# MINUTES OF THE THIRTY SIXTH MEETING

# OF

# FORUM OF REGULATORS (FOR)

**VENUE : SHER-I-KASHMIR INTERNATIONAL CENTRE (SKICC)**
**SRINAGAR (J&K).**

**DATES : 19TH – 20TH APRIL, 2013**

The meeting was chaired by Dr. Pramod Deo, Chairperson, CERC/FOR. The list of participants is at **Annexure-I**.

The Chairperson, Forum of Regulators welcomed Shri A. Chhawnmawia, Chairperson, Joint Electricity Regulatory Commission (JERC) for Manipur & Mizoram (M&M) to the Forum as he was attending the Forum meeting for the first time. Shri Rajiv Bansal, Secretary, CERC/FOR extended a warm welcome to all members of the Forum.

The FOR thereafter took agenda items for consideration.

**AGENDA ITEM NO. 1 : CONFIRMATION OF THE MINUTES OF THE 35TH MEETING OF "FOR" HELD DURING 15TH - 17TH FEBRUARY, 2013 AT SUNDARBANS (WEST BENGAL).**

Secretary, CERC/FOR briefed the Members about the action taken on the decisions of the last meeting. Chairperson, MERC mentioned that in the States where MYT principles have been adopted, requirement of year on year Tariff Order may not be required. He requested that this should be brought to the

notice of the APTEL. After brief discussion, the Forum endorsed the minutes of the 35th Meeting of FOR held during 15th – 17th February, 2013 at Sundarbans (West Bengal) as circulated.

**AGENDA ITEM No. 2 : PROPOSED BUDGET OF "FOR" FOR THE YEAR F.Y. 2013 – 14.**

The budget for the year 2013-14 as circulated was discussed in detail. Salient features of the proposed budget as reflected in the income and expenditure statement (contained in Annexure-I of the Agenda Note were explained). After deliberations, the proposed budget was approved.

**AGENDA ITEM NO. 3 : PROPOSED STUDIES AND TRAINING PROGRAMMES DURING THE YEAR 2013-14.**

After discussion, the proposal for studies and training programmes for the year 2013-14 were approved. It was also suggested that a study on Special Requirement for Supply Conditions and Tariff for Agricultural Sector may also be commissioned.

**AGENDA ITEM NO. 4 : CONSIDERATION OF STUDY REPORT ON "RETAIL SALE COMPETITION".**

Secretary, CERC/FOR informed that the study report on "Retail Sale Competition" was discussed in the 33rd Meeting of "FOR" held at Port Blair (A & N Islands) during December, 2012. Based on the suggestions of the "FOR",

the report has been updated. Representative of M/s. PWC made a presentation **(Annexure-II)** on the revised report. The Forum endorsed the need for separation of carriage and content at the distribution level for implementation of Retail Sale Competition. After discussion, the report was approved.

**AGENDA ITEM NO. 5 : POWER PROCUREMENT PLANNING OF DISTRIBUTION COMPANIES.**

The matter was discussed. The Forum appreciated the need for strengthening the demand forecasting and power procurement planning by the distribution companies. It was felt that the State Electricity Regulatory Commissions (SERCs) while approving business plan should scrutinize the power procurement plan especially, medium-term and long-term procurement plans of the distribution companies. The Forum also noted the specific reference of a large number of PPAs of the distribution utilities with generators like NTPC for supply of power on long-term basis. It was agreed that the "FOR" should write to the Ministry of Power (MOP) and Central Electricity Authority (CEA) advising them to monitor progress of these projects with a view to ensuring that they are commissioned at the earliest as per discoms' requirements.

**AGENDA ITEM NO. 6 : DISCUSSION ON "INTRODUCTION OF ANCILLARY SERVICES IN INDIAN ELECTRICITY MARKET" – STAFF PAPER PREPARED BY CERC.**

Deputy Chief (RA), CERC made a presentation **(Annexure-III)** on the CERC's Staff Paper on "Introduction of Ancillary Services in Indian Electricity Market". The driver/need for ancillary services, framework of ancillary services as proposed in the CERC's Staff Paper and issues in its implementation were highlighted in the presentation. Shri V.S. Verma, Member, CERC, who was invited in the meeting as a 'special invitee' viewed that since frequency was a temporary phenomena, there might be limitation in implementation of ancillary services for frequency in the Indian market. The grid security should ideally be ensured by having spinning reserve with the generators and by mandating FGMO for the generators. Ancillary services may, however, be desirable to balance the variability of the renewable generation. After discussion, it was decided that the "FOR" Members would send written comments on the Staff Paper to CERC.

**AGENDA ITEM NO. 7 : DRAFT MODEL LEGISLATION ON STATE ELECTRICITY DISTRIBUTION RESPONSIBILITY BILL.**

Secretary, CERC/FOR informed that as per Government of India's Scheme for Financial Restructuring of State owned Distribution Companies, Model Legislation on State Electricity Distribution Responsibility Bill is to be formulated. Ministry of Power has requested "FOR" Secretariat to evolve a Model Legislation. "FOR" has engaged a consultant to draft the Model Legislation in this regard. A presentation **(Annexure-IV)** on the draft evolved so far was made by the representative of the Consortium Consultancy firm. The Forum noted the draft and decided that the "FOR" Secretariat could assist the

Ministry of Power in drafting the Legislation with the approval of the "FOR" Chair.

**Other Issue –**

Draft MOU between "FOR" and LBNL, CEC, California

Secretary, CERC/FOR informed that the existing MOU between "FOR" and LBNL, CEC, California has expired. A proposal has been received from the said agencies in California for extension/renewal of the MOU. After discussion, the Forum approved the content of the MOU and the extension of the term of the MOU.

The Forum appreciated the efforts made by J&KSERC under the chairmanship of Shri S. Maria Desalphine, Chairperson, J&KSERC, Jammu (Jammu & Kashmir) for the arrangements made for the meeting.

A vote of thanks was extended by Shri Rajiv Bansal, Secretary, CERC/FOR. He conveyed his sincere thanks to all the dignitaries present in the meeting. He also thanked the staff of "FOR" Secretariat for their arduous efforts at organizing the meeting.

The meeting ended with a vote of thanks to the Chair.

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**/ ANNEXURE – I /**

**LIST OF PARTICIPANTS ATTENDED THE THIRTY SIXTH MEETING OF**

**FORUM OF REGULATORS ( FOR )**

**HELD DURING 19TH – 20TH APRIL, 2013 AT SRINAGAR (J&K).**

| S. No. | NAME | ERC |
|---|---|---|
| 01. | Dr. Pramod Deo<br>Chairperson | CERC – in Chair. |
| 02. | Shri A. Raghotham Rao<br>Chairperson | APERC |
| 03. | Shri Jayanta Barkakati<br>Chairperson | AERC |
| 04. | Shri Umesh Narayan Panjiar<br>Chairperson | BERC |
| 05. | Shri Manoj Dey<br>Chairperson | CSERC |
| 06. | Shri P.D. Sudhakar<br>Chairperson | DERC |
| 07. | Dr. P.K. Mishra<br>Chairperson | GERC |
| 08. | Shri Subhash Chander Negi<br>Chairperson | HPERC |
| 09. | Shri S. Maria Desalphine<br>Chairperson | J&KSERC |
| 10. | Shri A. Chhawnmawia<br>Chairperson | JERC for Manipur & Mizoram |
| 11. | Shri V.P. Raja<br>Chairperson | MERC |
| 12. | Shri Anand Kumar<br>Chairperson | MSERC |
| 13. | Ms. Romila Dubey<br>Chairperson | PSERC |
| 14. | Shri T.T. Dorji<br>Chairperson | SSERC |
| 15. | Shri Manoranjan Karmarkar<br>Chairperson | TERC |
| 16. | Shri Jag Mohan Lal<br>Chairperson | UERC |

| | | |
|---|---|---|
| 17. | Shri Rohtash Dahiya<br>Member | HERC |
| 18. | Shri T. Munikrishnaiah<br>Member | JSERC |
| 19. | Shri S.K. Chaturvedi<br>Member | JERC for Goa & All UTs except Delhi |
| 20. | Shri Alok Gupta<br>Member | MPERC |
| 21. | Shri Bijoy Kumar Misra<br>Member | OERC |
| 22. | Shri S. Nagalsamy<br>Member | TNERC |
| 23. | Shri Shree Ram<br>Member | UPERC |
| 24. | Shri Rajiv Bansal<br>Secretary | CERC/FOR |
| 25. | Shri Sushanta K. Chatterjee<br>Deputy Chief (RA) | CERC |
| | | |
| **SPECIAL INVITEE** | | |
| | Shri V.S. Verma<br>Member | CERC |

Forum of Regulators (FOR) Meeting

# *Feasibility of retail competition in India*

*For Discussion*

*19 April 2013*

## *Agenda*

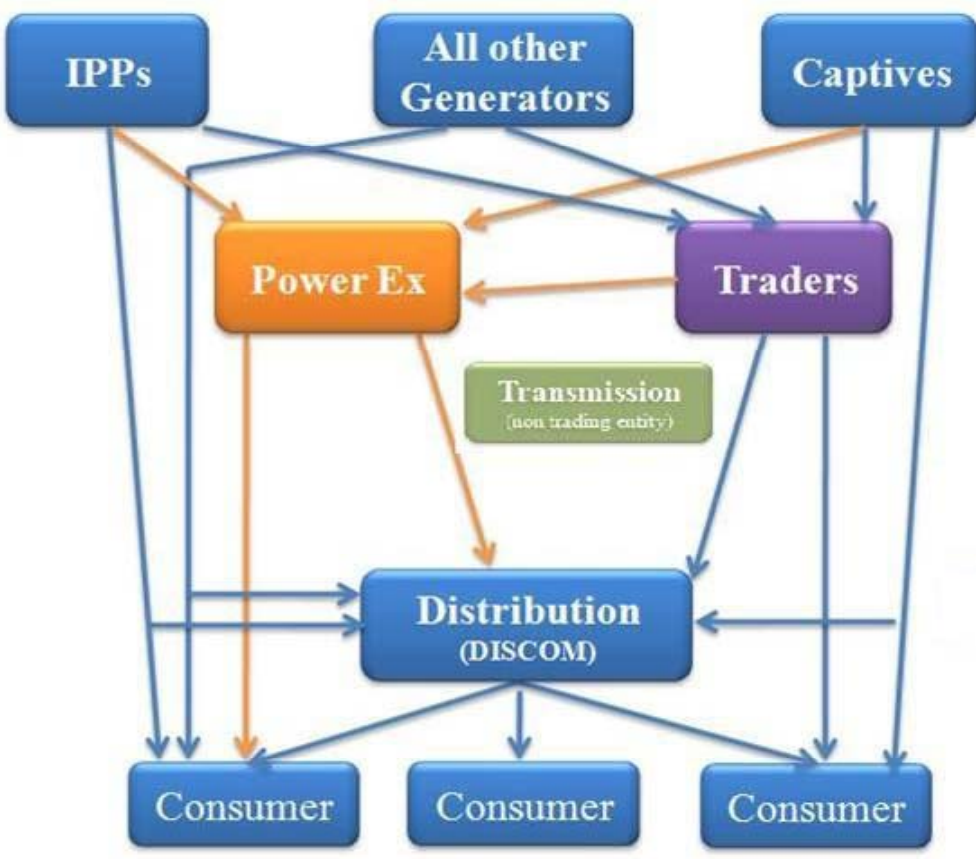
# Section 1
# *Context*

# Context

- PwC was appointed by the Forum of Regulators to do a feasibility study for retail supply competition
  - Review of International Experience
  - Enablers for introduction of retail supply competition
  - Proposed timelines and framework
- PwC made a presentation sharing concept note on the retail supply competition during the FOR meeting at Port Blair
  - Incorporate Maharashtra experience

