

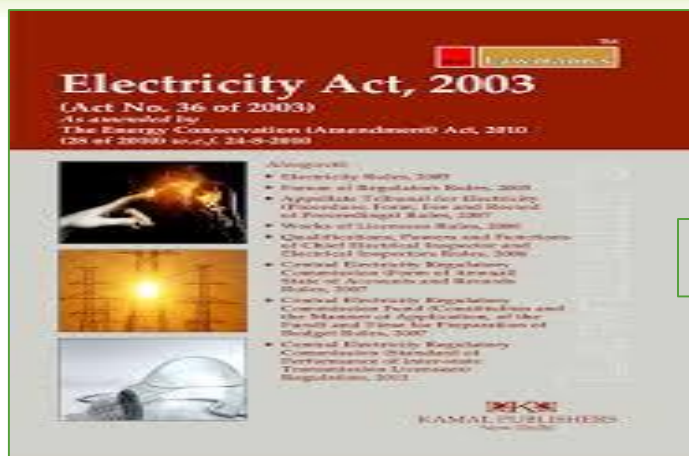


**India
SMART GRID
Week 2015**

02 - 06 March, 2015
Bangaluru International Exhibition Centre
Bangaluru, India
www.isgw.in



International Conference and Exhibition on Smart Grids and Smart Cities



Regulatory Implications of the Amendments Proposed

Date: 5th March 2015

Vijay L Sonavane

3/9/2015

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THOUGHT FOR THE DAY!!

"Don't be afraid of change.
You might lose something
good, but you'll gain
something better"

- Unknown

Agenda

- **Review of EA 2003**
- **Challenges in Power sector**
- **Why Review Bill?
Amendment??**
- **16 IMP major Modifications
proposed**
- **Carriage/Content separation**
- **Role of State Regulator post
Amendment: NTP mandatory**
- **Selection Process for ERC**
- **Conclusions**

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Challenges in Power Sector

- **Sever Fuel Shortages: Coal /Gas.**
- **300 Million Indians do not have access to Electricity: 33% H/H to be electrified**
- **Despite many efforts for over 20 years by GOI; financial Health of DL still critical: Ever increasing Gap**
- **Meager Success in promotion of Competition (OA/ PDL/ DF/ Market)**
- **SERC not 100% successful in bringing in “Accountability” in Regulated entities**

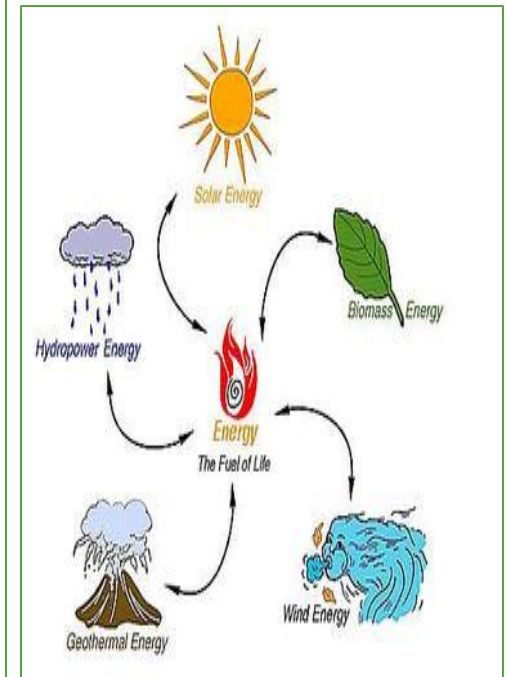


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Review & Amendment in EA 2003 sought for

- **Market Development & bringing in Competition in Sector**
- **Carriage & Content Separation**
- **Increasing Efficiency in Dist system by giving choice to consumers**
- **Promotion of RE**
- **Maintenance of Grid Security**
- **Rationalization of tariff**
- **Improving the function of ERC**
- **Bill was presented in the Parliament on 19th Dec 2014.**

