall decide the Ceiling Tariff for Mumbai
- Licensee to determine the tariff for each consumer category
- Strategic marketing and pricing is the key to profits

Role of Regulator ...(1/2)



Generation

- No role to play for MERC in case of multiple licences in Mumbai

Transmission

- Approve Annual revenue requirement & determine Transmission Charges

Wires

- Work-out methodology for **pooling of existing wires** in Mumbai
- Determine **Uniform Wheeling Charges** for all consumers of Mumbai

Supply

- MERC to determine only **ceiling tariffs** for all categories of consumers.
- **Allow Competition** to be ushered for all categories of consumers.
- **Over period, trading licensees** may be permitted to supply electricity

Consumers

- Develop appropriate mechanism to provide Cross Subsidy/subsidy
- Protect the interest of low end consumers

Role of Regulator ...(2/2)



- Detailed protocol for Uniform Migration / Changeover to be developed
- Allocation of wires and supply cost for all Licensees
- Determination of Uniform Wheeling charges
- Determining the tariff/subsidy for Residential consumers
- Determination of Ceiling Tariff for all consumer categories
- Measure performance and set target for-
 - Distribution loss reduction
 - Cross subsidy reduction
 - SAIDI , SAIFI
 - Wires availability
 - Supply availability
- Dispute redressal and monitor gaming, if any
- Intervention in MEDC has required

Operational Aspects

Pooling of Wires



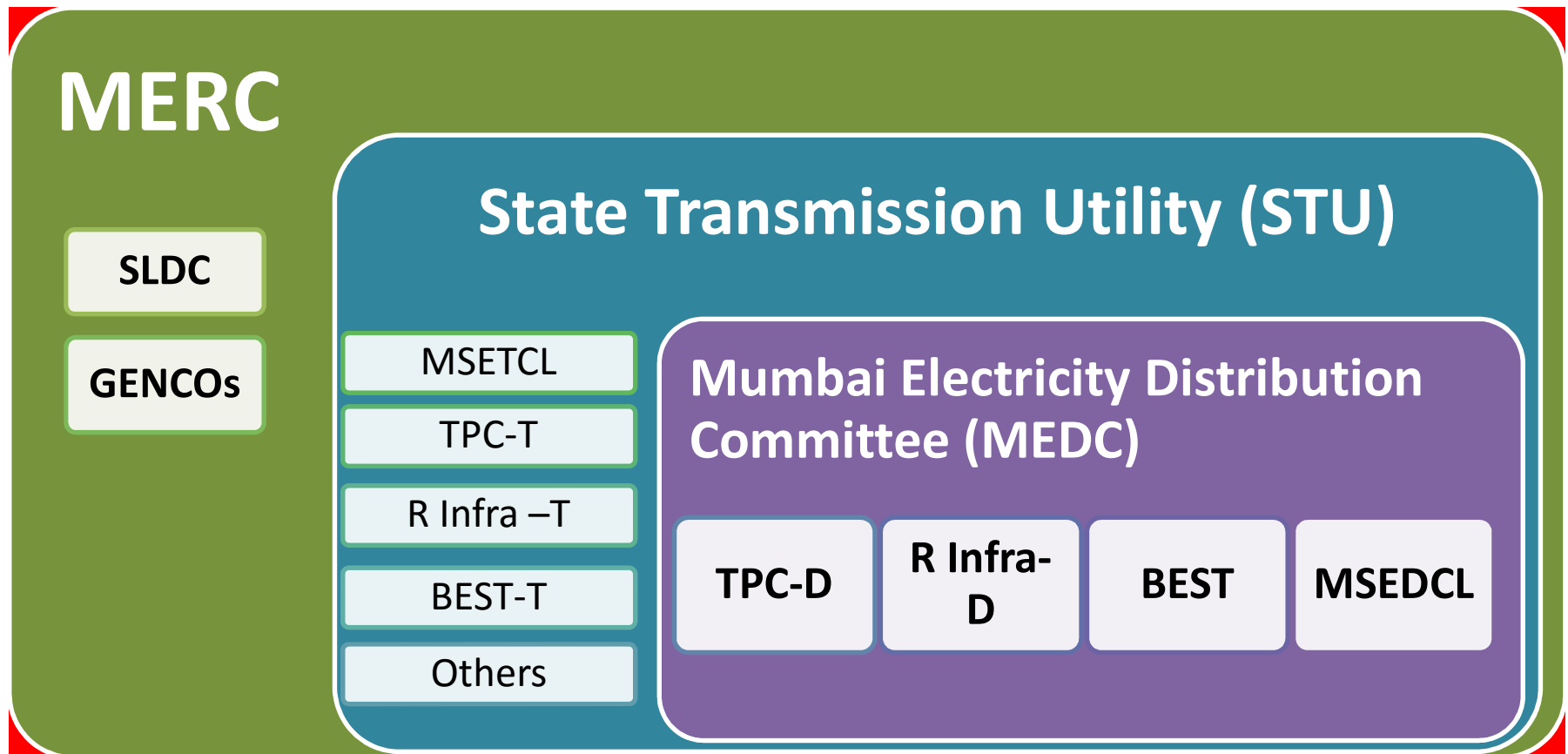
- All the wires in the city of Mumbai will be pooled to form the Distribution Grid, in lines with the Transmission Grid
- Any consumer connected to the Grid shall be the consumer of the chosen Supplier
- The licensee would continue to own the existing wires but these wires will be utilised by all /any Licensee to supply
- New and development areas are accepted by MERC from year to year and permissions given to any Licensee for development as per DPR