# Section 2
# *Current market structure*

# *Distribution and retail supply – One licence*

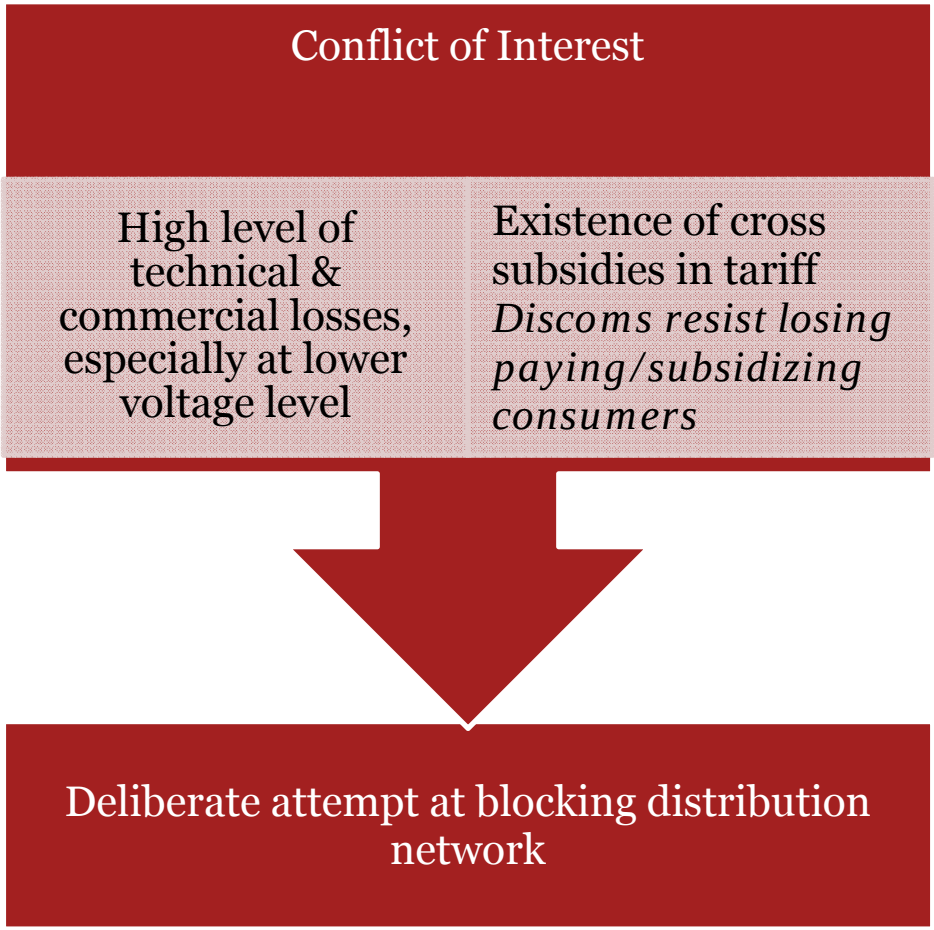



* *Arrow represents competition*

- Distribution and retail supply bears the inefficiencies of value chain - losses of distribution companies > Rs 2 Lakh Crores
- Integrated network and retail supply business creates distortions in identifying costs, tariff and efficiencies
- EA 2003 has the objective of promoting competition in the power sector, but there has been little progress so far in infusing competition in power distribution
- Conflict of interest

# *Is common ownership – creating conflict?*

- High level of supply losses at lower voltage levels; and low level of supply losses at higher voltage levels - tends to a behaviour of restricting network access and poaching customers
- Effectiveness of competition through traders has limited impact – customer awareness, technical issues, lack of focus in a licence area, etc
- Existing tariffs makes owners of utilities resist the loss of cross-subsidy by migration of high-paying consumers to competitive modes such as open access



# Retail competition - Is carriage and content segregation required ?

Ideally, Yes.....

- To avoid conflict of interest and bring neutrality in network business
- Separate wire business
  - assured return would encourage investment in expanding distribution network – improve access
  - Can remain a natural monopoly (along with govt ownership)
- Separate supply business
  - Ensure reduction of commercial losses and efficiency enhancement
- Transparency in the cost and revenue streams
- Future Market: Multiple retail supply licensees and one distribution licensee – Supply through a common network
  - Might be more effective because of focus on geographical area

# Section 3
# *Feasible market structure*

# *Broad contours of the feasible market structure*

- Feasible market structure
  - Segregation of network and supply businesses
  - Ownership separation after 3 years; onset of second supply licensee
  - The model would start off as a hybrid model wherein only one segment of consumers (1 MW & above load) would be initially open to competition
- International experiences in retail sale competition have been studied to recommend the market structure for India
- Appreciation for differences in baseline conditions
- Phased approach with clear milestones over a 6 year period
- Clear identification of enablers which will facilitate this transition
- Minimum disruption in existing contracts
- Might assist in operationalising the open access

# *Enablers for retail competition*

- The following pre-requisites (to be accomplished during Phase-I) would enable successful introduction of competition in the retail supply of electricity in India:
  - Wholesale Market Reforms
  - Cost-reflective tariffs (dealing with cross subsidies)
  - Treatment of existing losses (distribution and financial losses)
  - Suitable supply infrastructure in place (problem of selective load relief, necessity for independent/dedicated feeders, cost sharing of new metering infrastructure etc.)

# *Enabler 1*
# *Wholesale Market Reforms*

- Market models existing in developed countries operate in a “power surplus” environment.
- Generation market is imperative for implementation of successful retail market
  - Need power to be available to retail suppliers
  - Market forces maximise generation efficiency, promote investment and thereby bring down the power purchase costs of retailers and end consumers.
- Even with current deficits, possible to create a Medium term capacity market
  - To have all untied and spare capacities in the market
  - Increase in market capacity as existing PPAs expire and competing utilities start acquiring power more from the market.

# *Enabler 2*
# *Cost-reflective tariffs*

Need for voltage-wise and category-wise determination of cost of supply

- Need to allocate losses at 66/33/11 kV voltage level. This data is not being maintained by India distribution utilities.

In the Indian context, reduction of cross subsidy is essential. Some suggestive modes:

- All competitive market consumers (irrespective of whether shifted to the new retailer or not) may be loaded with a Cross Subsidy Surcharge in initial years considering the viability of discoms till the time cross subsidy is phased out gradually.
- A Universal Charge (UC) could be charged on per-unit basis on sales to all consumers of incumbent distribution companies and collection of UC would go towards a state-wide/national fund to reduce the extent of cross subsidy in retail supply.
- Some sort of viability gap funding may be provided by the Govt. to compensate incumbent discoms for the loss of high tariff consumers to competitive retailers.

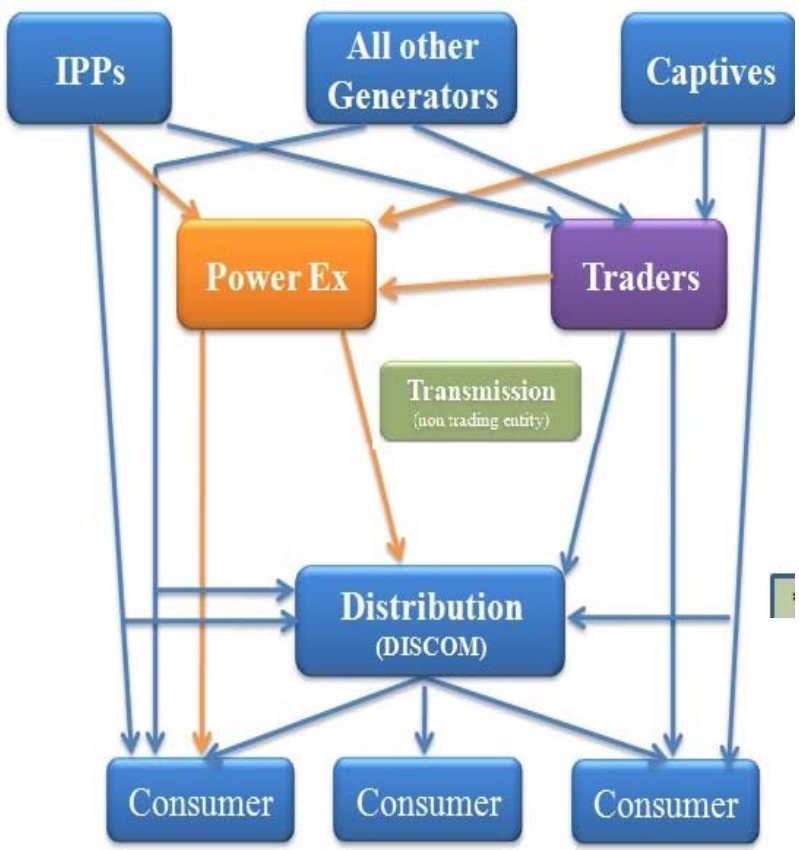
# *Enabler 3*
# *Treatment of losses - distribution and financial*

- Need for establishing actual Voltage-wise Technical and Commercial Losses prevailing as on date
- Need to allocate distribution losses to different voltage levels to arrive at voltage-wise and category-wise loss levels for each discom.
- Allocation of technical losses to wires (distribution) business and commercial losses to retail supply business.
- Allocation of financial losses between distribution and retail supply functions would be a tough task.
  - A Special Purpose Vehicle (SPV) may be created to take over all the existing accumulated financial losses.
  - A Regulatory Surcharge may be levied on all consumers which would go towards the SPV.

# *Enabler 4*
# *Need for Suitable Supply Infrastructure*

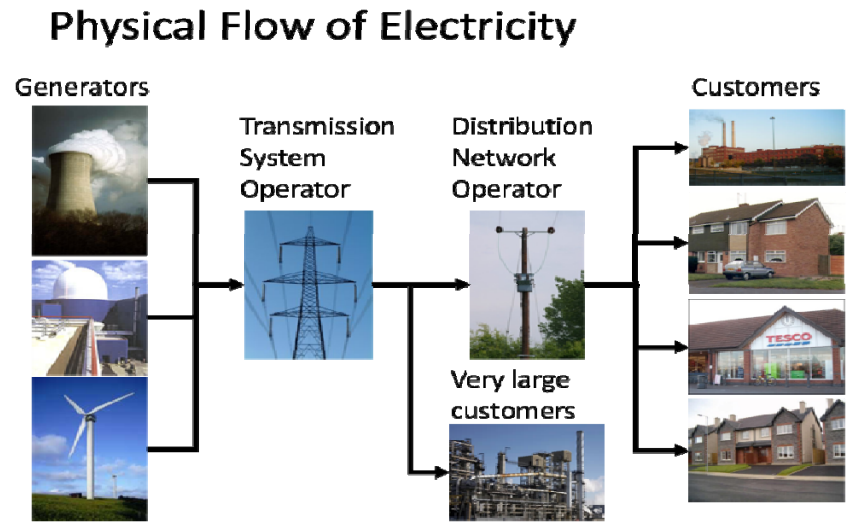
- As-Is Situation
  - Imposition of load restriction by the incumbent discoms impact supply of power to open access consumers
  - This will be an issue even after separation of network business with the current level of metering and supply infrastructure
- Transition Phase
  - Consumers willing to undergo load shedding may be allowed to change suppliers. All suppliers would have to declare load shedding schedules in advance
  - Where possible, consumers willing to switch may be shifted to dedicated/ independent feeder
- Advanced metering would be required before the market is open to competition
  - No need for all consumers on a feeder to take supply from the same retailer
  - Power supply to individual consumers then can be regulated from a remote level