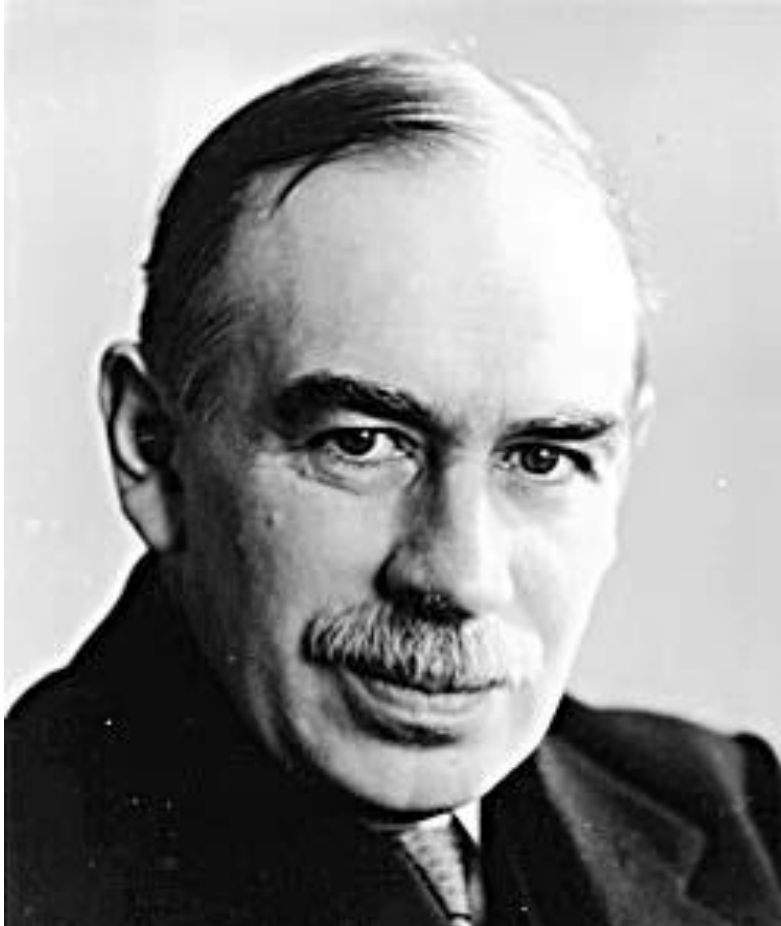


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John Maynard Keynes

(founder of Microeconomics: 1883 -1946: Keynesian Economics)



**“The greatest
difficulty in the
world
is not for people to
accept new ideas;
but to make them
forget old ones”**

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Major changes proposed (1/4)

- Separation of Carriage (Dist Wire Network) & Content (Supply of Electricity). Separate licenses to be issued.
- Each area of Dist. will have one DL responsible for wires & metering & multiple SL for supply & billing. At least one SL will be Govt. owned Co.
- State Govt. to implement transfer scheme & create Intermediary Company & Incumbent Supply Licensees ; Existing PP contracts will be vested with IC



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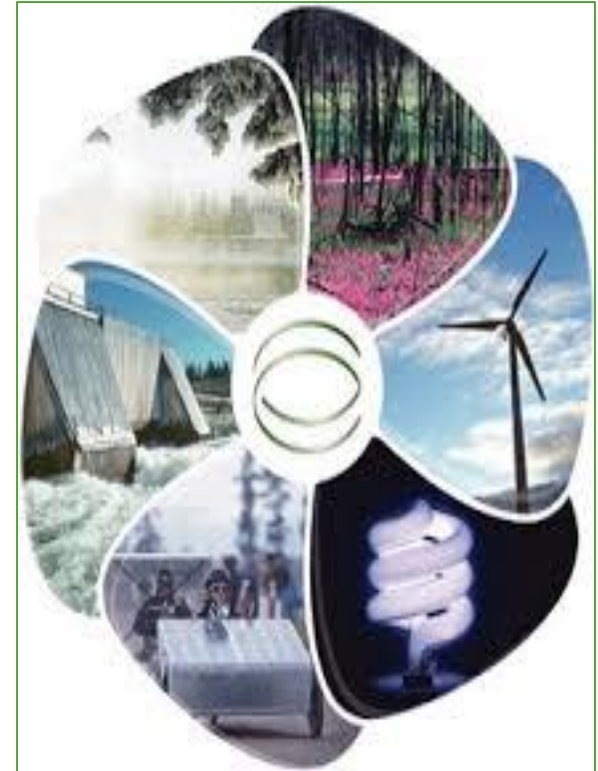
Major changes proposed (2/4)



- Choice of OA for 1 MW (+) consumers, making them deemed OA consumers. SERC to determine WC & CSS for OA consumers
- CSS not applicable in case of migration of consumers across SL
- ERC to promote Forward & Futures contracts as per GOI guidelines & policies
- SERC mandated to follow the National Tariff Policy formulated by GOI
- SERC to set category wise Ceiling tariff for SLs. SL is free to sale power at lower rates: however, if SL incurs losses due to selling power at lesser rate, these losses cannot be recovered from other consumers.

Major modifications proposed related to RE (3/4)

- New RE Policy & National policy for harnessing Solar Power to be formulated by GOI
- RE Generation Obligation(RGO): Mandatory 10% IC of new THM Gen. Old THM plants will be allowed to set up RE capacity, but only with concurrence of Power Procurers
- NO CSS for OA based on RES
- ERC to promote Smart Grid, Net Metering, Ancillary Services
- S 142 penalties for non-compliance of RPO/RGO



Major changes proposed related to ERC (4/4)



- **Modification in Selection Committee for selection of ERC Members, in case of delay in selection process (>5 Months), CEA to nominate Sr. Officer as Ex-officio Member.**
- **Terms of SERC members reduced from 5 years to 3 years; with provision for reappointment.**
- **FOR Committee to review performance of ERC; Based on report, Member can be removed**

Implications of Carriage & Content Separation

- DL responsible for Wire Business → metering, Balancing & Settlement
- Need: Elaborate, Accurate, Reliable metering infra structure
- Dist Loss determination ? ?
- Transfer Scheme by State Govt. : Time consuming process
- USO by incumbent SL resulting in as a Default supplier for AG & subsidized LT Consumers
- Consumers migrating to Subsequent SL not to pay CSS:→ Tariffs for subsidized consumers will rise.

