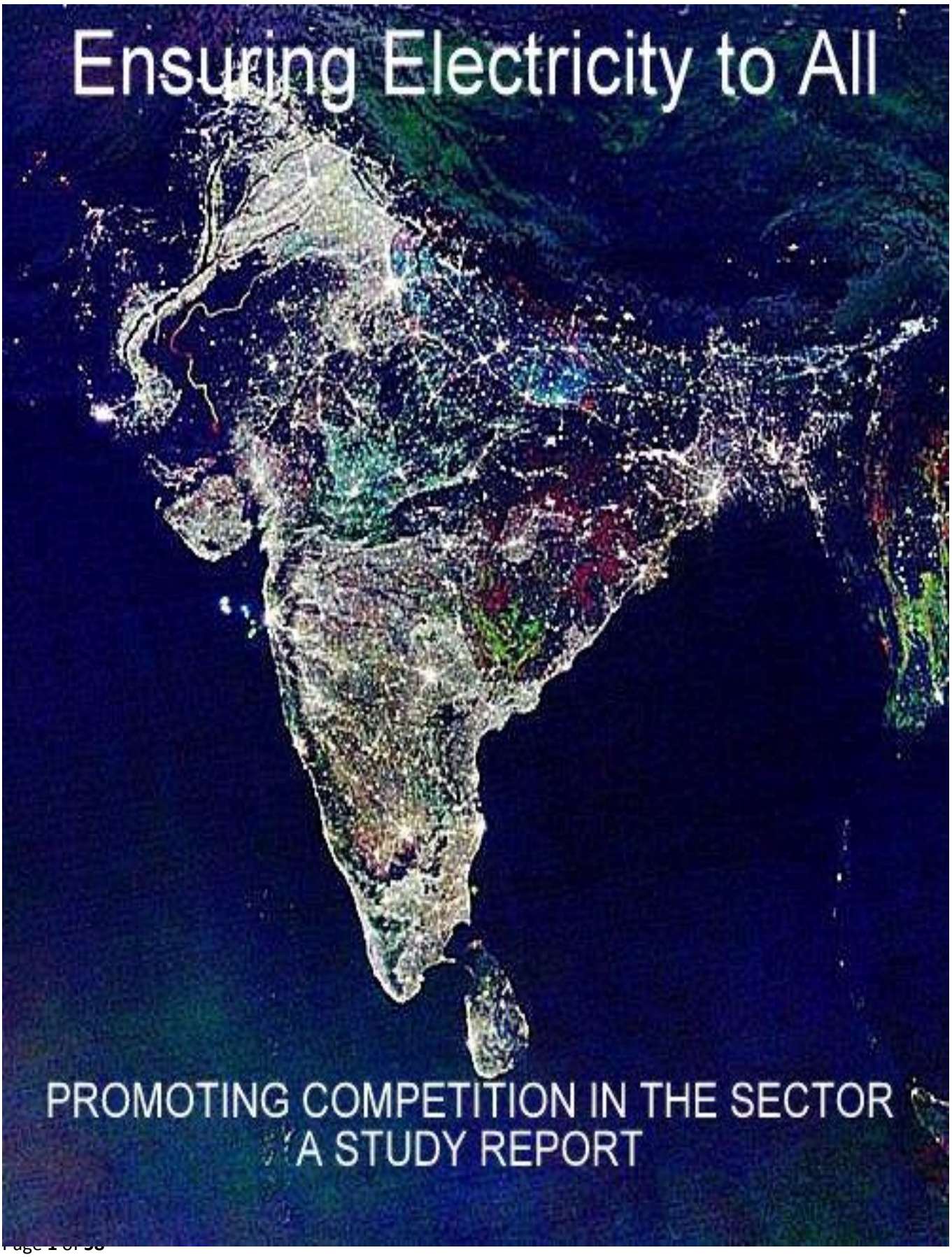
Ensuring Electricity to All
PROMOTING COMPETITION IN THE SECTOR
A STUDY REPORT

RESEARCH REPORT ON ELECTRICITY SECTOR

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JOINTLY PREPARED BY:

SHRI V.S. AILAWADI, FOUNDER CHAIRMAN, HARYANA ELECTRICITY REGULATORY COMMISSION

MS. BHAWNA GULATI, RESEARCH ASSOCIATE, JINDAL GLOBAL LAW SCHOOL

MEETINGS AND CONSULTATIONS WITH OFFICIALS AT COMPETITION COMMISSION OF INDIA, MINISTRY OF POWER AND OTHER STAKEHOLDERS

Competition Commission of India

1. Shri R. Prasad, Member, CCI
2. Ms. Geeta Gouri, Member, CCI
3. Shri V. Sriraj, Deputy Director (Law), CCI

Ministry of Power

1. Shri Ashok Lavasa, Additional Secretary, Ministry of Power
2. Shri Devender Singh, Joint Secretary, Ministry of Power
3. Shir Pranay Kumar, Director, Ministry of Power

Central Electricity Authority

1. Shri A. S. Bakshi, Chairperson, CEA
2. Shri K. P. Singh, Member (Thermal), CEA

State Regulatory Commissions

1. Shri P. D. Sudhakar, Chairman, DERC
2. Shri K. Venugopal, Member, TNERC
3. Shri V. K. Sood, Former Chairman, DERC
4. Shri Ram Dayal Gupta, Former Member, UPERC