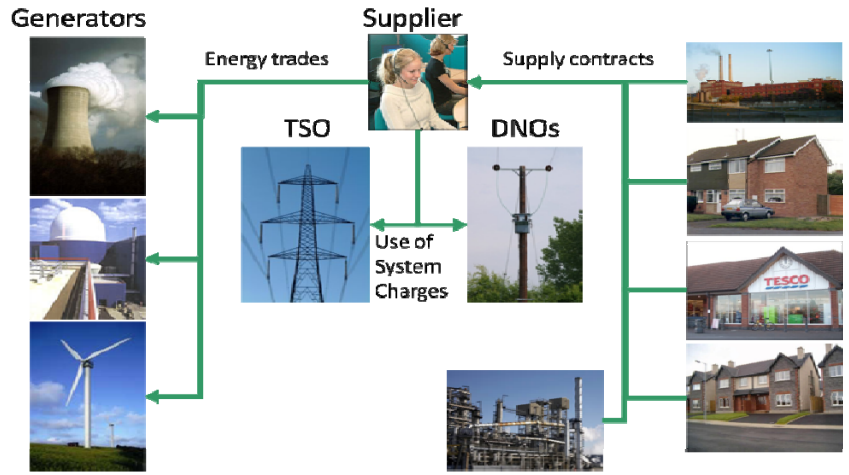
# Recommended Market Structure




Existing

* Arrow represents Contract




Recommended

# *Transition (to Multiple Suppliers )*

- Physical flow of electricity does not change - What changes is how the electricity contracts and trades are done to facilitate a market of suppliers
  - Competition in wholesale and retail supply markets; and
  - Regulation in network business
- Introduction of retail suppliers
  - Suppliers will be procuring power from generators for a pool of customers so will be able to get better rates
  - Regulated entity – The supply business will be licensed and therefore the supplier will be duty bound with regards to guarantee of supply, supply code etc
  - Dedicated suppliers assist in focussed scheduling and system stability
  - Suppliers will provide better service to customers

# Section 4
# *Implementation roadmap*

# *Implementation roadmap – Phase I*



**Phase I**
**(0 – 3 Years)**

**Essential Pre- requisites**

- Wholesale Market Reforms
- Cost-reflective tariffs (dealing with cross subsidies)
- Treatment of existing losses (distribution and financial losses)
- Suitable supply infrastructure

1. Segregation of Business and Employees
2. Separation of Licenses (Same Ownership)
   1. Supply
   2. Network
3. Transfer of PPA to Supply License
4. Tariff Determination
   - Network Business: Regulated Tariff (Voltage-wise)
   - Supply Business: Regulated (with supply margin linked to losses)
   - Consumers of 1 MW and above have the choice to take supply through open access from generator, trader or CPPs (with cross subsidy surcharge)
5. Applications invited for subsequent licensees

# *Implementation roadmap – Phase II*



**Phase II (3-6 Years)**

- Network Business: Regulated (incentive based)
- Supply Business:
  - De-regulated for 1 MW & above consumers.
  - Regulated for consumers below 1 MW (with concept of supply margin linked to loss reduction)
  - No surcharge (as cross subsidy and losses would have been reduced substantially in the 1st phase and due to other design changes)

Network licensee cannot be in supply business

Tariff Determination

1

2

3

4

Onset of second/subsequent supply licences

**New supply licensees to have their own generation contracts.**

***Choice for 1 MW and above to choose suppliers***

Competition in Supply Business

- **Deemed licensee to be the provider of the last resort.**
- Competition between deemed supply licensee and second/subsequent supply licensee: former will have cheaper power purchases but high losses while the latter will have higher power purchases but lower losses and operation costs.

# *Implementation roadmap – Phase III*



**Phase III (Beyond 6 Years)**

Further de-regulation of Supply Business –

- Deregulation of consumers in the 500 kW to 1 MW segment.
- Deregulation for consumers in the 100 kW - 500 kW segment.
- Treatment of PPA and tariff determination/deregulation on similar principles as for phase II

# Section 5
# ***Way Forward***

# *Studies to be conducted*

- Segregation of technical & commercial losses and determination of voltage wise losses
- Determination of voltage wise / category wise cost of supply
- Allocation of assets / employees between wheeling and retail supply
- Cross subsidy reduction road map
- Whole sale market structure
- Determination of area, Tenure of supply license, Eligibility criteria for supply licensees
- Treatment and allocation of existing PPAs
- Determination of Standard of Performance, consumer grievance redressal,
- Provider of last resort

***Thank you!***

# *Experience of Mumbai*

- Initially, consumer moving from one retail supplier to another was "win – win" situation for all
  - Expensive power sourced from short term sources reduced
- Commission prescribed cross subsidy surcharge
- Network reliability was not an issue
- Progress achieved because of close monitoring by regulator
- Recent developments have again raised the issue of conflict of interest
  - Reinforcing need for segregation of carriage and content
  - R-Infra has approached APTEL and MERC for stopping migration of high value consumers

# Annexure 1

# *Phasing and Operationalization : Phase-I, Step 1*

## Step 1: Separation of Businesses

- Separation of wheeling and retail supply businesses is essential in order to accurately allocate costs, fixed assets, debt servicing, losses, etc. to the two functions. This includes:
- Maintenance of separate accounts
- Segregation of assets in order to correctly assess the GFA of each business
- Asset valuation for the purpose of asset segregation
- Allocation of employees to each function
- Allocation of distribution losses: Since the DNO is envisaged to own the network up to the consumer meter, technical losses can be attributed to the DNO whereas losses on account of commercial factors such as theft should be to the retailer's account. Allocation of losses is essential because normative loss targets shall be set for the distribution business at the time of regulatory approval of distribution tariff. Hence, the baseline loss data needs to be in place and agreed upon.
- Dealing with financial losses: In view of the huge accumulated losses currently on the books of accounts of Discoms, it may be recommended that a Special Purpose Vehicle (SPV) be formed to take over all existing losses as on Day Zero (01.04.2015). Thereafter, a regulatory surcharge may be levied on consumers of both incumbent Discoms as well as retail suppliers, all of which would be directed towards the SPV.

# *Phasing and Operationalization : Phase-I, Step 1*

## Step 1: Separation of Businesses – Issues and Recommendations

| | |
|---|---|
| Dealing with existing Distribution Franchisees | •Point for discussion: In future, how to deal with existing distribution franchisees?<br>• May be allowed to continue operations at existing terms & conditions but their contract may not be extended. |
| Data for determining baseline losses | • Regulators may be encouraged to direct distribution utilities to carry out segregation of feeders and/or achieve 100% metering so that distribution losses may be accurately estimated.<br>• Distribution utilities also need to be directed to start maintaining voltage-wise asset registers to determine voltage wise losses |
| Segregation of employees | • A manpower requirement/optimization study may be undertaken to help in optimizing manpower by phasing out certain posts once they fall vacant.<br>• A Government-funded Voluntary Retirement Scheme (VRS) is essential since efficiency in operations would be impossible to achieve unless unproductive/sub-productive employees are offloaded. |

# *Phasing and Operationalization : Phase-I, Step 1*

## Step 1: Separation of Businesses – Issues and Recommendations

**Loss of cross subsidy for incumbent Discom**

- In India, competitive market consumers may be loaded with a cross subsidy surcharge in initial years, to make operations viable for incumbent distribution companies with regard to its captive (i.e. non competitive) retail market
- Government may provide some sort of a viability gap funding in order to compensate incumbent Discom for the loss of high-tariff consumers, in view of the fact that tariffs cannot be increased substantially for Domestic category.
- Alternatively, a pool can be created on the lines of Philippines wherein, no matter whether the consumer has shifted to the new retailer or is still connected to the incumbent retailer, a pre-decided (regulated)per unit charge can be recovered under a separate head of cross subsidy surcharge, till the time the cross subsidy is phased out gradually.
- Cross-subsidies should be determined on the basis of voltage-wise cost to serve, for a true picture of the cross-subsidy burden being borne by some categories

# *Phasing and Operationalization : Phase-I, Step 1*

## Step 1: Separation of Businesses – Issues and Recommendations

### Illustration – Levy of Universal Charge to deal with loss of cross subsidy

| Category | Revenue (Rs Cr) | Sales (MU) | Tariff Y1 (Rs/Unit) | Tariff Y2 (Rs/Unit) | Tariff Y3 (Rs/Unit) |
|---|---|---|---|---|---|
| Domestic | 17.56 | 82.00 | 2.14 | 2.38 | 2.65 |
| *Average CoS* | | | *3.91* | *4.10* | *4.30* |
| Industrial | 40.84 | 67.38 | 6.06 | 6.19 | 6.32 |
| Total | **58.40** | | | | |
| **Transition Year 1** | | | | | |
| **Category** | **UC (Rs/Unit)** | **Rev from UC (Rs Cr)** | **Less per unit** | **Net realization** | **Realization by utility** |
| Domestic | 0.30 | 2.46 | | 2.44 | 20.02 |
| Industrial | 0.30 | 2.02 | 0.67 | 5.70 | 38.38 |
| Total | | **4.48** | | | **58.40** |
| **Transition Year 2** | | | | | |
| **Category** | **UC (Rs/Unit)** | **Rev from UC (Rs Cr)** | **Less per unit** | **Net realization** | **Realization by utility** |
| Domestic | 0.50 | 4.10 | | 2.88 | 23.62 |
| Industrial | 0.50 | 3.37 | 1.11 | 5.58 | 37.61 |
| | | **7.47** | | | **61.22** |
| **Transition Year 3** | | | | | |
| **Category** | **UC (Rs/Unit)** | **Rev from UC (Rs Cr)** | **Less per unit** | **Net realization** | **Realization by utility** |
| Domestic | 0.70 | 5.74 | | 3.35 | 27.43 |
| Industrial | 0.70 | 4.72 | 1.55 | 5.47 | 36.85 |
| | | **10.46** | | | **64.28** |

# *Phasing and Operationalization : Phase-I, Step 2*

## Step 2: Preliminary Operationalization

### Separation of Licenses

This would demarcate the roles & responsibilities of the two functions, as shown below:

***Distribution Network Business:***

- This business shall own the distribution network.
- The distribution network operator would have the following responsibilities:
  - Network planning (up to the consumer meter)
  - Capital expenditure on building and augmentation of the distribution network
  - Operation & maintenance of the network such as network reinforcement & replacement, improved overhead line repair, etc.
  - Fault restoration

***Retail Supply Business:***

- This business shall provide the last mile connectivity to consumer's point of supply
- The retail supplier would have the following responsibilities:
  - Power procurement and management of existing contracts
  - Existing power trading
  - Supply to consumer
  - Meter reading, meter-related operations
  - Consumer billing
  - Collection of revenue from consumers
  - Credit contracts
  - Customer care for meter, billing, collection related issues as well as for all technical problems (retailer to connect with network operator in case of technical problem)

# *Phasing and Operationalization : Phase-I, Step 2*

## Step 2: Preliminary Operationalization

| | |
|---|---|
| Transfer of Existing PPAs to Supply Licensee | • With the separation of licences and responsibilities, procurement of power would become the supply licensee's responsibility.<br>• All existing PPAs signed between generators and the erstwhile DISCOM shall be transferred to the incumbent supply licensee of the area as it is. |
| Area and Tenure of License | • In the initial stages, the entire state could be treated as one contiguous area of licence, otherwise private suppliers may not show interest in operating in rural areas or areas with economically weaker population.<br>• Competition can be ensured by issuing licences to several entities for the same licence areas.<br>• Licences may be provided for an initial period of 25 years, unless revoked, after which re-demarcation of supply areas may be considered. |
| Pricing of Electricity | • Network Business: Regulated Tariff (Voltage-wise)<br>• Supply Business: Regulated Tariff (with a concept of supply margin linked to losses). The supply margin can be crucial in attracting private players to the retail sector once the sector is thrown open to competition, since players will compete by increasing efficiencies.<br>• Consumers of 1 MW & above can take supply under open access, but will have to bear a cross subsidy surcharge. |

# *Phasing and Operationalization : Phase-I, Step 2*

## Step 2: Preliminary Operationalization

| | |
|---|---|
| Timeline for disposal of Open Access applications | • It may be recommended that all open access consumer applications be decided (either accepted or rejected with sufficient reason in writing) within a period of 1 month from the date of receipt of application. |
| Depth of Generation Capacity Market | • Medium term capacity market to be created for duration of 1-3 years.<br>• Capacities un-tied/released can participate in this market. National Load Dispatch Centre to be enabled for this |
| Market share of generators | • Divestment of generating companies may not be an option for India, at present.<br>• However, it must be kept in mind that for a truly competitive electricity market, the significant market shares of mammoth entities such as NTPC, NHPC, etc. should be monitored and preferably reduced. |

# *Phasing and Operationalization : Phase-I, Step 3*

## Step 3: Invite applications for second/subsequent supply license

After completion of two years from Day Zero, the designated Authority / Monitoring Committee shall invite applications for Second/Subsequent supply licence.