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Implications of Carriage & Content Separation

- All SL in the area of supply need to have identical Supply area.
- S 14: Railways, Metros, SEZ: deemed Licensees. Whether DL or SL. SEZ to hand over Dist Network to State DL???
- USO will be the responsibility of incumbent SL & subsequent SL will have obligation to supply progressively based on Load factor, prescribed by GOI (may be on Contract Demand)
- This Concept would need lot of clarity before SERCs draft enabling procedures & Regulations to facilitate the same.

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Case Studies on **Separation of Wire & Supply**

MERC (MYT) Regulations 2011

- **R71: Separation of Accounts: Every DL shall maintain separate Accounts for wires business & supply business & make separate application for determination of tariff for Dist Wire business & Retail supply business**
- **ARR for Wire Business to include: ROE/ Interest on Loan/ Depreciation/ O&M Expenses/ Interest on WC & Interest on Consumers' SD etc.**
- **ARR for Supply Business to include: all the above items for SB + PP Expenses & Trans Charges**



Target Wire availability



R 84: For full recovery of ROE target availability for Wires business shall be as under:

- Rural area: 90%
- Towns & cities: 95%
- For 1% under-achievement ROE will be reduced 0.1% & for every 1% over-achievement RROE will be increased by 0.1%
- Normative ROE: Gen/ Trans & Wire business of Dist: 15.5%
- ROE for Retail SUPPLY: 17.5%

Target Supply availability

- R 84: Supply availability shall comprise of Base load availability: 75% & Peak Load availability: 25%
- For full recovery of ROE target availability for Supply business shall be between 85-95% as determined by MERC
- For 1% under-achievement ROE will be reduced 0.1% & for every 1% over-achievement ROE will be increased by 0.1%



Case Study: R-Infra:D

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Net Wire ARR (Rs Cr)	1198	1219	1290	1383
Net Supply ARR (Rs Cr)	4121	4056	5544	5359
Net aggregate ARR (Rs Cr)	5319	5275	6834	6742

Net ARR = 20-23% for Wire & 77- 80% for Supply

Existing 2014-15 Wheeling Charges: 124 PS/ KWH for LT consumers & 64 PS/ KWH for HT Consumers

Proposed 2015-16 Wheeling Charges: 273 PS/ KWH for LT consumers & 142 PS/ KWH for HT Consumers

Retail Tariff: Fixed/DEMD Charges + Wheeling Charges + Energy Charge

Case Study: TPC-D

Particulars	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16
Net Wire ARR (Rs Cr)	236	279	324	380
Net Supply ARR (Rs Cr)	3972	3518	3451	3301
Net aggregate ARR (Rs Cr)	4208	3797	3775	3681

Net ARR = 5-8% for Wire & 92- 95% for Supply

Proposed 2015-16 Wheeling Charges: 172 PS/ KWH for LT consumers & 84 PS/ KWH for HT Consumers

Retail Tariff: Fixed/DEMD Charges + Wheeling Charges + Energy Charge

Case Study: MSEDCL

- Accounts not separated: Wires + Supply Segregation of wires & Supply expenses as under:**

Particulars	Wires business	Supply business
Employee Expenses	75%	25%
A&G	75%	25%
Repairs & Maint.	95%	5%
Depreciation	90%	10%
Interest on LT Loan	90%	10%
Interest on WC	100%	0%
Provision for bad debt	0%	100%
ROE	90%	10%
Non-tariff Income	0%	100%
Trans Charges paid to TL	0%	100%

Case Study: MSEDCL

Particulars	FY 2013-14 (Audited)	FY 2014-15	FY 2015-16
Net Wire ARR (Rs Cr)	9,157	10,998	10,671
Net Supply ARR (Rs Cr)	41,641	48,803	53,023
Net aggregate ARR (Rs Cr)	50,798	59,800	63,692