Planning Commission

1. Shri B. K. Chaturvedi, Member, Planning Commission
2. Shri Gajendra Haldea, Adviser to DCH (Infrastructure), Planning Commission

Central Electricity Regulatory Commission

1. Dr. Pramod Deo, Chairman, CERC
2. Shri M. Deena Dayalan, Member, CERC
3. Shri Sushanta K. Chatterjee, Deputy Chief Regulatory, CERC

North Delhi Power Limited

1. Shri Puneet Munjal, Senior General Manager (Corporate Strategy & Planning), NDPL
2. Shri Mithun Chakraborty, Senior Manager, NDPL

EXECUTIVE SUMMARY

1.1. The growing importance of competition as a means to enhance efficiency and consumer welfare is gaining momentum in almost all sectors and all parts of the world. Sectors which were once professed to be best suited for State monopoly for protection of the consumers from the so-called unscrupulous private players have witnessed a paradigm transformation. Telecommunications is the best example to see how liberalization and effective competition have helped increasing the consumer accessibility to these services which were perceived to be luxury goods just few decades back. By providing level playing field to private sector players, the competition brought down the tariffs for consumers. Electricity sector is also one such sector where different restructuring models have been employed by different countries to guarantee efficiency and consumer welfare. India, however, has not been able to reap the benefits from the success of progressive reforms in liberalizing the sector, **although theoretically the reforms modeled on basis of Electricity Act, 2003, and its ample provisions in the legislations and policy documents from the government carry clear intent and objective for efficiency and competition as the main pursuit for ensuring meaningful reforms in the power sector.**

1.2. Historically, electricity sector in India, like any other part of the world, featured vertically integrated monopolies—state-owned and subject to strict regulation. Though before independence the sector did featured private participation, post-independence reform in 1948 clearly enforced the enlisting of electricity as a concurrent subject by formally dividing the legislative authority between the Centre and States. The Electricity Supply Act of 1948 provided for the establishment of the Central Electricity Authority (CEA) and of State Electricity Boards (SEBs) which were to become the main agencies for supplying power throughout India. The SEBs were autonomous bodies responsible for the development and operation of generation, transmission and distribution in the "most economical and efficient way". **The performance of such SEBs, however, were characterized by low labor productivity, poor service quality, high system losses,** inadequate investment in power supply facilities, unavailability of service to large portions of the population, and prices that were too low to cover costs and support new investment.

1.3. **The Electricity Act, 2003, marked a paradigm shift in the sector by mandating licensee-free generation, non-discriminatory open access** of the transmission system and gradual implementation of open access in the distribution system which will pave way for creation of power market in India. The Act mandated restructuring the vertically integrated segments into unbundled and independent activities. **The Act further amply recognized the capability of competition in generation and distribution in bringing the much desired change for consumer welfare enhancement.** Government was entrusted with the role of a facilitator through the use of policy instruments. The Central Government was required, as per the mandate of the Electricity Act, 2003, to formulate policies namely National Electricity Policy, National Tariff Policy, National Policy on stand-alone systems for rural areas and non-conventional energy systems, National Policy on electrification and local distribution in rural areas. **With the unbundling of the SEBs and other institutional reforms, viz, SERCs, CERC and Electricity Exchanges, the architecture for competitive market was destined to take a full shape.**

1.4. The Electricity Act, 2003 enshrined various provisions indicating efficiency[1], unbundling[2], open access[3], competition neutrality[4], consumer choice[5] etc. However, in spite of such obvious expression of the legislature's intention, the objectives are far from achievable even after 8 years of the Act's enforcement. **The major impediment in the way of intended liberalization stems from the monopolistic and dysfunctional structure of state utilities which create a façade of autonomous utilities, but are largely regulated by and for the respective state governments and with administrative arrangements that are in the nature of control resting in control of the utilities and giving opportunity for high incentive of distorting the competition. Such conflict of interest may affect competition neutrality of the state as well of the state regulatory body. Mere functional restructuring without meaningful autonomy is not a good replacement of ownership separation. It is well recognized principle of law that 'what the law prohibits directly should not be pursued indirectly'.** The socio-political compulsions and interference by state actors can hamper competition by going against the objective of providing level playing field to all players. These regulatory and structural problems can be corrected by the state governments with MoP playing hand holding approach, on one hand and on the other hand, regulators allowing full play of the rules to promote competition by enforcing guidelines where there is a misuse or competition distortion. For example, the CERC has issued various regulations and enforced them to encourage entry of players' in generation and interstate movement of electricity. But entry conditions for competitor to flourish in the entire value chain of the industry have not been very effective. **MoP have taken some laudable initiatives to bring about the transformation of distribution sector through schemes directly benefitting the utilities ,such as R-APDRP, RGGV etc., and institutional capacity building of the regulatory effectiveness. Therefore, there is an urgent need to ensure proper implementation of the law and regulations to provide a level playing field and neutrality for better private sector participation and competition.**