***Points for discussion:***

- What will be the nature and composition of the authority that will invite applications? Would it be state-wise (one for each state), region-wise or pan-India?
- As discussed before, what should be the area and tenure of supply licences?
- Would there be any eligibility criteria for supply licence applicants (net worth, quantum of tied up power, prior technical experience, etc.)
- Within how many days to dispose of (i.e. either accept/reject) supply licence applications?
- Would there be any public consultation in the entire process of issuing second/subsequent supply licences and if so, at what stage?

***Recommendation***

- The designated Authority / Monitoring Committee shall be responsible for either accepting or rejecting with detailed reasons any application for Second/Subsequent Supply License within 2 months from date of receipt of application.
- Under the current regulatory framework, such an authority can only be constituted at the state level.
- Initially, the entire state could be treated as one contiguous area of licence, otherwise private suppliers may not show interest in operating in rural areas or areas with economically weaker population.

# *Phasing and Operationalization : Phase-II, Step 4*

## Step 4: Putting retail competition into implementation

**Ownership separation**

- This would ensure that the distribution network licensee cannot be in the retail supply business any longer.
- ***Points for discussion:***
  - Should the basis of asset valuation be specified, and if so whether it should be historic cost, current cost, or the "regulatory asset valuation"?
  - Given the current financial position of distribution companies in the country, how to ensure divestment of such loss making entities? Divestment is a must since the distribution network operator can no longer have the same ownership as the retail supply function.
  - What if there are no takers for a particular area's supply licence?
  - Can competitive bidding be undertaken for selling off retail supply functions?

**Introduction of retail competition**

- Onset of second/subsequent supply licences.
- Retail competition would be introduced in a phased manner with 1 MW & above consumers first being given the opportunity to choose their own retail supplier from the competitive market.

# *Phasing and Operationalization : Phase-II, Step 4*

## Step 4: Putting retail competition into implementation

**Technical Issues**

- Separation of distribution and retail supply would require advanced metering, at least in the initial stages till the time there is sufficient power availability.
- Alternatively the customer with new supplier can be put on an independent feeder
- Or, The customer with new supplier would agree to load shedding in the area, as determined by the DNO.
- ***Points of discussion:***
  - What should be the timeline for reorganising the electrical network including advanced metering systems? (Should be completed at least for 1 MW & above consumers within 3 years from Day Zero, i.e. by the time retail competition is ushered in)
  - Who will bear the costs of investing in reorganising the electrical network including advanced metering systems?
  - Should a separate operator manage metering?
  - Impact of stranded investment cost of existing meters?

# *Phasing and Operationalization : Phase-II, Step 4*

## Step 4: Putting retail competition into implementation

| | |
|---|---|
| Timeline for readying infrastructure | • Delay in implementing IT, metering or related infrastructure could affect timelines of introducing retail competition.<br>• For discussion: Should there be penalty clauses for not achieving groundwork targets (essential for introducing retail competition) and if so, the modalities of imposing these penal clauses |
| Provider of Last Resort | • The 'Duty to Connect' would rest with the DNO who would be obliged to make available the distribution network on request and would be obliged to connect any person to the network on reasonable/approved terms.<br>• The 'Duty to Supply' would rest with both the incumbent Discom as well as competitive retail supplier(s) who would be obliged to meet all reasonable demands for supply of electricity made by customers within the areas that they operate, on reasonable/approved terms. They are also required to ensure that they have sufficient electricity at their disposal to meet their customer requirements. Hence, this obligation would be met through adequate contracts with generators or by establishing their own generation. |

# *Phasing and Operationalization : Phase-II, Step 4*

## Step 4: Putting retail competition into implementation

| | |
|---|---|
| Standard of Performance | • In the initial stages of retail competition, Standards of Performance would continue to be imposed on the incumbent Discom as well as competitive retail supplier(s) and would continue to be monitored by the Commission to check any negligence in meeting the specified standards of performance.<br>• With time, once the competitive retail market is deemed to be sufficiently evolved, Standards of Performance may be withdrawn since competition itself would demand and foster quality supply and good performance standards. |
| Federal structure | • The federal structure of India may lead to challenges in implementation of retail competition on the following counts:<br>  • Political will to separate ownership of distribution business<br>  • Possibility of segregation of such large businesses in one go across the country |

# *Phasing and Operationalization : Phase-II, Step 4*

## Step 4: Putting retail competition into implementation

**Power procurement by competitive retailer**

- Competitive retail supplier to procure power from the market or through bilateral trading, to supply to its market of consumers
- Rate of power purchase will determine the retail supplier's competitiveness to a large extent, along retail supply margin.
- **Point for discussion:** It may be discussed that whether procurement of a retail supply license is necessary in case a generating company wants to sell power directly to consumers.

**Components of retail supplier's tariff**

- Wheeling charges: Regulator determined
- Power purchase cost: As tied up / arranged by the retail supplier
- Retail Supply Margin: Fixed costs such as employee costs, interest costs, administrative expenses, etc. These are the costs with maximum scope for efficiency-linked reduction which would enhance the retail supplier's competitiveness.

**Additional:**

- Universal charge: Towards reducing cross-subsidy
- Regulatory surcharge: Towards the SPV that will take over all existing financial losses

# *Phasing and Operationalization : Phase-III, Step 5*

## Step 5: Further opening up of the Retail Supply Business

Further Opening Up of the Supply Business

- Subsequently, the retail supply business shall be made competitive for more and more consumer segments, with competition being introduced in phases.
  - Deregulation of less than 500 kW to 1 MW segment
  - Deregulation of less than 100 kW to 500 kW segment
  - Deregulation of consumers below 100 kW, including small commercial and domestic consumers
- ***Points for discussion:***
  - Once the separation of the businesses is done and Retail Competition is introduced, would the market still be regulated with the regulatory body capping the Maximum Retail Price? In other words, should the State Commission decide a price ceiling for all consumers, even the ones who are taking supply from second licensee?
  - Will there be regulatory control over the Quality of Service or it will purely be survival of the fittest? In the latter case, can it be possible that the overall quality deteriorates across all the Retailers due to the lack of any regulatory control?
  - Will the pricing strategy be controlled? For example, some retailers might come up with two-tier pricing, offering more discounts to the consumers switching over than the prices being offered to the existing consumers, or vice-versa?

# *Phasing and Operationalization : Phase-III, Step 5*

## Step 5: Further opening up of the Retail Supply Business

Further Opening Up of the Supply Business

- ***Points for discussion***:
  - How will the transition issues be taken care of?
    - The transfer of services from one retailer to another, in case a consumer decides to switch. How would the two retailers (old and new) co-ordinate with the physical transfer of the connection apart from the legal formalities?
    - In case of any dispute, how will the transfer of connection occur? For example if the consumer has not cleared the dues with the previous retailer.
    - Will the same meter be used for the billing purpose or the new retailer installs its own meters?
    - How consumer awareness will be made to encourage them to switch, in case there are more competitive options (which sure will be)? Because, in Australia, by the end of first year the switching of consumers was found to be much less.
    - How will the consumers be protected from the misleading marketing campaigns?
    - Will the second licensee have access only to the deregulated segment of the existing market, or will he also get access to any new consumer taking new connection? If he may be allowed to supply to any new consumer (irrespective of whether that consumer belongs to the deregulated segment of the existing market, or not), at what tariff can the retailer supply to the new consumers – regulated tariff / deregulated tariff with a maximum cap?

# *Phasing and Operationalization : Phase-III, Step 5*

## Step 5: Further opening up of the Retail Supply Business

Further Opening Up of the Supply Business

- ***Recommendations:***
  - SERC may set a price cap for Retail Supply Margin
  - SERC may set a minimum benchmark for Quality of Supply and may review conditions frequently.
  - Consumer awareness to be generated to encourage consumers to switch suppliers if needed, when faced with competitive options
  - Regarding consumer issues during transition, these would need to be sorted out between the two retail suppliers and the consumer, and the matter if unresolved may be escalated to an ombudsman. Regarding clearing of old dues being mandatory for switching to another retail supplier, ideally security deposit should take care of outstanding dues. Dues owed to the incumbent Discom / previous retailer should not be of concern to the second/competitive retailer.

# Section 6
# *International Experience*

- Liberalisation Blueprint
- Case Study I – UK
- Case Study II – Australia
- Case Study III – Argentina
- Case Study IV – Philippines

# *Liberalisation Blueprint*

## 1. Vertical Separation

- Separation of Potentially competitive (Generation and Retail supply) business segments from the Regulated (Transmission and Distribution) segments

## 2. Horizontal Restructuring - Generation

- To create adequate number of generators to make a competitive wholesale market and negating market power of a dominant generator.

## 3. Horizontal Integration – Transmission

- Transmission facilities to encapsulate 'natural' wholesale markets. Creation of **Single Independent** TSO.

## 4 . Wholesale Markets

- Creation of voluntary public wholesale  spot energy and operating reserve markets

## 5.Demand Side Institutions

- Creation of Demand side institutions that allow customers to react to variations in wholesale prices, thus integrating demand side responses into wholesale and retail markets

# *Liberalisation Blueprint (Contd.)*

## 6. Efficient Transmission Access

- Regulation to ensure efficient transmission access to wholesale buyers and sellers so that scarce resources can be allocated amongst competing network users

## 7. Unbundling of Retail and Network (Wheeling) Tariffs

- Separation of energy retail tariff from energy network (wheeling) tariff to enable separation of businesses.

## 8. Policy measures for 'Regulated' Customers

- If some market segments (for e.g customers < 300 kW ) are chosen not be opened to competition then regulatory and policy measures to ensure supply are needed

## 9. Regulatory agencies for T&D businesses

- Regulatory agencies to regulate these businesses, their costs, service quality, their standards etc with an aim to define their tariffs .

## 10. Transition Plan

- A Transition plan is needed for movement between old and new system. Later section of this presentation is an attempt to suggest such a plan.

# *International Experience: United Kingdom … (1)*

| Time Period | Details |
|---|---|
| July 1989 | The Electricity Act, 1989 |
| 1 April 1990 | • Vesting Day: A new industry structure introduced in England and Wales. CEGB split into 3 generating companies (National Power, Powergen and Nuclear Electric) and a transmission company (National Grid Company).<br>• The England & Wales Electricity Pool began trading<br>• Customers with peak loads of more than 1 MW (about 45% of the non-domestic market) allowed to choose their supplier (Approx 5000 in number) |
| Dec 1990 | All 12 RECs floated on the LSE |
| March 1991 | Flotation of National Power and Powergen (60% shares of each sold, remaining 40% share of the government sold off in March 1995) |
| April 1994 | Customers with peak loads of more than 100 kW allowed to choose their **supplier** (Approx 45,000 in number) |
| 1994 to 1996 | Growing concerns about price manipulation led the regulator to require the two generating companies to sell some of their generating capacity to reduce their market share. By 2000 there were eight leading generating companies and Offer introduced an amendment to their licences, a Market Abuse Limitation Clause, which required them to commit themselves not to indulge in "abuse of substantial market power in the setting of wholesale electricity prices." |