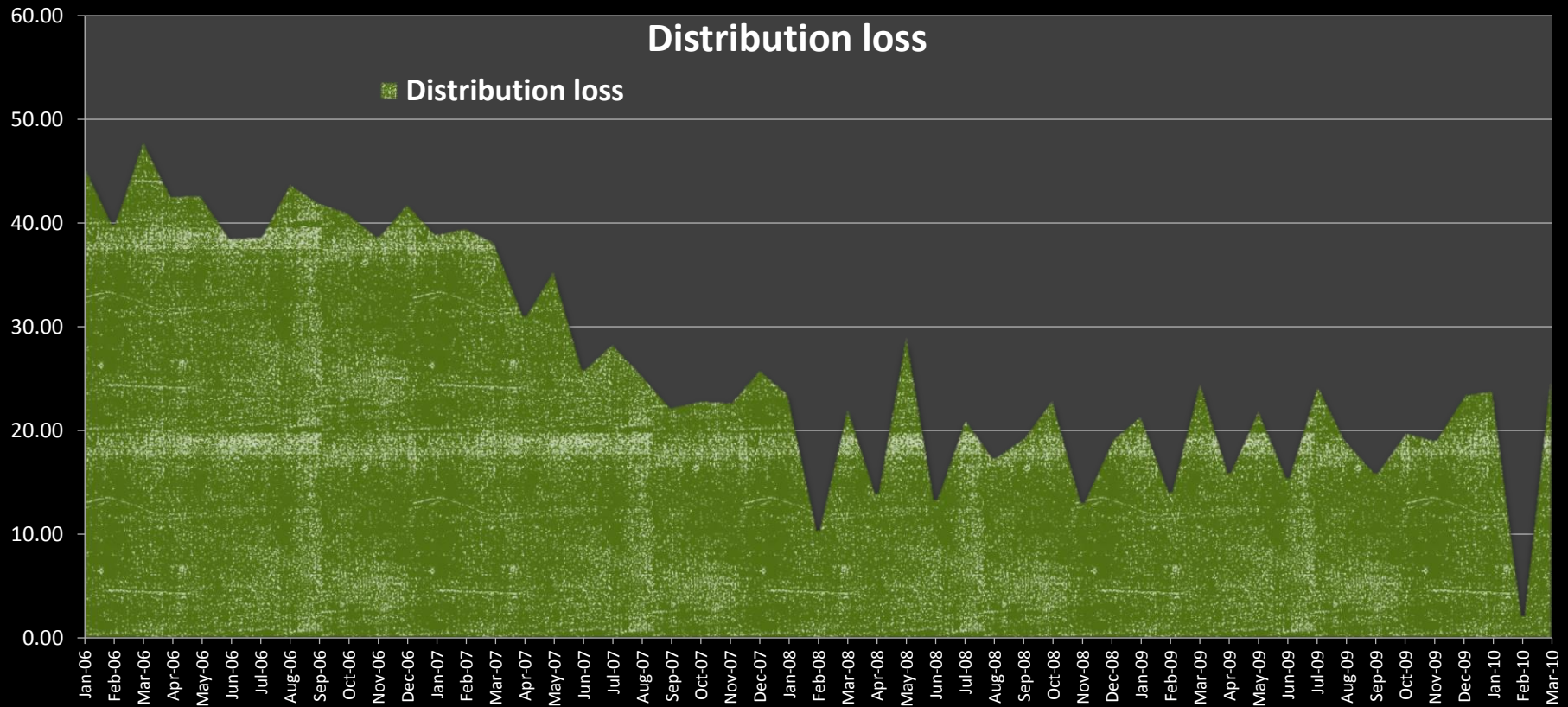
Net ARR = -16-19% for Wire & 81-84% for Supply
FY 2014-15 Wheeling Charges: 217 PS/ KWH for LT consumers & 127 PS/ KWH for 22/11 KV Consumers & 23 PS/KWH for 33 KV Consumers
Retail Tariff: Fixed/DEMD Charges + Wheeling Charges + Energy Charge

Dist Franchisee: Status??

- 3 Input based DF Schemes in Maha.
- Bhiwandi/ Nagpur/ Jalgaon
- Who will appoint DF as per S 2(27)? SL can not.
- To whom Franchisee revenue to be paid: ISL or DL?
- SL: duty to supply electricity & are like a deemed Trading Licensee
- What happens to retail tariff of DF?



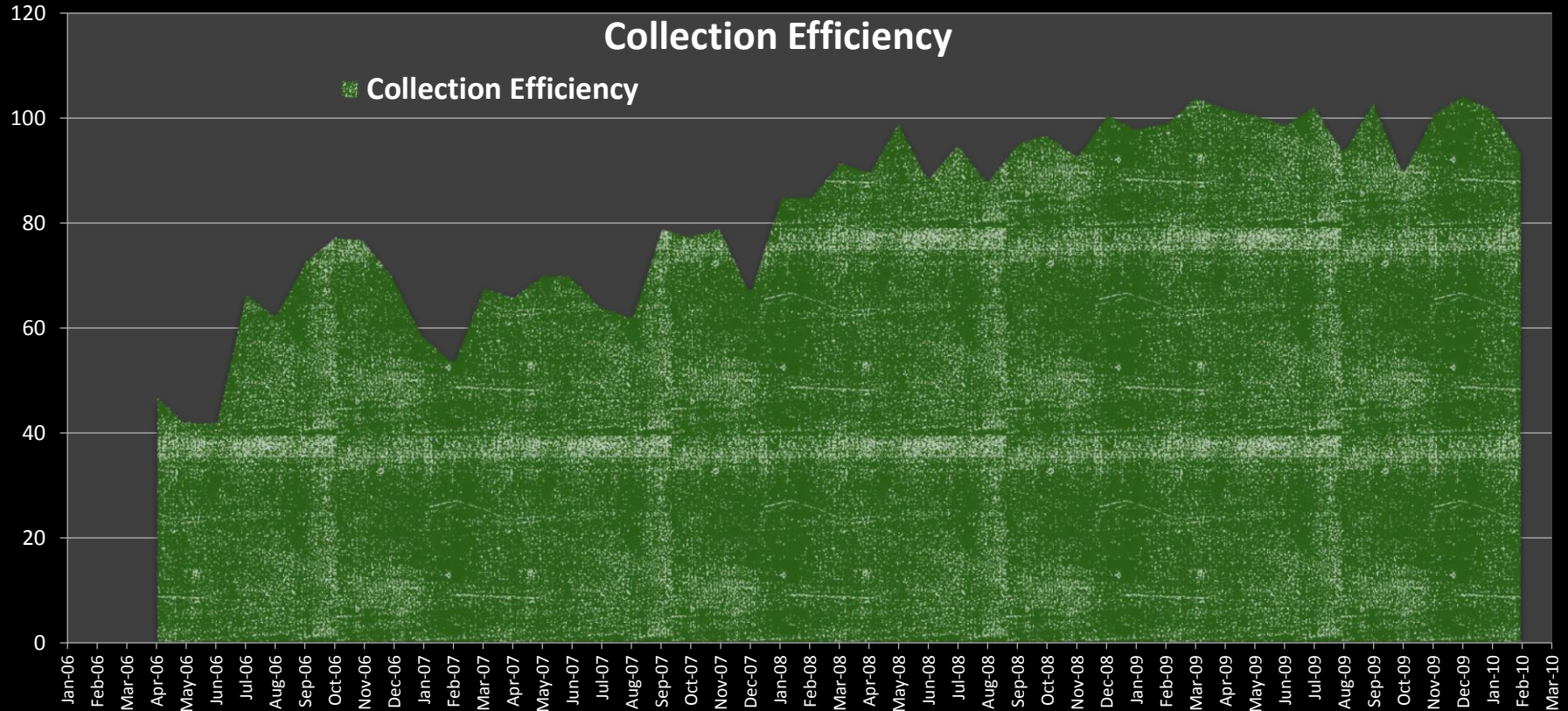
Bhiwandi DF: Technical Performance Evaluation