1.5. Generation segment has witnessed some amount of competition and there is a lot of potential in this segment in terms of attracting private investment. Easy entry and exit and favorable competitive environment will incentivize the generation companies to find newer ways to produce electricity at a lower cost. In this connection policy framework of **Case I & 2 standard guidelines for power procurement is noteworthy initiative of the MoP. Multi-level scope for price competition through tariff bids is one but important step to achieve the objective of competitive market in electricity**. **The Single Buyer Model (SBM) in which the State governments take over the function of procurement of power by distribution companies through a state-owned entity was required in a transitional phase and should now be completely phased out. This has acted as a conflict of interest and hindered the true competition in the procurement.** Enabling policy and regulatory environment has seen the benefits. The XI Five Year Plan has spurred the entry of players in the generation, becoming as much as 22% of the total capacity to be added by private sector by 2012.[6] The share of the

[1] Preamble, Sec 29, 33, 61, 63, 79(2), 86(2), 134(5) of the of Electricity Act, 2003.
[2] Sec 26, 27, 31, 38, 41 of the Electricity Act, 2003.
[3] Sec 2(47), 38(2), 39(2), 40(c), 42(2), 42(3) of Electricity Act, 2003.
[4] Sec 38(2), 39(2), 40(c), 42(3), 60, 134 of Electricity Act, 2003.
[5] Sec 42(2) of the Electricity Act, 2003.
[6] Eleventh Five Year Plan on Energy, Planning Commission, Chapter 10, pp 354.

private sector in generation is expected to be more than the present combined share of central and state sector in generation in the XII plan. The electricity generation market has grown underlining the opportunities which exist for competition for robust growth.

1.6. The **policy to liberalize generation segment, however, have been limited in so far as the issues of domestic coal and gas remain opaque and highly regulated** and thereby limiting **the benefits of competition reaching to the end consumers. Government monopoly in production, price and distribution through Coal India Limited (CIL) and absence of independent sector regulator has severely impacted the private sector investment in the generation segment.** Approximately, 75% of the CIL's annual output goes to the power sector. The frequent changes in the level playing rules relating to fuel linkages policy of the Ministry of Coal and Coal India, as recently announced in the New Coal Distribution Policy (NCDP), have had adverse implications on level playing conditions for developers, existing as well as new entrants. **"To follow through power sector reforms without the reform of the coal market will be suboptimal"[7].** Further, it shows how distortions in the rules and uncertainty of policy may have serious consequences on competition in generation. **Ministry of Power has unsuccessfully flagged these issues with Ministry of Coal and CIL** in the past and if status quo continues to remain, we may see competition in generation getting even more adversely affected. Misuse of provisions of the EA, 03 some states has resulted in the breach of the principle of neutrality where states have used its authority to influence or arm twist the STUs for not allowing transmission and distribution network to State Discoms or generators from other states for supply of electricity by giving orders under Sec 11.

1.7. The Electricity Act and various policies (NEP and NTP) recognize Open Access as a viable tool to allow consumer choice. However, **Open Access, which is considered a cornerstone in the design of competitive market in the power sector have not been implemented very effectively so far**. **This route to competition has failed to provide accessibility to the consumers. The difficulties in enabling OA have been identified in various analysis,** such as— i) multiple charges (transmission charge, wheeling charge, cross subsidy surcharge etc.); ii) non-transparency regarding Available Transmission Capacity (ATC); iii) use of Sec 11 orders[8] by States; iv) procedural difficulties i.e. consumers have to approach the network operator to apply for the Open Access. Besides, there are other technical and socio-political issues which have stifled the hopes of this much relied upon solution for ensuring competition in the electricity sector.

1.8. **Open Access to the Interstate transmission network has become an important land mark reform. CERC has created a stable regime** through Interstate Connectivity and OA regulations. Electricity exchanges, undoubtedly, have enabled utilities to benefit from competition in the inter-state market in generation by procuring power from multiple generators. However, the main objectives of the Electricity Act i.e. to serve the consumer by this whole architecture is still far from achievable due to

[7] ET Bureau, Power sector policy must allow tariff to reflect higher costs of fuel, Economic Times, January 6, 2012.

[8] Section 11 (1) of the Electricity Act : Appropriate Government may specify that a generating company shall, in extraordinary circumstances operate and maintain any generating station in accordance with the directions of that Government.

Explanation - For the purposes of this section, the expression "extraordinary circumstances" means circumstances arising out of threat to security of the State, public order or a natural calamity or such other circumstances arising in the public interest.

absence of competition in the distribution segment of the industry. It is after protracted consultations and efforts that the **Open Access to bulk consumer which was to be introduced in the phased manner has now become a legal right for those consumers but amidst the regulatory and policy barriers, the access to networks is as inaccessible as before**. In a recent opinion[9] from Ministry of Law and Justice on the operationalization of open access in power sector, it is strongly opined that since the fifth proviso is introduced in the Electricity Act in January 2004, the five years expired in January 2009. Therefore, 1 MW and above consumers have choice as they will be deemed to be open access consumers and the regulator has no jurisdiction over fixing the energy charges for them.[10] It is expected that the state regulators may not create barrier and instead make such changes in existing rules /regulations as are necessary in facilitating this choice to bulk consumers.