Operational features



- “Mumbai Electricity Distribution Committee” (MEDC) will have to be formed by MERC to govern the entire distribution system and propose new area development requirement
- The Committee shall also identify optimum network requirement also factoring in appropriate loading of existing assets and track the performance of the wires licensees
- Meter reading and billing shall be done by the wires Licensee to the consumer
- Licensee shall earn regulated ROE and incentive for loss reduction for its wires business as in the present scenario
- For the supply side, the Licensee shall be responsible for its profits and losses based on its competitive pricing

- Appointment of nodal agency to govern and co-ordinate the activities related to distribution system – “Mumbai Electricity Distribution Committee” (MEDC)



Features of Institution framework



- “Mumbai Electricity Distribution Committee (MEDC)” to be formed to manage the proposed single network of wires
- The Committee shall constitute of members of all Discoms and Director, MERC would be Chairman of the Committee
- The Committee shall ensure the existing network is Utilised to its fullest capacity
- New network development in Mumbai shall be approved by the Committee
- MEDC shall issues guidelines from time to time to all the distribution Licensees for connecting new consumers
- Network cost shall be approved based on benchmarks set/bidding
- The Commission/ Government of Maharashtra shall intervene to protect the residential consumers through uniform tariff /subsidy

- Existing consumers shall continue to be connected to the OMG at the current location under the existing set-up and avail supply from existing supplier
- When a consumer approaches Discom of choice for availing power supply:
 - Apply for connection to chosen Discom
 - Apply for disconnection to existing Discom
 - Chosen and existing Discom shall facilitate the migration as per Migration Protocol decided by the Commission
 - Consumer to connect as per SoP Regulations
- Consumer shall continue to be connected to the OMG, irrespective of the network owner
- Consumer should be receive bill from the Chosen Licensee within time-lines as mentioned in the SoP (i.e. 30 days)