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Bhiwandi DF: Technical Performance Evaluation



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Open Access Related Issues

- S 49: All 1MW(+) consumers: → Deemed OA Consumers: have choice to select supplier
- CSS: Shifting of High Revenue consumer from one SL to other → Financial burden on incumbent SL. Revenue from CSS may not compensate for the loss for Incumbent SL, as CSS will be determined for the area & not SL wise.
- Need: Grid Security penalty for OA Consumers & Gen.

Unending tussle;
DISCOM vs. CONSUMERS
Operationalization of OA:
Challenge to SERC



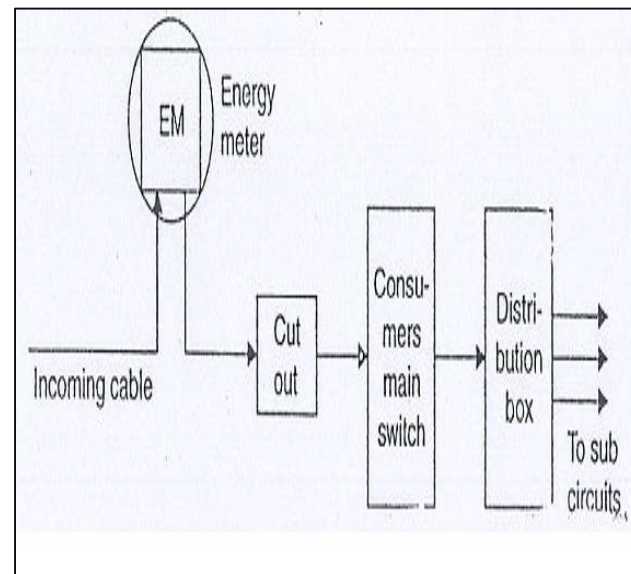
Section 51 D: Supply of Electricity: distinct from Dist



- **SERC to specify Electricity Supply Code to provide for recovery of electricity charges, interval for billing etc & also specify Electricity Dist Code.**
- **Section 12: Commission shall not generally grant license to more than one DL in any area of Distribution. Existing two or more DLs in the same area of Dist shall continue their operation. (Mumbai)**
- **Section (15)(8): Substitute period of License from 25 years to “as may be specified by appropriate Commission”**

Supply of Electricity

- **Central or State ERC may grant multiple SL within the same area of supply.**
- **At least one of the SL should be a Govt. Company or a Govt. controlled company**
- **Consumers can switch suppliers by giving a notice.**



Universal Supply Obligation

- Section 43: Every DL shall give connection to such premises, to enable supply of electricity within 15 days after receipt of application (Earlier it was 30 days)
- Section 51 B (1): SL as selected by the consumer shall start supplying on an application of owner or occupier of premises, within 15 days of connection
- USO will be the responsibility of incumbent SL & subsequent SL will have obligation to supply progressively

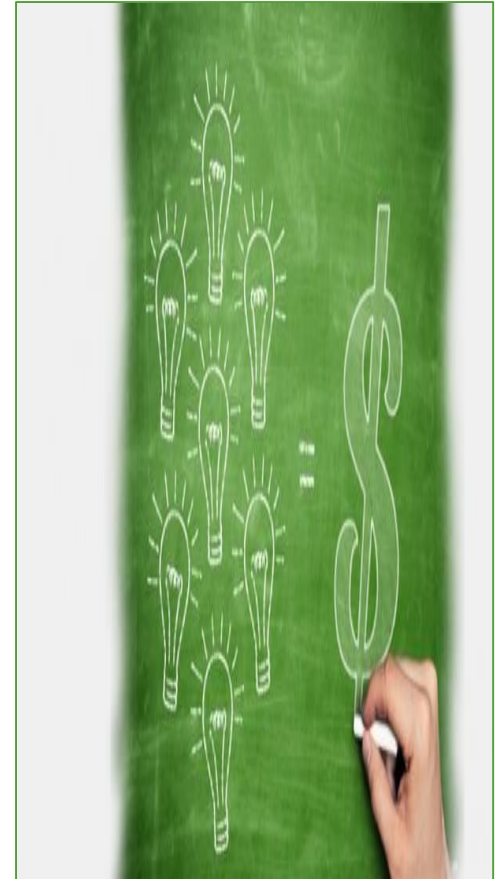


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Tariff: Section 61 (*)