1.9. **The National Electricity Policy, 2005, provides for augmentation of transmission capacity**, necessary regulatory framework for providing non-discriminatory open access. Policy underlines the need for robust transmission for an efficient choice in locating generation capacity and for encouraging trading in electricity for optimum utilization of generation resources and consequently for reducing the cost of supply. However, the **Policy fails to provide a clear plan of action for the agencies involved to ensure that stated objectives can be achieved.** In spite of being the third largest in the world, the transmission and distribution networks have not been able to accommodate for want of adequately capacity in the transmission system, open access requests/transactions by the generating companies and end consumers.

1.10. The responsibility of development of market including trading has been vested with the regulatory commissions—SERCs mandated to facilitate intra-state trading and competition. Creating this value chain depends upon the financial health of utility to be able to face competition with its sound working**. However, in spite of clear expression of intention to infuse competition and efficiency in the electricity segment, state regulators have failed to balance the needs for viable utility and competition in electricity.** Regulatory failure to align tariffs to "cost to serve" and for upgradation of the systems has rendered the distribution system as financially unviable. Added to this unfortunate situation is the mindset that refuses to accept that to generate, transmit and distribute electricity impose cost and tariffs have to go up to meet cost of equipment and fuel. With rigid approach to open access, unrevised tariffs and leaving persistent gap in expenditure & revenues, the regulators have done precious little to repair financial health or prepare **them to brace up to competition.** Rather the losses of the utilities are showing an upward trend with losses increasing every year. The total losses of utilities was Rs. 198.65 billion in 2007-08 which went up to Rs. 408.27 billion in 2008-09 and then to Rs. 471.43 billion in 2009-10.[11] And if the trend and business model currently deployed in the electricity sectors continues to remain, the losses will increase substantially in the times to come, threatening the very viability of the entire electricity industry.

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[9] *Available at* http://www.powermin.nic.in/whats_new/pdf/Opinion_from_Mo_Law_&_Justice_on_The_Operationalization_in_Power_Sector_Nov_2011.pdf.

[10] *Id.* at point 6.

[11] Swarna Kesavan, *Utility Finances*, Power Line, Volume 16(2), October 2011.

Aims and Objectives of the Report

1.11. Based on the above stated experience of the working sector and the current situation, this **report aims at locating competition issues and distortions as caused by implementation or other wise of the law and policy in the electricity sector and provides some recommendations to correct the situation. The report will focus on the anomalies of law and practice** that has crippled the growth of electricity sector and has cuffed the competition from permeating in all sectors. Broadly, the report analyzes the various provisions of the Electricity Act, 2003, National Electricity Policy, 2005, and National Tariff Policy, 2006, in the light of **competition principles evolved in general and competition reforms evolved specifically in the electricity sector in other parts of the world.**

Major Issues and Challenges

1.12. **There is a need to bring a complete organizational restructuring of the SLDCs, STUs and State Discoms to ensure independent working of each segment.** The need for independent SLDCs and STUs has been underlined in the central advisory committee (CAC) of the CERC in March 2009. The CAC had very strongly recommended that it is not only important to grant independent status to SLDC, but to truly insulate the SLDCs from political pressures. **At the national level POSOCO (Power System Operation Corporation) have been formed as an independent system operator. Similar independent structure is required at the state level to make open access as a meaningful tool in enhancing consumer welfare.** If the states fail in this regard then similar provision laying down time frame in the Act may have to be considered.

1.13. **It may be worthwhile to discuss the observations and recommendations of the Shunglu Committee Report[12] which was presented to the Deputy Chairman, Planning Commission on 15th December, 2011**. The Committee observed that the high losses of State Electricity Boards are primarily on account of poor managerial and operational practices of distribution companies compounded by irrational tariffs fixed by regulators. The Committee has recommended that the State Electricity Regulatory Commissions should be made independent financially as well as in their functioning. Selection of Chairman and Members of Electricity Regulatory Commissions needs to be fine-tuned and further, their functioning should be scrutinized by an Expert Group in order to determine to what extent the Commissions have discharged their statutory duties like timely and regular revision of tariffs.[13] There is a need to ensure effective unbundling and complete ownership separation of competitive and monopolistic segments in the electricity value chain. The state should be neutral or at arms-length and should be distinct from the regulated utilities and the segments should not be unbundled on papers only. IIPA/MoP study, 2006 has shown that there was a mismatch in authority and responsibilities with state government retaining control in one form or the other. Proper corporate structure with complete functional autonomy & accountability of the entities as given in law was a fundamental reform required. To

[12] V.K Shunglu (Chairman), Report of High Level Panel on Financial Position of Distribution Utilities (2011), available at http://planningcommission.nic.in/reports/genrep/hlpf/hlpf.pdf.
[13] *Id.* at Chapter IV.

get this central piece of the reform implemented by state governments, MoP may consider conditional devolution of grant under the R-APDRP.