Proposed Tariff Mechanism

Consumer Tariff

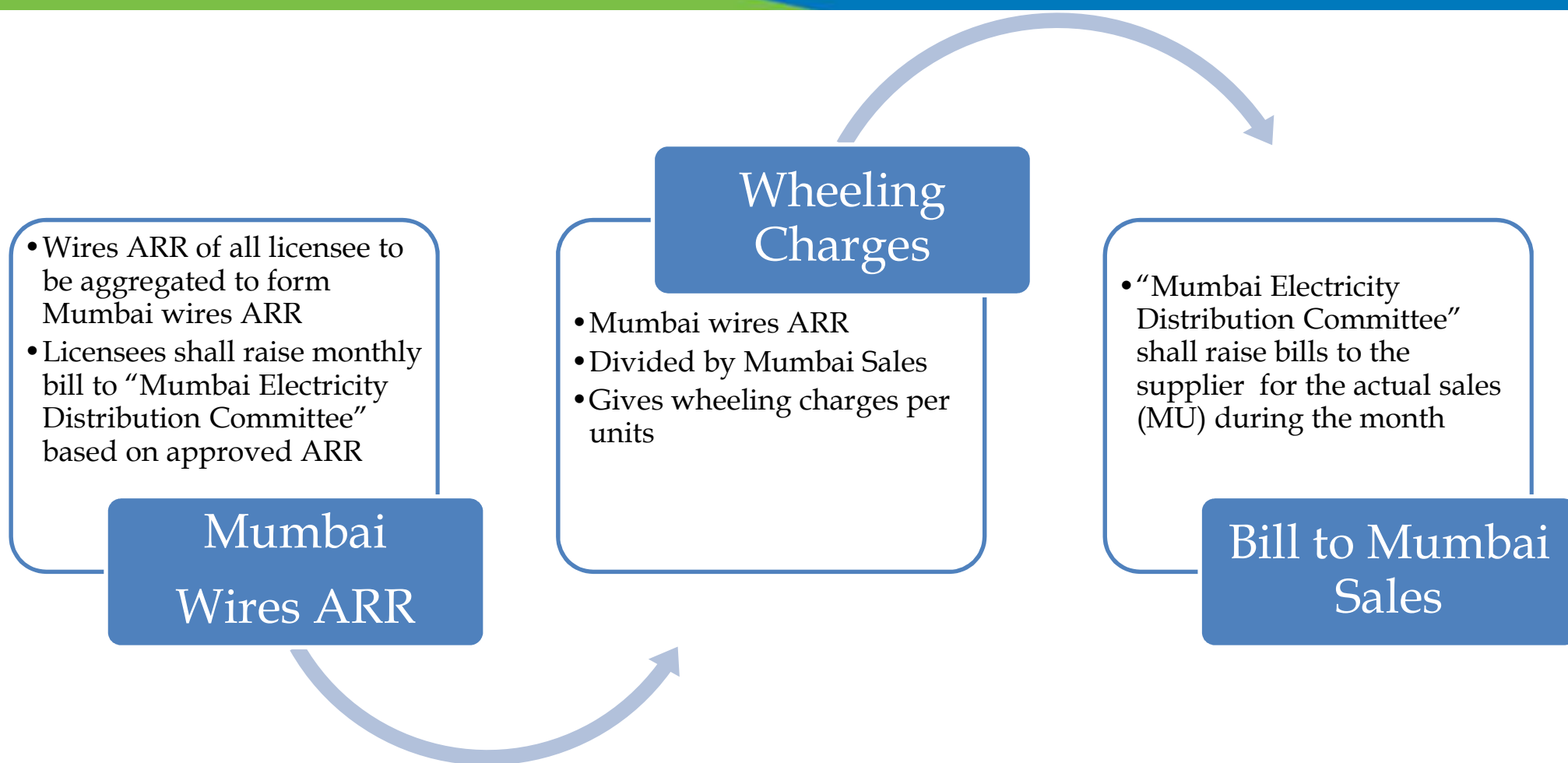


- Consumer tariff shall include the fixed charges, energy charges and fuel adjustment charges as in the present scenario
- Commission shall determine the ceiling tariff for Utilities and the tariff structure
- Utilities may bill consumer tariff lower than that determined by the Commission to be competitive

Residential Consumers

- In order to protect the Residential consumers, the Commission shall determine the tariff payable by this consumer category
- Single Tariff shall be applicable for Residential Consumers availing supply from any supply licensee
- Tariff shall be reviewed periodically by Utilities and the Commission

Recovery of wheeling charges



Recovery of Wheeling Charges shall be in line with the existing methodology of recovery of Transmission Charges

Regulatory Assets



- Regulatory Assets approved by the Commission to be recovered uniformly from all the consumers in the city
- Further creation of Regulatory Assets in the supply business shall not be permitted
- It shall be the responsibility of the electricity supplier to manage its expenses and recover costs

Implementation Issues

Other Implementation Issues



- Amendment of Licence Conditions for Network Roll-out – whether required?
- Allocation of ARR to Wires and Supply
- Determination of Ceiling tariff
- Tariff Determination for Residential/low end consumers
- Responsibility of laying down wires for new consumers
- Gaming by licensees to be monitored
- Segregation of technical and commercial loss and responsibility for same
- Responsibility of fair Meter reading
- Competitive power procurement

Issues for Discussion



- Whether all aspects of competitive framework have been taken into account?
- Whether some of the features (especially residential tariffs related) are sustainable?
- Whether proposed framework is in line with proposed amendments to EA'03?
- Whether the proposed framework can be implemented before amendment?
- How will MERC navigate this framework?

Thank You



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