- Section 61: Provisions of Tariff Policy shall be followed by the Commission, safeguarding consumers' interest, at the same time recovery of cost of electricity to Licensee without any Revenue deficit in the context of tariff determined under Section 62.
- Any Revenue deficit prior to Amendment shall be recovered; as prescribed by the Govt.



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Comments on S 61



- Provision of Tariff Policy SHALL be followed by ERC for Tariff Determination
- Not conceptually tenable, as Electricity is concurrent subject. Each State has peculiar parameters & hence Nation wide binding of Tariff policy on SERCs may not be practical.
- But might be looked as a need of hour as every bailouts is being funded by GOI.
- Policy normally means guiding principle.
- Neither subordinate Legislation nor Policy can supersede an enactment by Parliament
- EA 2003 rightly required ERC to be guided by the Tariff Policy (same policy may be continued) but more clarity needed

Tariff: S 62: Ceiling Tariff

- Ceiling tariff will be determined for categories of consumers (SL can levy any consumer category lesser tariff than ceiling tariff. Obligation of SL: to pay intermediary Company, TL, DL & Genco)
- Tariff to provide Licensee for recovery of all prudent costs.
- In monthly bills adjustment allowed through PRICE ADJUSTMENT FORMULA (fuel, PP & procurement price surcharge formula as specified in Tariff Policy)



SERC Tariff: Other Amendments



- Section 64: If tariff application is not filed by licensee, ERC on its own, not later than 30 days of last date specified for tariff filing, initiate proceedings for tariff & call for INFO/document details from licensee. (discipline)

S 66: Introduction of New Products in Power Market



- S 66: “ERC shall endeavor to promote development of Market (including Trading & Forward & futures Contract) in Power & a market for encouraging Energy Efficiency in power..”
- Presently Forward contracts i.e. non-transferable Specific Delivery can be allowed to help to mitigate the risk of Volumes & Price
- This will help in expanding power market volume & to encourage EE, CERC to introduce products like ESCerts.

Amendments impacting: SERC

- Section 64 (3): Tariff Orders to be within 90 days from Receipt of application (Existing Provision 120 days may be continued)
- Section 92: additional Clause: ERC Order to be issued within 120 days & for delay reasons to be recorded.



Selection Committee for selecting SERC Members

- Section 85: Constitution of selection Committee: 5 members (instead of 3) to include Chairperson of CERC & MD/Chairperson of Financial Institutions specified in Companies Act 2013. (for better functioning): More transparency desired.
- In case of delay in constitution of Selection Committee for more than 2 months or in appointment of Member/Chairman SERC for more than 5 months, Central Govt. shall be entitled to nominate one Officer of CEA as ex-officio Member of Commission



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Tenure of Member ERC



- Section 89: Chairperson/ Member term **3 years & shall be eligible for one more term through re-appointment.** (Existing Provision: 5 year Term & bar on reappointment to be retained) (3 years is shorter span)
- Section 90: New clause: Removal of Member: on the basis of non-performance as adjudged by Committee constituted under Section 109A.

FOR Committee & ERC Members

- Section 109A: FOR to constitute a 3 Member (of eminence) independent Committee, to “Review performance of any Commission” & submit a report with recommendations to Central Govt.
- Performance Review will raise ACCOUNTABILITY” in ERC: (essential)
- In EA 2003, S 90: removal of Member & S 121: ATE to give directions to ERC for performance of its statutory functions .Chairpersons of SERC, Members of FOR.



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Amendments impacting: SERC



- Section 127: Any person aggrieved by the Final Order made US 126 (unauthorized use of Electricity) , can prefer an Appeal to Ombudsman, who shall be Appellate Authority under this Section. (not EI?)
- Section 166: Decisions of District level Co-ordination Committee shall be placed before SERC within 7 days