1.14. **To improve efficiency in the distribution segment for bringing down T&D losses,** MoP as well as Planning Commission have been considering different models other than privatization in the distribution segment of the electricity industry. It is understood that subgroup of the Planning Commission under Member, Shri B K Chaturvedi has recommended the PPP (Public – Private – Partnership) & Franchise / concessionaire models. Reform in the distribution sector has urgency in the context of creating competition eco system in the electricity sector. As rightly observed by Former Power Secretary Shri R. V. Shahi "if the government is serious on distribution reforms, states need to be persuaded to have privatization in large cities and franchisee in all such towns where their AT&C losses are more than 20 percent". The **separation of ownership would ensure 'competition neutrality'**. This separation in the present scenario is more important in case of activities which are potentially competition in nature from those that feature monopolistic characteristics. This was strongly felt in the case of SDLC and STU. The former can yield best competitive results only when the latter is regulated by independent system operators allowing access to the monolithic networks. Suggestions have been made in the past to ring fence the SLDC from state governments/utilities interference and to ensure transparency in their functioning.

1.15. An important reform can be **segregation of carriage from content in the distribution segment to recognize retail supply as a distinct activity** capable of licensing, where network entity is guaranteed a reasonable return. This should be the objective in the long run. The policy to infuse competition at the retail level is incomplete in so far as the Electricity Act provides for a **composite licence** for owning the network and supplying the electricity. There is no bifurcation of content (electricity supply) and carriage (network) at this stage except for those consumers who approach generation companies on their own and then apply for open access. The report elucidates how the provision of composite licensees for distribution (network and supply) has restricted competition and growth in the competition segment. This will require an amendment in Sec 14 to do away with the requirement of owning a distribution network before an application for a distribution license is made. Therefore, **bifurcation of these two activities can be very instrumental in promoting multiple retail suppliers to procure wholesale electricity and** sell electricity to retail consumers along with providing for consumer-related services including metering, billing, collection and complaint handling. This may be the long term objective. In the medium term, Franchisee and PPP Model may act as transition phase to reach the ultimate objective of creating retail competition.

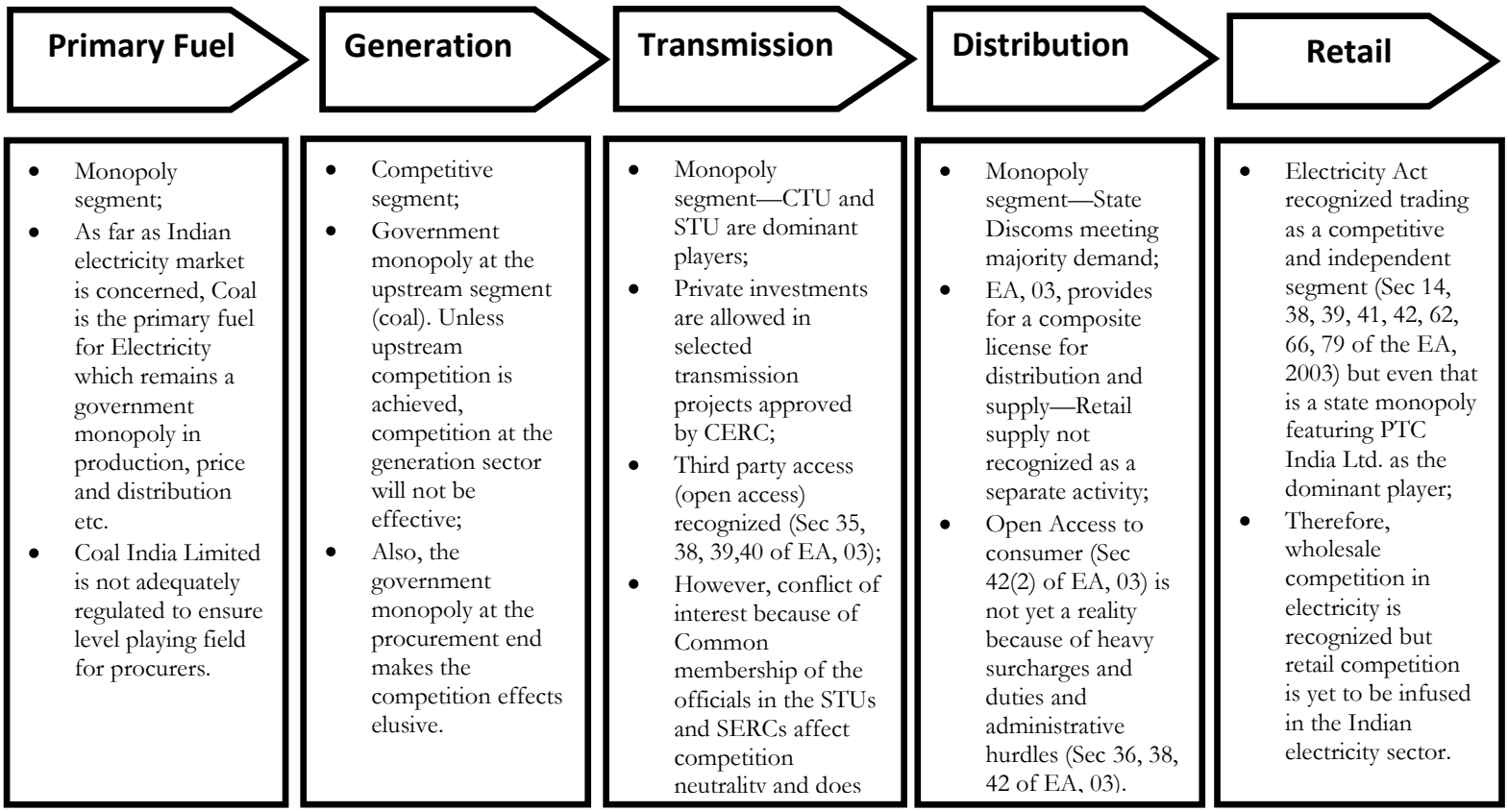
1.16. **While bifurcating content from carriage in the distribution segment should be the long term objective, in the medium term there arises a need to ensure access to network to generator/trader/retail suppliers.** The transmission and distribution network, though are best suited for regulated monopolies, can beneficially contribute towards the competition in the generation and retail segments. Since these segments require heavy capital investment, it is widely accepted that construction of parallel networks should be avoided. Therefore, it is necessary that **the franchisee model is structured to allow non-discriminatory third party access to generator/trader/ retail suppliers to reach the final consumers. However, the issue of competition neutrality arises even in such situation where MoP is considering the policy to incentivize franchisee model for private players in distribution in selected towns** because the franchisee or owner of the distribution network, if he is also a retail