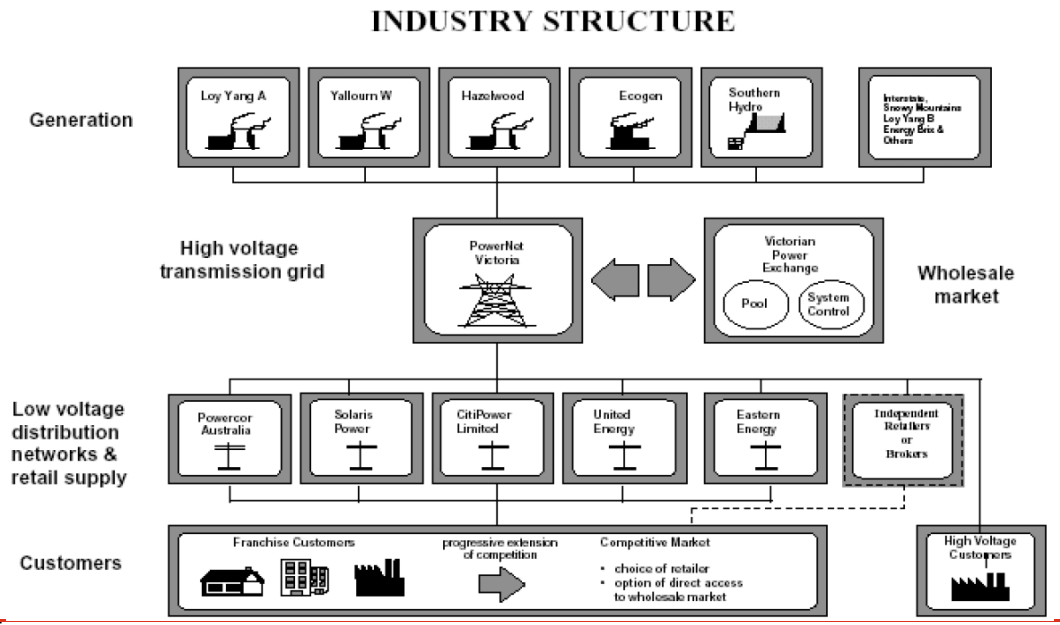
# *International Experience: United Kingdom … (2)*

| Time Period | Details |
|---|---|
| May 1998 | Beginning in May 1998, RETA (Review of Electricity Trading Arrangements) was launched with the stated aim of developing an entirely new wholesale market mechanism to replace the Pool. |
| Sept 1998 – May 1999 | The remaining part of the electricity market (i.e. below the 100 kW peak load) opened up to competition (Nearly 26 million in number) |
| 2000 | Utilities Act, 2000 |
| 2000 - 2001 | Operationalization of New Electricity Trading Arrangements (NETA) which finally began trading on 27 March 2001 |
| October 2001 | Implementation of the licensing provisions of the Utilities Act, 2000. Complete segregation of electricity distribution and supply with Section 30 (2) mandating that "the same person may not be the holder of both a distribution licence and a supply licence." Hence two different types of supply licences (PES licences and second-tier supply licences) replaced with one type of supply licence, and the distribution company may not hold a supply licence at all. |
| 2005 | Expansion of NETA into the British Electricity Transmission and Trading Arrangements (BETTA), bringing Scotland into the market for the first time |

# *International Experience: Victoria, Australia … (1)*

| Time Period | Details |
|---|---|
| Up to the 1970s | Up to 1970, the electricity sector in Australia was completely monopolistic with the government owning most of the assets and State Electricity Commission of Victoria (SECV) was the governing body then. |
| 1982 | Debt to the extent of $3.4 Billion |
| 1983 | Appointment of a CEO for whom commercial viability was a prime concern |
| 1987 | Commercial Strategy formed which emphasized on the commercial principles of customer service and efficiency. |
| 1992 | New Liberal Government with a mandate to reform public utilities and liberalise utility markets |
| 1992 | The Council of Australian Government (COAG) created a National Competitive Market for Electricity under the National Competition Policy. |
| 1993 | A team of consultants was appointed to determine the structural changes to be made. It was then determined that disaggregation of SECV into Generation, Transmission and Distribution and Retail was required to be carried out in order to introduce competition in the electricity sector. |
| 1993 | Under the Electricity Act of 1993, three new government companies were formed out of the SECV viz. Generation Victoria (Generation), National Electricity (Transmission) & Electricity Services Victoria (Distribution and Retail) |

# *International Experience: Victoria, Australia … (2)*

| Time Period | Details |
|---|---|
| 1994 | • Generation and Distribution/Retail companies were divided into 5 companies each based on their geographical location, in order to introduce a fully contestable market.<br>• Transmission was also split into two companies viz. Power Net Victoria (a pole and wire company to maintain and manage the high voltage grid) and VicPower Exchange (to administer and monitor the wholesale electricity market and ensure safe supply)<br>• Office of Regulator General (ORG) was established to oversee the electricity sector as an independent regulatory body. The role of the ORG was to regulate prices, oversee service efficiency and facilitate market-based competition. |
| 1995 |  |

# *International Experience: Victoria, Australia … (3)*

| Time Period | Details |
|---|---|
| 1995 | The five distribution/retail were sold off to international purchasers predominantly and the licenses for the same were issued by ORG, with the same obligations as those applicable to the former Govt. owned entities. |
| May'96 - Jun'99 | Generation companies also sold off to private purchasers |
| 1995 - 1999 | Between 1995 and 1999, the former SECV's assets were individually sold off to private owners. The sale of Victoria's electricity assets coincided with the broader economic agenda of privatizing Victoria's assets in order to combat the State's significant level of debt and the perceived inefficiencies of state-owned industries. |
| 1998 | The proposed National Competition Policy got implemented with the establishment of the New Electricity Market – an interconnected wholesale generation grid linking Victoria, Queensland, New South Wales, the Australian Capital and South Australia. |

The final stage of reform was the introduction of Full Retail Competition to consumers, where retailers would compete to sell electricity services to consumers outside their designated geographic region.

| *Period* | *Consumer segment opened up* | *Load details* | *Approx consumers* |
|---|---|---|---|
| Dec 1994 | Large industrial consumers | > 5 MW | 47 |
| Jul 1995 | Large commercial consumers | 1 – 5 MW | 330 |
| Jul 1996 | Medium industrial / commercial users | 750 kW– 1 MW | 2000 |
| Jul 1998 | Small industrial / commercial users | 160 – 750 kW | > 8000 |
| Jan 2002 | Domestic; Small business consumers | Under 40 kW | 2,000,000 |

# *International Experience: Argentina … (1)*

## Before

- One of the first countries to restructure the electricity industry, following on from Chile and UK
- In 1989 Argentina had 3 state owned utilities offering generation, transmission and distribution services. Some provincial utilities (distributors) and electricity cooperatives also existed
- Spot prices were around $45/MWh in 1992
- T&D losses ~ 25%

## After

- Between 1992-95, 25 state operated companies privatised
- Highly competitive generation market - By 2000, there were 43 companies owning 96 plants (60 Thermal, 34 Hydro and 2 Nuclear)
- Spot prices fell to ~ $27/MWh in 2000
- T&D losses ~7% in 1999
- Improved supply hours

# *International Experience: Argentina … (2)*

- **1990** – Removal of Government from **direct** operation in electricity industry and introduction of competition
- **1992 –** Act to restructure and privatize industry passed.
  - The Act divided the electricity industry into generation, transmission, and distribution
  - Generation became competitive
  - Transmission and distribution became regulated private monopolies.
- Generation companies privatized. Conventional electricity (thermal and hydroelectric) facilities were sold separately, making each privatized generation facility an independent power producer.
- Creation of independent market regulator (ENRE), Wholesale electronic market (MEM) and its independent operator (CAMMESA)
- ENRE was charged with enforcing laws, regulations and concession terms, setting distribution service standards, resolving disputes between electricity companies, overseeing CAMMESA, and setting maximum electricity prices.
- The MEM is a power pool aggregating electricity supply from all generation sources, comprising:
  - A term market consisting of agreements for which quantities, prices and conditions are negotiated directly between buyers and sellers;
  - A spot market with hourly prices taking into consideration economic production costs; and
  - A balancing market.

# *International Experience: Argentina … (3)*

- CAMMESA administers the wholesale market. It is a non-profit corporation equally owned by the federal government and four associations representing generators, transmitters, distributors, and major users. It is in charge of scheduling and dispatching generators in accordance with the power demand, on the basis of using marginal costs and availability offered by generators, employing those generators offering the lowest marginal costs first.
- The law also established a Federal Energy Council to advise the Secretary of Energy and the Congress and administer the National Fund of Electricity, which is used for regional subsidies.
- Power generation companies are not allowed to own majority shares in Argentina's three transmission companies.
- The transmission & distribution companies have to provide open access to their systems for the power generators on a regulated basis.
- Distribution companies are organized as regional monopolies and permitted to buy electricity from the MEM or through contracts with power generation companies.
- The energy market was liberalized for customers with demands greater than 5MW, this has been successively reduced to 30KW. These customers are free to contract directly with generators and can participate directly in the generation market.
- Tariff for Regulated customers (below 30 KW) is calculated by a formula that takes into account the wholesale prices, seasonality, capacity and local charges, if any.

# *International Experience: Philippines … (1)*

- Introduction of competition in retail electricity supply is still underway in Philippines.
- The process has only been etched out in terms of timelines in the country's Electricity Power Industry Reform Act (EPIRA) of 2001.
- ***Wholesale Electricity Spot Market (WESM)***
  - The WESM has been created to introduce competition in the electricity market in Philippines.
  - The market provides the mechanism for identifying and setting the price of actual variations from the quantities transacted under contracts between sellers and purchasers of electricity.
  - The wholesale electricity spot market was implemented by a market operator in accordance with the wholesale electricity spot market rules.
  - The market operator so appointed had to be an autonomous group, constituted by the Department of Energy, with equitable representation from electric power industry participants, initially under the administrative supervision of the Transmission Commission (TRANSCO).

# *International Experience: Philippines … (2)*

- ***Cross Subsidy Reduction***
  - The Electricity Power Industry Reform Act (EPIRA) of 2001 mandates that all types of cross subsidies be phased out within a specified period.
  - Before the passage of the law, three types of electricity cross-subsidies existed in Philippines – inter-class cross subsidy, inter-regional grid cross subsidy and intra-regional grid cross subsidy
  - Pending the complete removal of cross subsidies, each cross subsidy rate level is to be shown as a separate item in customer billing statements.
  - The ERC was mandated to establish a Universal Charge (UC) to be recovered from all electricity end-users to account for (among other factors) all forms of cross subsidies that remain during the phase out period. Other factors recovered through UC are payment for stranded debts, missionary electrification, equalization of taxes, and an environmental charge.
  - The UC was envisioned as a non-bypassable charge collected from all end-users (except threshold and lifeline consumers) every month based on the approval of the ERC.

# Agenda Item 6:
# CERC Staff Paper on "Introduction of Ancillary Services in Indian Electricity Market"

**36th Meeting of Forum of Regulators** **19th April, 2013**

# In this presentation….

- Drivers for Ancillary Services in India
- What Ancillary Services seek to achieve
- Ancillary Services  - proposed framework
- Issues

# Drivers for Ancillary Services in India

- Reliability and security of grid
- Un-utilized resources despite shortage
- Variability of renewable generation
- Restructured power industry