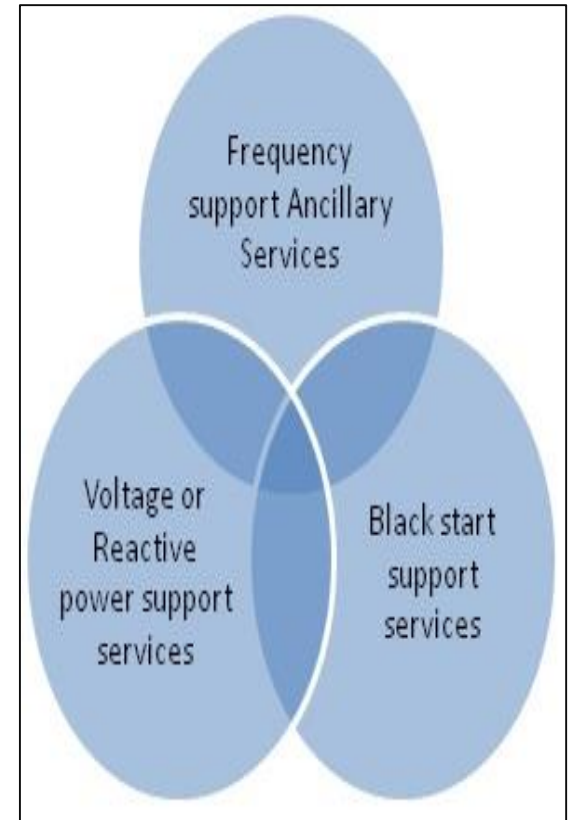
Penalties



- **Section 142:** Penalty for non-compliance of Commission's directive increased up to 1 CR from 1 Lakh & for continuing failure Rs 1 Lakh/day instead of Rs. 6000/day & for Genco not establishing RE sources: Rs 10 Lakh & 10,000/day during which failure continues
- **Section 146:** Limits of fine increased same as S 142

Other Amendments

- In Section 2: Definitions: 22 modifications (SG & Ancillary systems included)
- Section 79: Additional Function of CERC: to regulate the ISTS, including promotion & development of Smart Grid, Ancillary services & decentralized Distributed Gen



Ancillary Systems

Ref: CERC Staff
Paper 2011

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State Govt.: actions needed

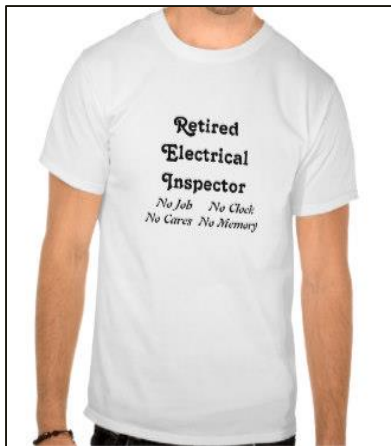


- S 45 (A): Govt. to prescribe manner of collection & realization of any dues, under relevant Laws for time being , along with Electricity dues
- S59 A: to enable Govt. to recommend revocation of License due to noncompliance of SOP (Not advisable)

State Govt.: actions needed



- Section 131: State Govt to draw up a transfer scheme of DL relating to supply of Electricity to a Company, who shall be the Incumbent SL & all PPAs will be with the Intermediary Co. (EA 2003 Final Transfer schemes still WIP)
- Section 162: to empower Govt. to make Rules relating to Qualifications, Powers & functions of Chief Electrical Inspectors, EI & levy of fees



Section 7 : Spinning Reserve & RGO

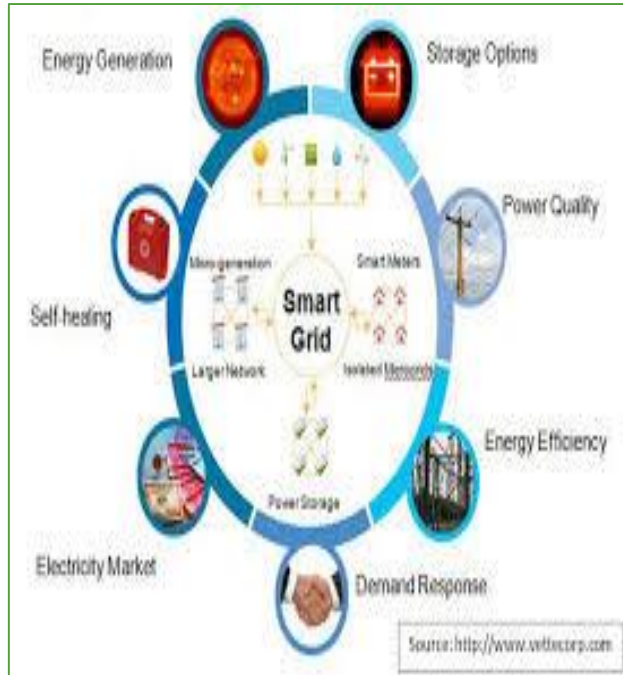
- Section 7: GENCO to build & maintain Spinning reserve (Back up capacity of Gen, which shall be made available on directions of System operators, within specified time limit);
- GENCO: to establish RE Gen capacity up to 10% of Thermal power installed capacity



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Inclusion of Smart Grid in the Bill: S79

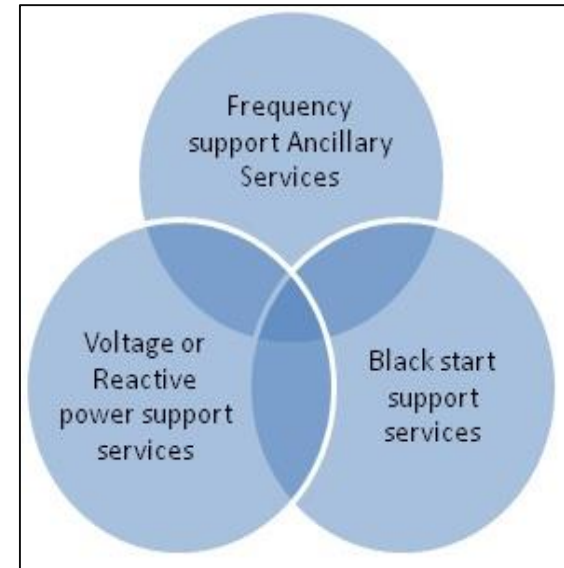


SG: For Improving efficiency, Reliability, Economics & sustainability in G/T/D Of Electricity