supplier, will have conflicting interest and incentive to distort the retail competition. The most appropriate solution, as explained earlier, is complete segregation of distribution network and retail supply, which undoubtedly will require a complete transition of distribution segment and, therefore, may not find its way considering policy and political issue surrounding the situation. **"Only when the distribution network is mandatorily required to provide uninterrupted non-discriminatory access, the real benefits of competition will reach the final consumer**". The report illustrates many countries (Australia, New Zealand and United Kingdom) where restructured electricity sector has benefitted the consumers by producing most cost effective ways of generation, transmission and distribution.

1.17. Besides these **specific recommendations, it is necessary to ensure level playing field** for the private players to induce private investment in the electricity sector. The regulator for intra-state transmission is state regulator and that of the inter-state transmission is the central regulator. The study underscores the **role played by CERC** in facilitating competition in the sector. **Similarly, SERCs have to play a pro-active** role in enhancing efficiency by promoting competition in the various segments of electricity value chain to ensure maximum consumer welfare. The Regulators have been given security of tenure and adequate powers, which if enforced properly, could be a very effective in ensuring improvement of electricity and accessibility of electricity in the country. On the initiative of the MoP in January, 2011 to address the issue of non-performance of the regulatory statutory duty for revision of tariffs for many years, **Appellate Tribunal for Electricity (APTEL) has issued order asking regulators to exercise their** *suo moto* power under the act for revision of tariffs. **This underscores the need for regulatory predictability and certainty as fundamental to any policy for infrastructure sector reform for investor confidence and public interest at large** and the need for impact assessment for sustaining competition. It should also be noted that the Constitution recognizes India as a union of states. Therefore, the placement of 'electricity' in the concurrent list should not be mistaken as a license to form fragmented electricity markets at State level. **The behavior of certain states in hampering the inter-state trading of electricity needs to be regulated. Such impediments to free trade violates constitutional rights of the generating companies (Art 19(1)(g)). It also affects the free flow of trade as envisaged in Article 301 of the Constitution which states that 'trade, commerce and intercourse throughout the territory of India shall be free'. In *Atiabari Tea Company* case, the Supreme Court held that the freedom guaranteed by Art. 301 would become illusory if the movement, transport, or the carrying of goods were allowed to be impeded, obstructed or hampered by the State regulations (taxation in that case).**[14]

1.18. The various reasons impeding the promotion of competition in the various segments is highlighted in Fig 1.

[14] Atiabari Tea Company v. State of Assam, 1961 AIR 232.



RECOMMENDATIONS/ACTION PLAN

1.19. To deal with the identified challenges, there is need to follow an action plan to overhaul the structure of the sector. In this respect the study, inter alia, suggest following structural, policy and regulatory recommendations to design the action plan:

Structural Recommendations

- To complete meaningfully the structural reforms of the utilities, the **State governments should ensure functional and financial autonomy** to the board of directors. Management should be selected carefully and there should not be any micro management efforts from the government. Efforts should be made to induct at least 50% directors with expertise in relevant disciplines.
- As long as state continues to be single owner in the utilities, it should maintain arms' length approach in all matters relating to tariff rationalization by the regulatory commissions. The commitment of the state government should be built into MoA under the central sector scheme of R-APDRP.
- **Competition Neutrality: Need to give corporate structure and independence to SDLC to function as neutral System Operator, if necessary by amending the EA,03**
- Need to promote intra-state and inter-state activity by facilitating non-discriminatory open access for generators, traders etc. by the System operator.

- **Institutional autonomy for an independent system operator has to be ensured and regulator should oversee the transparent and non-discriminatory allocation of network access**.

Competition in the generation and Open Access in retail supply should be made a reality by taking appropriate measures, including but not limited to:

- **Level playing field** to the private players vis-à-vis public utilities in the application of policy & rules, etc.
- Adequate investment in the T&D network to **augment the capacity of networks to sustain competition**;
- **Non-discriminatory and uninterrupted third party access** to T&D network;
- **Transparency and disclosure requirements** w.r.t to Available Transmission Capacity (ATC) on real time basis;
- **Rationalization of wheeling charge and system charges;**
- The functionaries having membership on the board of these **independent system operators** (CTUs and STUs) should be barred from having any direct or indirect stake or interest in the generation or retail supply activity.