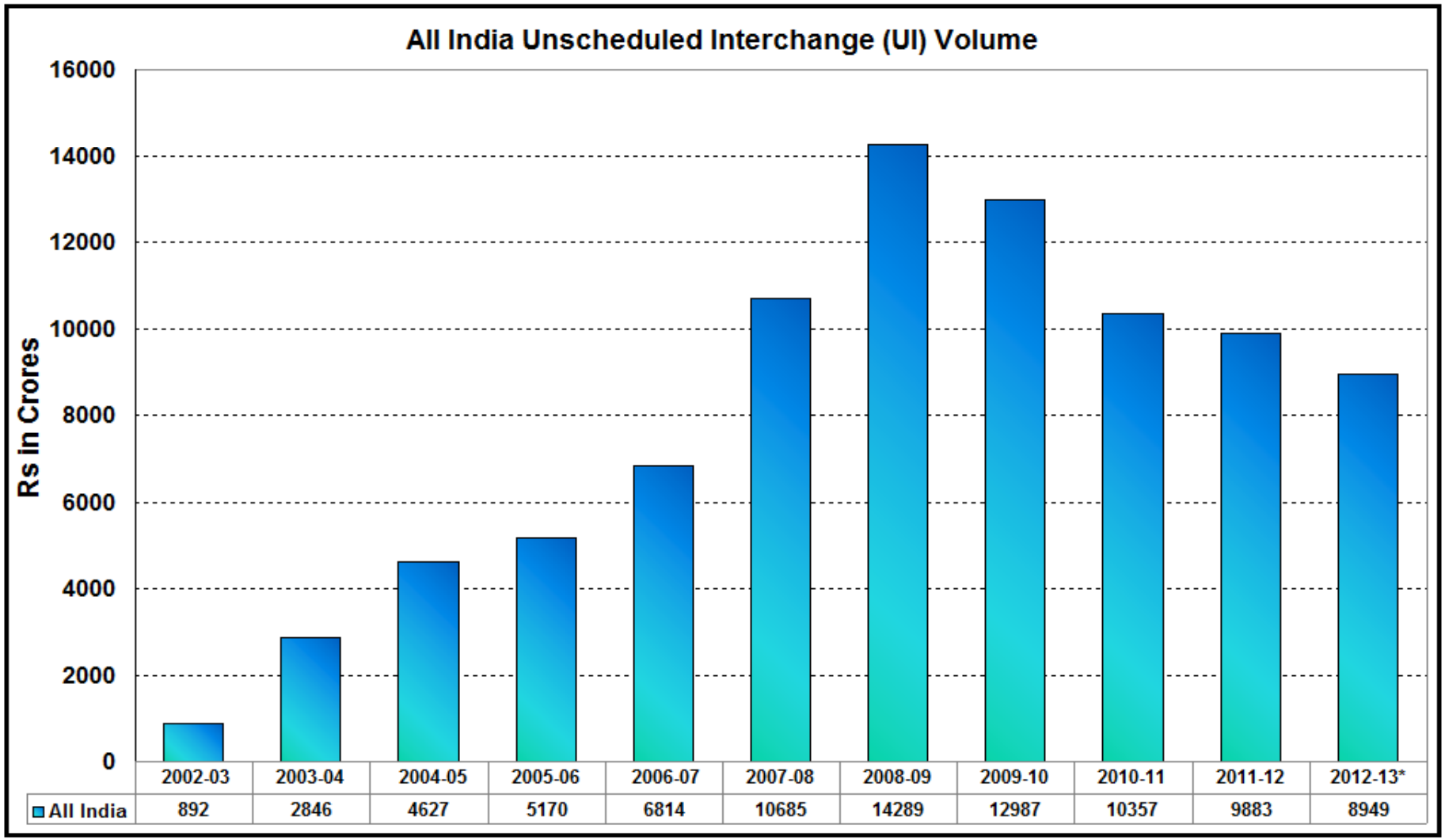
# Driver….(1)

- Grid Security and Reliability

# Grid Security and Reliability

- Framework in IEGC
- Tightening of frequency band – permissible range for deviation
- Deterrent in the form high UI charges

# Declining UI Volumes




| | 2002-03 | 2003-04 | 2004-05 | 2005-06 | 2006-07 | 2007-08 | 2008-09 | 2009-10 | 2010-11 | 2011-12 | 2012-13* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All India | 892 | 2846 | 4627 | 5170 | 6814 | 10685 | 14289 | 12987 | 10357 | 9883 | 8949 |

# Grid Security and Reliability

- But all this is not enough……..

- Need for exploring all kinds of market products before kicking in imbalance settlement

# Driver….(2)

- Shortage of supply and unutilised generation sources

  - a paradox

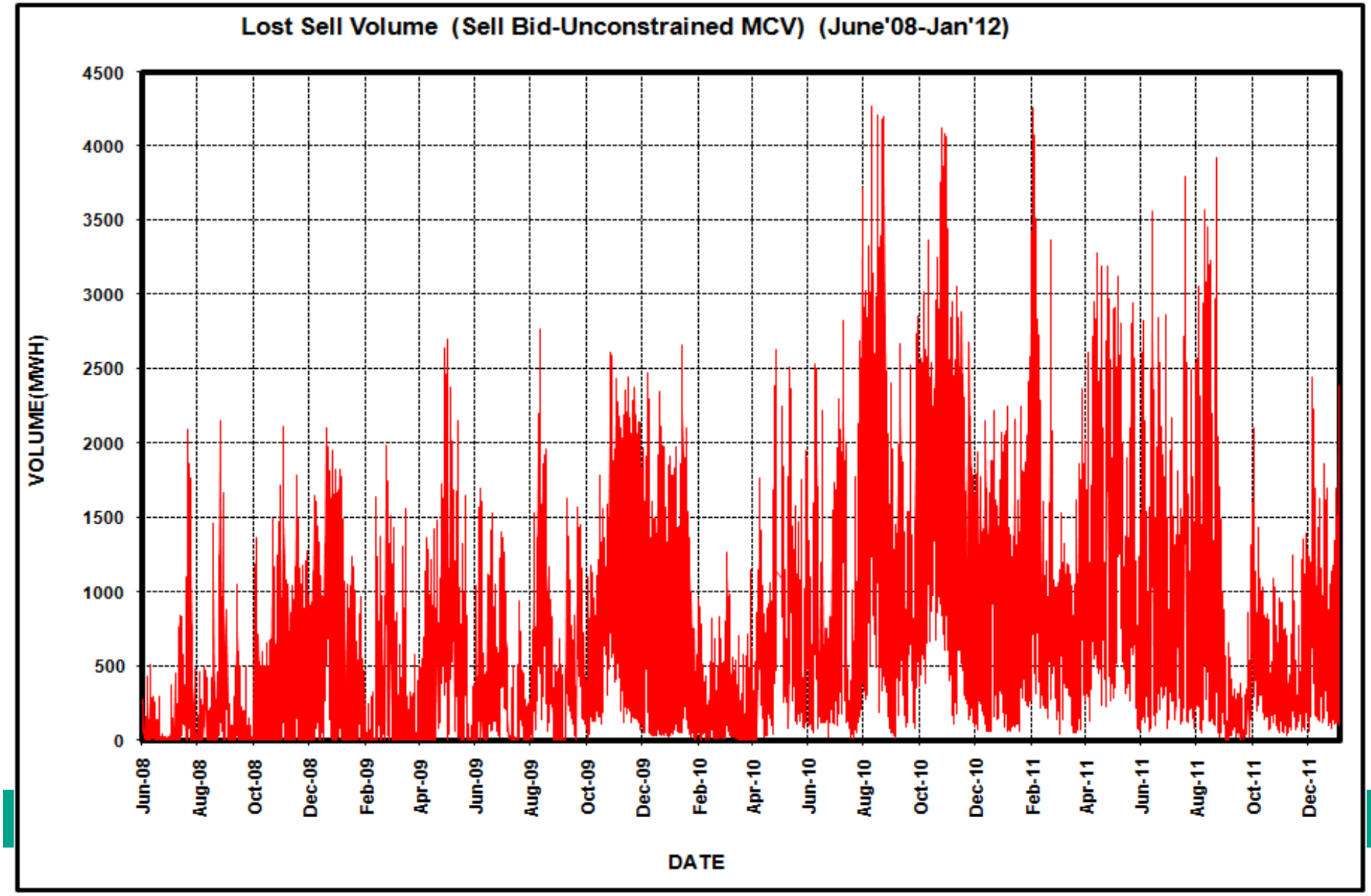
# Power Supply Position (February'13)

| Region | Energy (MU) Requirement | Deficit % | Peak Demand (MW) | Deficit % |
|---|---|---|---|---|
| Northern | 19,967 | -8.0 | 36,923 | -9.3 |
| Western | 21,456 | -1.9 | 37,343 | -2.6 |
| Southern | 22,544 | -16.5 | 35,901 | -13.1 |
| Eastern | 8,133 | -4.6 | 14,338 | -5.3 |
| North Eastern | 877 | -6.7 | 1,934 | -4.6 |

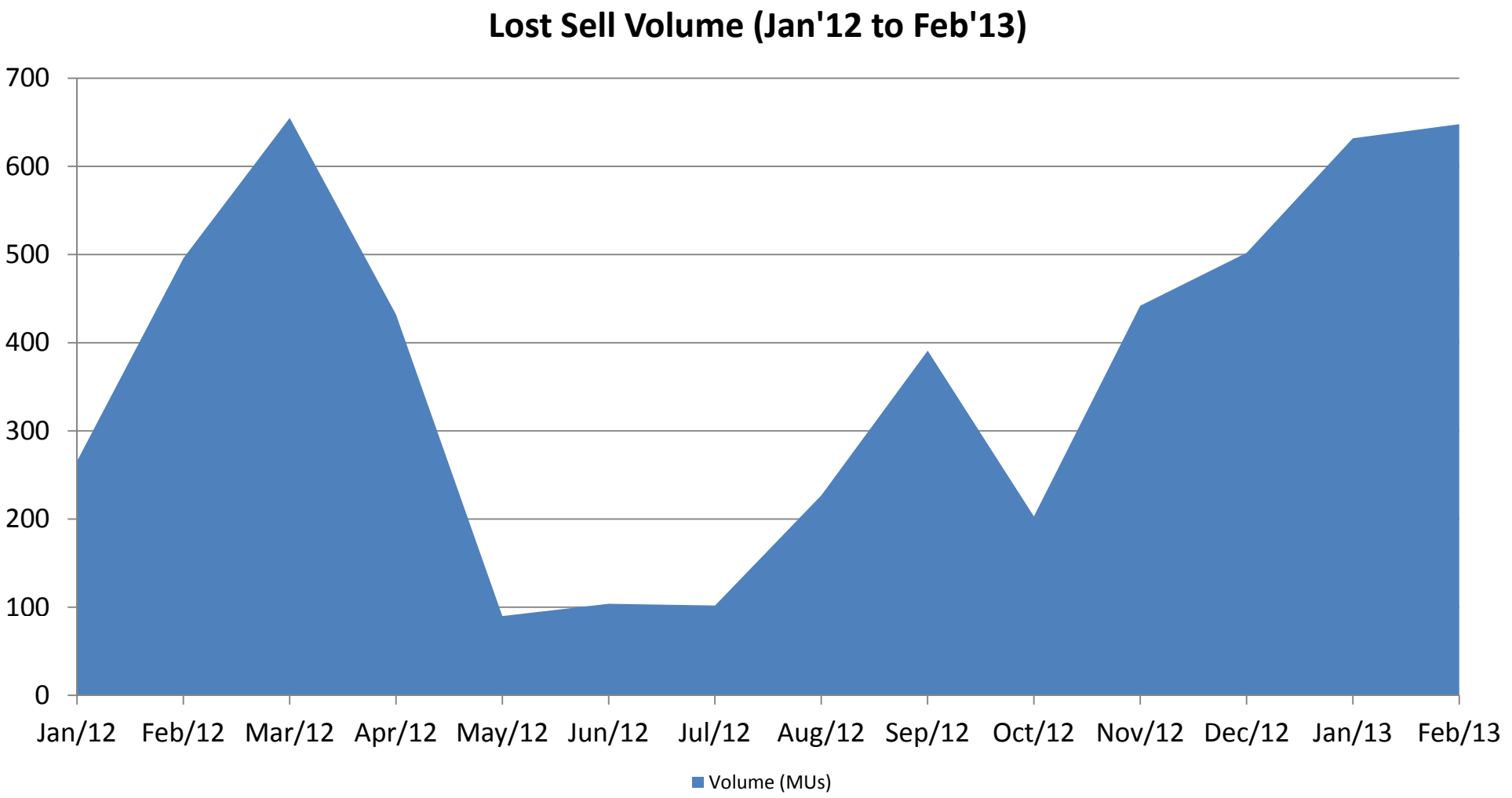
* Provisional

Source: CEA Monthly Report

# Unharnessed generation capacity – PX (specific period)



# Unharnessed generation capacity – PX (specific period)



# What could be the reason….

- Congestion……high cost (perceived , if compared to value of lost load)!
- Could be absence of flexibility and customisation of products
  - Available Avenues for procurement of Power
    - Long Term Contracts
    - Short Term Open Access (STOA)/Bilateral (OTC)
    - Collective Transactions through Power Exchange(s)
    - Unscheduled Interchange (UI)
  - Standardized Products available in STOA
    - Bilateral: Advance, FCFS, Day-Ahead, Contingency
    - Collective Transactions: Day-Ahead