- Bill defines a Smart Grid as “An Electricity Network that uses Information & Communication Technology to generate, transmit & distribute electricity efficiently.
- It seeks to promote provision of electricity through SG. Bill also provides for the installation of Smart meters for proper accounting & measurement of consumption & metering of electricity.
- Section 55: Proviso included for Smart meters for proper EA from GEN to consumer end

Inclusion of Ancillary Services

- **“Ancillary Services: Services necessary to support PS or Grid Operation for maintaining Power Quality, Reliability & Security**
- **Section 79: Additional Function of CERC: to regulate the ISTS, including promotion & development of Smart Grid, Ancillary services & decentralized Distributed GEN**
- **Section 177: Powers of CEA to make Regulations: Grid Standards u.S. 34, & also all measures for SG & AS**

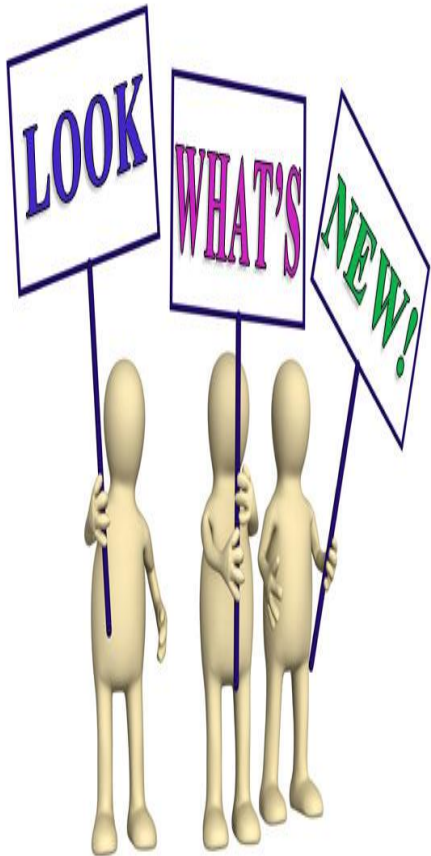


Why Ancillary Services for India ?

- Reliability , Security, stability and Power quality
- Restructured Power Systems
- Lack of adequate Primary, Secondary and Tertiary Response
- Lack of Adequate Reserves
- Loose Power Pools
- Absence of Tight Frequency Control

Omission/ New additions

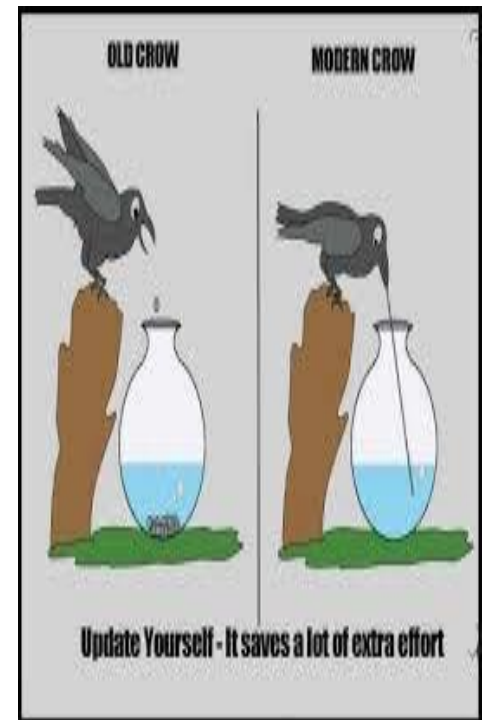
- Section 149: to be omitted (Offenses by Companies)
- Section 186: **New Section:** Powers to remove Difficulty: In case of difficulty arising in giving effect to the provisions of E(A) Act 2014, the Central Govt. may by order published, make such provisions not inconsistent with the provisions of the Act, as may appear to be necessary for removing difficulty. Every Order made under this Section, shall be laid before each House of Parliament



Finally

- **Modified Policy documents to be available along with Amendment (To understand exact implementation, envisaged). ERC to be guided by Tariff Policy**
- **Transfer scheme: difficult time consuming task**
- **Tariff Orders 90 days (existing provision of 120 days may be retained)**
- **Franchisee Operation needs to be explicitly covered**
- **Selection of Members: more transparency needed , Tenure to be 5 years**
- **Instead of FOR Committee; ATE may review ERC**
- **Similar to RPO for RE Power, specific targets for EE/DSM as EE Obligation**

SMART CROW



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THANKS!!!

(contact me: vlsonavane@gmail.com)



When “I” is replaced by “We”
Even “Illness” becomes “Wellness”