Policy Recommendations

- Need to recognize **retail supply as a separate activity for I MW and above customers** and provision for a separate service level agreements (SLAs) on the model used by Telecom service operators for managed services for retail supply thereof in the Electricity Act.
- For effective competition, there should be **segregation of competitive segment (retail supply) from monopolistic segment (distribution network)** through appropriate changes in Part IV of EA, 03, as long term objective.
- For retail competition for the benefit all customers, distribution utilities should become financially sound. MoP may link implementation of the key recommendations of Shunglu Committee[15] for financial restructuring and tariff reforms and regulatory accountability by leveraging its authority for implementing the spirit & objectives of the EA-03.
- In the light of the APTEL recent orders issued on *suo moto* PIL, MoP may consider widening the scope of section 121 by giving some authority over some areas in the interest of regulatory clarity.
- In the immediate term, following measures can be helpful in this regard:
  - **Bifurcate content from carriage** as far as IMW & above customers are concerned;
  - **Provide for licenses in content part i.e. retail supply** (an amendment in Sec. 14 of EA, 03, will be required to implement this);
  - Ensure **independent system operator** for the distribution network business;
  - Ensure **non-discriminatory third party access** to the distribution network;
  - Provide **performance based or incentive based mechanism to Franchisee model for network efficiency & customer satisfaction as precursor to retail suppliers** for effective competition.

[15] *Supra* note 13.

- Whole-hearted efforts should be made to **make Bulk supply competition a reality**, including following:
  - Recognizing the open access provision as a legal right of every bulk consumer and gradual move to include non-bulk consumers (having an electricity demand of less than 1 MW) also within this framework;
  - Rationalization of wheeling and other system charges on fair and reasonable principles for OA customers,
  - CSS reduction and the fixation should not be more than +/- 20% as per NTP
  - Instead of the 1 MW OA consumer, the retail supplier/franchisee should approach the consumer and the network operator to make the whole process easy to be adopted;
  - The working of the System Operator (SDLC) should be transparent and non-discriminatory & to provide various components of information relating to Transmission capacity in real time operations through suitable amendment in sections 32 & 33.
  - Section 11 of the EA, 03, should be amended to infuse clarity on the purposes for which the states can use the powers given under this section 11.

Regulatory Recommendations

- Pro-Active role play by the Central and State regulators to carry out following duties:
  - Duty to facilitate steps required to **augment transmission and distribution capacity** to allow competing retail suppliers a non-interrupted network access.
  - CEA may be entrusted to co-ordinate with the STUs for system upgradation to support the demands of short term market & Bulk supply consumers.
  - Duty to ensure that incumbent utility does not create barrier to Bulk consumers to source retail supply from a trader or agent or generator or any other utility.
  - Duty to create a level playing field by observing competition neutrality and not to discriminate between system users;
  - Duty to avoid any abuse of a dominant position being the network operator;
  - Duty to fix reasonable charges for allowing access to network;
  - As suggested by Shunglu Committee, MoP may need to consider mechanism for ensuring regulator commissions accountability to secure the implementation of the basic objectives of the EA,03, and in particular ensuring implementation of competition-enhancing provisions[16] of the Electricity Act 2003.\
  - **State should consider implementing an independent structure at the state level similar to the one prevailing at the central level (POSOCO) to make open access as a meaningful tool in enhancing consumer welfare.** If the states fail in this regard then similar provision laying down time frame in the Act may have to be considered.

General Recommendations:

- Adequate policies should be framed to ensure transparency, fair play and level playing field for all participants in every segment of the electricity value chain. Following steps may be helpful in this regard at various respective agencies level:
  - **Generation:**

[16] Refer to para 1.4 above.

- Fair & predictable allocation of coal and transparent procurement policies. To increase availability of coal for capacities that has been planned and/or created.
- Existing framework of coal supply processes, procedures should be streamlined to remove discriminatory provisions in the existing framework of fuel supply linkage policy of the Ministry of Coal to ensure level playing conditions for the developers of coal based generation.

- **Transmission:**
  - Transmission System capacity should be augmented with greater private participation. Existing success of tariff based independent transmission projects be extended at state level to achieve adequate capacity enhancement for sustaining competition.
  - Non-discriminatory open access without any arm-twisting behavior should be allowed to all players. This may need augmentation of the transmission capacity to avoid frequent denial on availability grounds.
  - State level system operator (SLDC) should be independent on lines of the national LDC, without having any stake in the generation or supply of electricity.
  - Efforts should be made to offset the adversities created by **monopsonic transmission utilities of the States.** Adequate and timely investments in the transmission systems and efficient and coordinated action plan to develop a robust and integrated power system in the country can be useful first step. **The CEA may be authorized to coordinate with the STUs for achievement of the shared objective of eliminating transmission constraints in manner cost effective**.
- **Distribution:**
  - Retail competition should be encouraged in the distribution network as a goal to be achieved for consumer satisfaction & welfare.
  - In the long term the distribution network should become carrier business owned by independent network operator/lincencee who should not engage in retail supply.
  - In the interim period distribution segment may be opened to franchisee model or PPP model with clear obligation to provide non-discriminatory third party access to the distribution network.
  - Improving governance, in public and private sectors, through effective use of the provisions of Sections 129, 130, 142 and 146 and making such changes as may be necessary to ensure a competitive environment and consumer welfare.
  - Introducing the concept of unified single national electricity market in India to allow free flow of electricity supply from one state to another. This will require a complete change of mindset and efforts at the State as well as Central level.