There is a need for

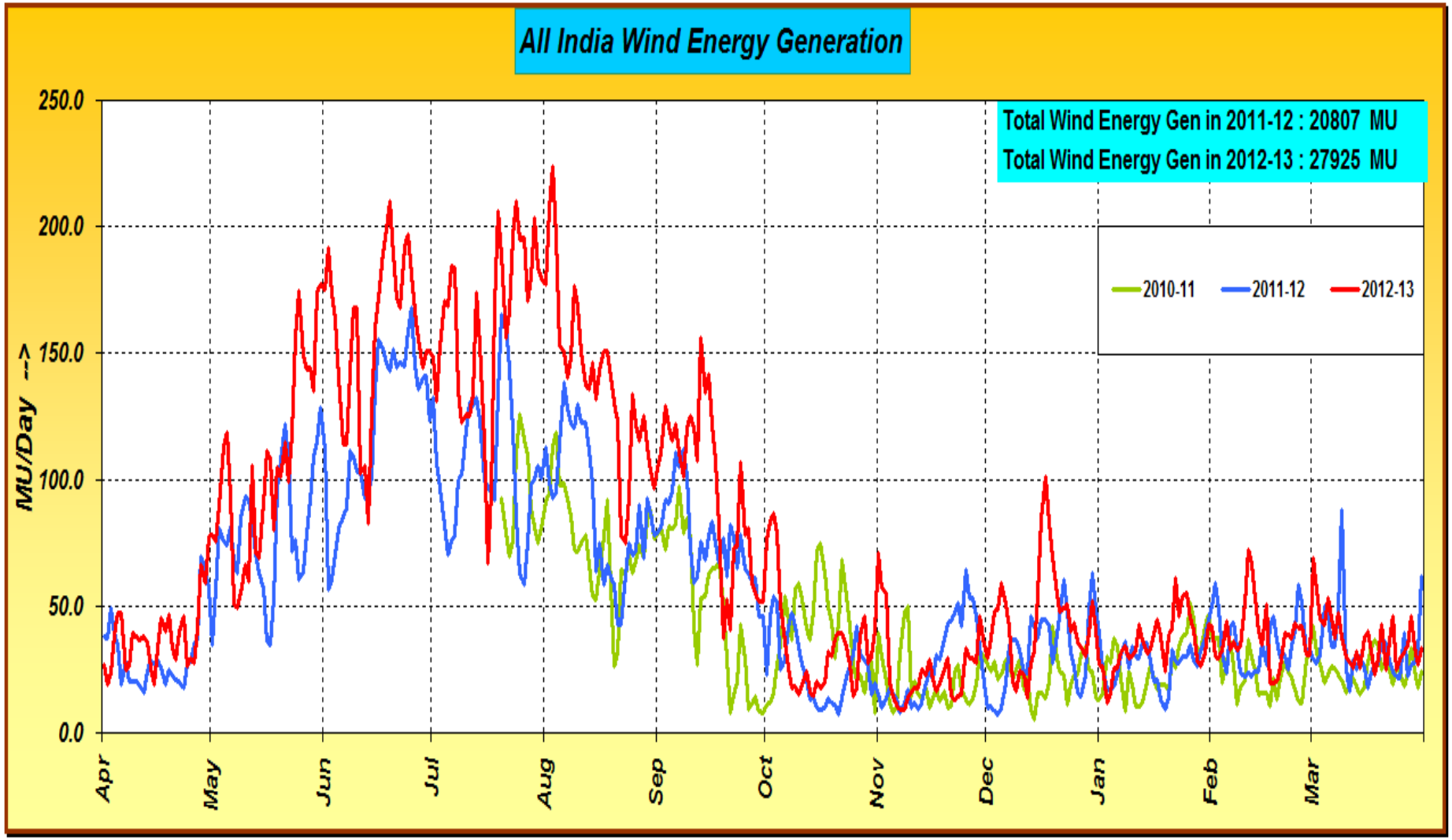
  - Flexibility and customization
  - Harnessing all available generation resources before load shedding

# Driver….(3)

- Variability of renewable generation

# Variation in Wind generation

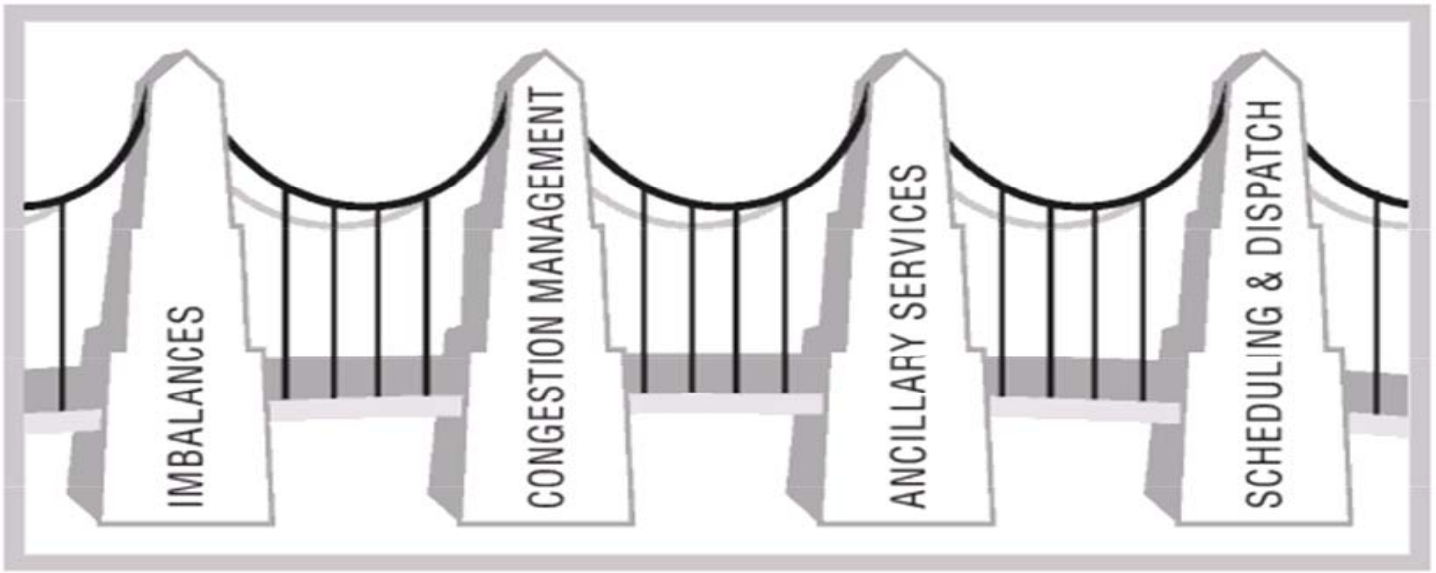
**Variability in Generation**
**Narrowing Frequency Band**



# Wide variation in renewable generation

- Need for a mechanism to handle variation

# Four Pillars of market operation



# What would Ancillary Services achieve in Indian context??

- Harness leftover Generation at Optimum Cost
  - Help the grid – Improved frequency profile
  - Opportunity for the Generators
- Reduce load shedding (eventual reduction in use of DG sets etc.)
- Alleviate congestion in transmission to some extent
- Optimum utilization of peakers and pumped storage plants
- Renewable Generation
  - Handling Variation thereby facilitating integration

# Ancillary Services- Proposed Framework

- Staff of CERC has issued a Staff Paper on "Introduction of Ancillary Services in Indian Electricity Market".
- Views of stakeholders have been invited through the Staff paper on ancillary services.

# Staff Paper

- To start with following Ancillary Services could be introduced:

✓ Frequency Support Ancillary Services (FSAS).

✓ Voltage Support Ancillary Services (VCAS).

✓ Black Start Ancillary Service (BSAS).

# How would Ancillary Services operate??

- Competitive Bidding Process
  - Through Power Exchanges (one sided bidding)
- Compilation and stacking of bids
  - Despatch of bids in real time based on frequency profile
  - Merit Order to be followed
- Settlement System
  - Overdrawing entities to pay.
  - Payment to sellers through respective Power Exchange(s)

# Bidding and Price Discovery of FSAS

Day 1

Closure and clearance of DAM
Opening of window for FSAS for 2 hrs

Time block (2 hr) wise bid quantum and price for FSAS.

Un-requisitioned surplus from ISGSs (mandatory)

**Power Exchange**

Preparation of combined bid

Area-wise, Time block-wise stack of bids (Merit Order Principle)

**Nodal Agency**

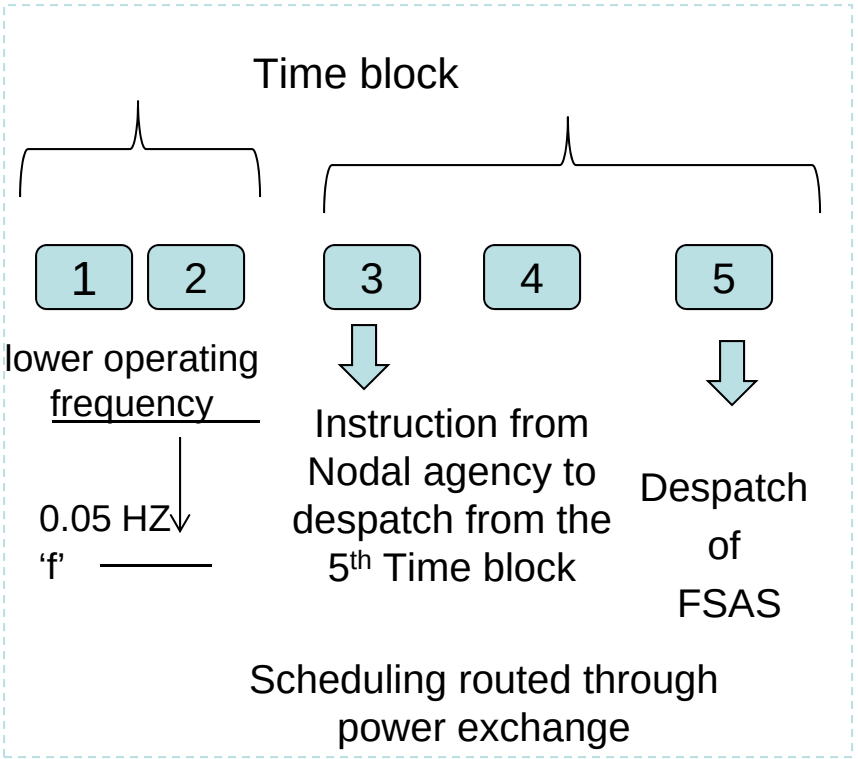
**Price Discovery**

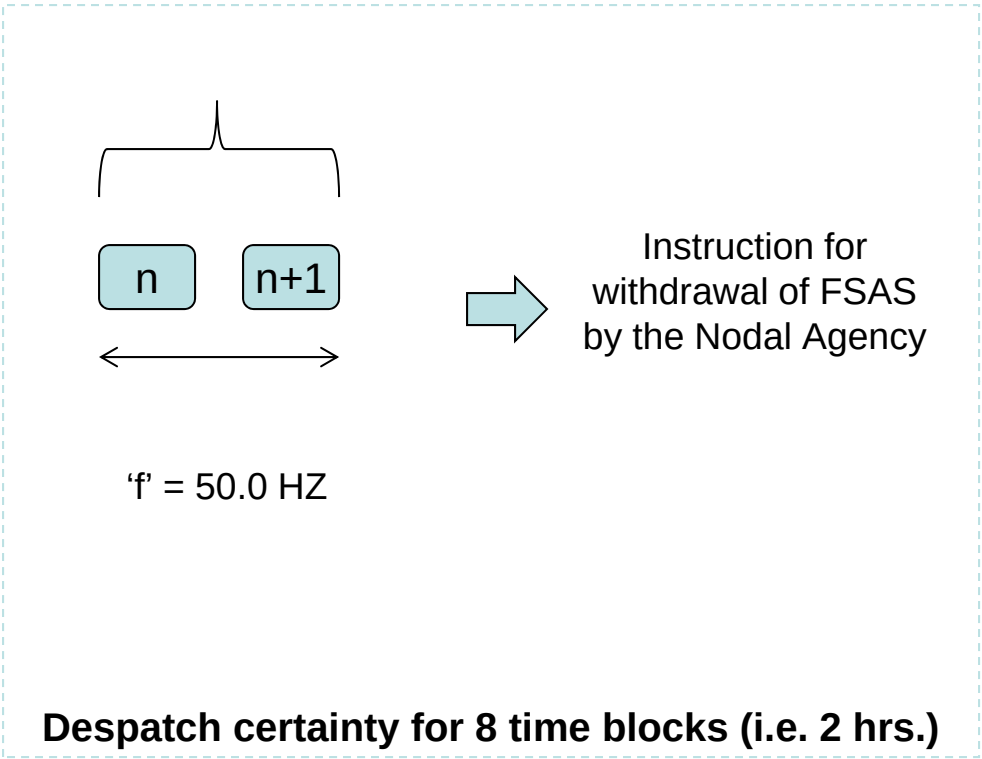
"Pay as bid': Amount payable ~ Dispatched quantum at bid price

Sharing of revenue (regulated generators): Over and above the fuel cost on 1:1 with the beneficiaries.

# Despatch of FSAS

Day 2




The limit of the Available Transfer Capability (ATC) across the control area to be followed while despatching the bids

- Withdrawal instruction before completion of 2 hrs: 50% of the bid price for the remaining period.
- Seller to pay 1.5 times the bid price or the applicable UI rate (which ever is higher), if it fails to supply the committed generation.

# Legal Perspective

- EA 2003, Section 27 (2):

  "Provided further that no Regional Load Despatch Centre shall engage in the business of generation of electricity or trading in electricity."

- Similar to Day Ahead Market
  - Facilitation through power exchanges
- System Operator's Role
  - Despatch Decision
  - Involvement in trading in electricity is avoided

# Issues

# Issues- Need for Ancillary Services

**Argument (1):**

- System has achieved stable grid frequency since the twin grid failures.
- Strong corrective measures are being taken up.

**Argument (2):**

- Ancillary market has not emerged from the incidences of grid failure.
- Objective is to ensure grid security- introduction of such services should not wait for occurrence of grid indiscipline.

# Issues- Payment Risk

**Argument (1):**

- Default in UI Payment: Buyers remain the same in Ancillary Services.
- Risk of default in payment by the buyers: Financial risk for power exchanges.

**Argument (2):**

- Provision for Clearing House in CERC Power Market Regulations.
- All the trades by market participants may be routed through the clearing house irrespective of the participation in the exchanges or bilateral market.
  - Some form of payment security mechanism may be evolved for handling payment risk through the Clearing house. .

# Issues- Linkage to UI Ceiling Rate

**Argument (1):**

- Ceiling Price: UI rate (without additional UI rate).
  - In conflict with the philosophy of doing away with UI mechanism.
- May encourage gaming.

**Argument (2):**

- The ceiling prices may be de-linked or changed according to changing UI mechanism or indexed against a new reference in future.

# Issues- Possible Breach of PPAs

**Argument (1):**

- Generators may get lured by high cost of despatch under FSAS.
  - May breach contracts to supply power under FSAS.
- The upcoming generators, with un-identified beneficiaries, may indulge in gaming to get better price.

**Argument (2):**

- Mandatory declaration by the providers of the Ancillary Services (generators) regarding the un-requisitioned surplus capacity being committed under Ancillary Services in an affidavit submitted to Power Exchange.

# Issues- Load Management by Utilities

**Argument (1):**

- High cost of power imposed by Ancillary Services could be avoided through load shedding.

**Argument (2):**

- There will be no imposition of additional burden as the overdrawing entities may choose not to overdraw .
- Value of lost load.
- Can reduce instances of additional charge on UI.

# Issues- Market Design

**Argument (1):**

- Sequential Auction.
  - Energy Market to be cleared first.
  - Bid for balance unsold quantity of power in Ancillary Market.
- International Experience: Sometimes this market leads to problems of economic withholding and price reversal.

**Argument (2):**

- Different market design prevalent in the advanced markets.
  - Simultaneous or Simultaneous Co-optimization auction of energy and Ancillary Services
- With introduction of different products like 10 minute and 30 minute Ancillary service, these new market designs can be tried in India.

# Issues- Commitment Charge

**Argument (1):**

- Need of commitment charge to provide sufficient incentive to attract generators.
- Additional avenue for sale of power:
  - Flexibility to generator to sell in short term market. Bids in the Ancillary market to be treated as withdrawn.

**Argument (2):**

- The service provider be allowed to bid in two parts.
  - While Capacity charge (which may include Start up cost) may be paid as commitment charge, energy charge can be paid for actual Ancillary Service Energy provided during system operation.

# Issues- Forecasting

**Argument (1):**

- System operator to provide load generation balance forecasting on daily basis for procurement of Ancillary Services.
- Forecasting a challenging job for system operator: As it depends on correct inputs from State Load Despatch Centers.

**Argument (2):**

- In view of increasing Renewable participation in Indian Grid, it is required that Load Forecasting capabilities at all level are improved to avoid uneconomic decisions in procurement of Ancillary Power.

*Thank You*

# Frequency Support Ancillary Services (FSAS)

**Eligibility**

- All the sellers and regional entities which are part of the scheduling and deviation settlement mechanism for real and reactive power with voice and data telemetry facilities in accordance with CERC/CEA regulations.
- No Objection Certificate (NOC)/ Standing Clearance issued by the concerned SLDC/RLDC to be considered valid for participation in the ancillary services market subject to the condition that the capacity cleared for day ahead transaction in power exchanges for any participant plus the capacity cleared for FSAS shall not exceed the total capacity for which SLDC clearance has been obtained.
- **Market Platform:** Competitive bidding at Power Exchanges.

***Participation : Undespatched Surplus, Peaking Gas Stations, Pumped Storage Plants***

# Accounting and Settlement of FSAS

- The power despatched under FSAS to be incorporated into the schedule of the overdrawing entities by the respective LDC.
- Payment to bidders: From the overdrawing entities in proportion of the quantum of overdrawal through power exchange.
- Payment on the basis of the scheduled quantum after accounting for under-injection.
- No commitment charges payable to the bidders.
- Ceiling Price: Upper limit of UI rate (without additional UI).
- Energy despatched: Deemed to be delivered at Regional periphery.
- The under injection by the FSAS provider to be treated as per the CERC Unscheduled Interchange Regulations.
- Any over injection not to be paid for.

# Voltage Control Ancillary Services (VCAS)

- Price bids on nodal basis on power exchanges.
- Nodal agency to prepare combined node-wise stack based on the stack furnished by power exchanges.
- Payment: “Pay as Bid” on the actual node-wise reactive support.
  - Max ceiling rate: As provided in IEGC.
  - To be paid as specified in Regulation 6.6 of the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010.
- The mobile VCAS may be provided by the Government owned transmission companies. The despatch and withdrawal of node-wise voltage support instruction for VCAS to be as per the IEGC. The payment to be made to the supporting entity by booking against the reactive energy drawing utility.

# Black Start Ancillary Services (BSAS)

- BSAS to be paid as when the same is required by the nodal agency. The generators capable of providing start up power to mandatorily provide the Black Start Services as per the instructions of the load despatchers.
- Payment: One day capacity charges to such generators on the day of providing the BSS. The energy charges to be paid at twice the energy charges determined by the Commission for the volume of energy supplied during the restoration process.
- Other flexible generators providing BSAS to be paid fixed and energy charges on the normative figure to be specified separately.

# Drafting a Model Legislation on State Electricity Distribution Responsibility Bill

**Forum of Regulators**

**19th April 2013**

# Structure of the Presentation

**Key Focus areas**

- **Objective of the assignment**
- **Approach**
- **Framework of the proposed bill**

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# Objective of the Assignment

- To suggest draft model legislation on State Electricity Distribution Responsibility Bill;
- The model legislation on State Electricity Distribution Responsibility shall seek to ensure efficiency in the performance of the distribution business of the State owned distribution utilities.;
- It shall aim at identifying the responsibility and areas of accountability for the State Government to ensure viability of distribution business.

# Background

- Distribution is a crucial link in the power sector value chain;
- Financial Viability of Distribution business is a necessity for a healthy & vibrant power sector;
- Govt. of India has in the past initiated various schemes/programs to reform and revitalise this segment in the form of:
  - Supporting write-offs, capital investments, formulation of various incentives schemes, providing enabling legal framework for improved performance on sustainable basis;
- However, the results have not been very encouraging - performance & financial condition of the distribution companies has deteriorated;
  - Important reason for the same can be the lack of ownership of the follow up actions required to sustain the benefits that accrued from various measures taken by the Government of India;
- Government of India is again formulating a scheme for Financial restructuring of State owned Discoms for their financial turnaround and ensure their long term viability;

**State Electricity Distribution Responsibility Bill is proposed to be formulated with an objective to cast responsibility on the key stakeholder i.e the State Government for taking measures enabling the financial turnaround of state-owned electricity distribution licensees**

# Framework of the proposed Bill

# Areas of Intervention……(1)

## Long term Planning

- Power Purchase Planning and procurement in short/medium/long term with the approval of the SERC.
- Time bound program for loss reduction.
- Energy accounting and auditing of 33/11 kV feeders and DTRs
- Annual budgetary provision for subsidy to be paid in advance to the Distribution Licensee
- Payment of past government dues and budgetary provision for payment of charge for electricity supplied to various government department
- Setting up of special courts to tackle theft
- Ring fencing of SLDC

# Areas of Intervention…..(2)

## Financial Restructuring Plan

- Operationalize FRP
- Measures to achieve operational and Financial parameters in the FRP
- Notify Action plan to undertake financial liabilities of the State Distribution Licensee
- Financial liabilities to be in accordance with the space available in the State FRBM limit
- The financial liability taken over not to be adjusted as loan to the State Distribution Licensee
- FRP to be made a part of the state budget statements for monitoring of its impact on state finances
- Future borrowings against verifiable physical assets and not for funding operational losses

# Areas of Intervention…..(3)

## Accounting Measures

- Empowered Committee for identification and provisioning of fictitious receivables
- Physical verification and preparation of fixed asset registers

## Corporate Governance

- Board of Directors of State Distribution Licensee to be an optimum combination of functional and independent directors
- A code of conduct for all Board Members and Senior Management of the State Distribution Licensee

# Areas of Intervention…..(3)

## Regulatory Compliance

- Review Reports pertaining to compliance of the EA 2003, Rules and Regulations made thereunder
- Regular and timely filing of true-up petitions, ARR and tariff petitions
- Fiscal provision or provision of grant to meet the adverse financial effect due to variations in (i) actual and approved Power Purchase cost (ii) actual and approved other costs (iii) average cost of supply and average realization of revenue (iv) delay in liquidation of the regulatory assets along with carrying cost

# Responsibility of the State Government…..(3)

Responsibility statement to be laid before the State Legislature

- State Electricity Distribution Performance Statement-KPIs and actual performance
- State Electricity Distribution Performance Strategy –strategies for achieving the KPIs
- Action Plan to achieve implement the strategy and achieve the KPIs

# Enforcement Mechanism

## Memorandum of Understanding

- State Government and State Distribution Licensee to enter into an MoU for setting targets and performance evaluation
- MoU to provide greater autonomy to the State Distribution Licensee
- MoU to provide for milestones for all the financial and operational parameters
- State Distribution Licensee shall submit every six months report on agreed financial and operational parameters and a strategy to achieve them

# Monitoring Mechanism

## Committee for monitoring effective implementation of Act

- Committee to consisits of (i) Chief Secretary or Finance Secretary (ii) Power Secretary (iii) Head of the Distribution (iv) Representatives of Nodal Bank and three major lenders
- Review the progress on quarterly basis

# THANK YOU

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