INTRODUCTION AND OBJECTIVES OF THE REPORT

2.1. With the growing understanding and importance of 'Competition' permeating in all spheres of the Indian Economy, the need to study its relevance in sectors which were once considered to be best suited for state monopoly becomes inevitable. Undoubtedly, immediately after independence, the Indian economy required strong government support. Such requirement justified the intervention of state owned monopolies in various sectors requiring high capital intensive investment e.g. telecom, transportation, civil aviation, electricity, power etc. However, with changing times and changing needs, the economy became more flexible in adopting liberalization and privatization as the facets of promoting competition, globally as well as nationally. It is interesting to take cognizance of the positive impact of liberalization and privatization[17] in sectors like telecommunications and civil aviation, especially in increasing the consumer accessibility to these services which were perceived to be luxury goods just few decades back. 'Regulation' and 'Free Competition (or market)' are two extremes of the same string and there is always a need to strike a balance between these two ends for the attainment of what is known as 'effective competition' or 'workable competition' for any specific sector. This study endeavors to strike the balance between 'regulation' and 'competition' to suggest the equilibrium point of workable competition for the ***Electricity Sector***. The study aims at reviewing the legislative framework (policies, laws, regulations, practices etc.) surrounding the electricity sector to provide an illustrative examples of those laws, regulations and policies which either exert or have the potential to exert anti-competitive effects, and thus influence the outcomes of the law/regulation/policy concerned.

2.2. The study will broadly cover 3 parts. Part I will lay down the market structure of electricity sector with main emphasis on the facets in the value chain of electricity sector, namely Generation, Transmission, Distribution and Retail Supply. This part will elucidate the present state of regulation and private sector participation in each of these activities. Part II will emphasize on identifying the provisions under the Statutes, Rules, Regulations and Policies framed for the electricity sector (those mentioned before) to elucidate the competition issues involved in the sector. The discussion will start by focusing on the intent and spirit of the legislations and policies acknowledging the importance of competition as stated under various provisions of the law. This part will then identify the competition distorting provisions under The Electricity Act and The National Electricity Policy and will locate the provisions which prima facie look pro-competitive but are actually capable of being misused for impeding competition in the electricity sector. Part III will critically examine the major competition issues in the electricity sector. This part will focus mainly on the Open Access provision, competition neutrality, retail supply competition etc., to recommend measures for their effective enforcement. This part will also attempt to provide policy suggestions and recommendations for restructuring of the electricity sector to ensure a gradual transition from highly regulated structure to fair competition paradigm.

[17] It should be noted here that privatization and liberalization are not same; the former implies change in ownership while the latter implies benefits from increased competition.

PART I: STRUCTURE OF THE ELECTRICITY SECTOR

INDIAN ELECTRICITY SECTOR

3.1. The history and evolution of Indian electricity sector dates back to 1880s when a small power generating station with local distribution was established in the hills of Darjeeling in the eastern part of India. The legislations of 1887 and 1903 that provided for private power and minimal regulation, evolved into a more comprehensive Indian Electricity Act of 1910.[18] However, post-independence the objective of extending electrification took precedence and nationalization became hijacked the private electricity licenses.

3.2. So the two legislations—the Indian Electricity Act, 1910 and the Electricity (Supply) Act, 1948—mark the historical development of the Indian electricity sector. During the pre-independence period, the electricity sector was highly competitive and Indian Electricity Act of 1910 introduced licensing system to bring uniformity and some regulation in place. However, when the electricity industry in the UK was nationalized through enactment of the Electricity Act 1947, India too followed suit in 1948 and except for some pockets such as Mumbai, Kolkata, Ahmedabad and Surat, the entire industry was nationalized by virtue of the aforesaid Act of 1948.[19]

3.3. The Electricity Act, 1948 promoted state-owned, vertically integrated structure of electricity industry through creation of State Electricity Boards (SEB). Nationalization was the ultimate objective and during this phase, licensee businesses were nationalized by the SEBs which became natural monopolies responsible for generation, transmission and distribution of electricity within the geographical limits of a particular state. The SEBs were mainly funded by the state governments and as a natural consequence they carried out the objectives of the state policies. During the 1980s, however, separation of generation from transmission had emerged as a best practice in developed countries. Following the international trend, India too adopted the unbundling of activities in the value chain of electricity generation, transmission and distribution. Inter-state transmission was segregated and assigned to Power Grid Corporation in the early 1990s. Setting up of generating stations in the private sector was also enabled. Distribution of electricity, however, remained a monopoly in the hands of State Electricity Boards (SEBs) that continued to function as integrated utilities.[20] However, when the need for liberalization and competition in the electricity sector became inevitable, the Electricity Act, 2003, mandated that State Electricity Boards will no longer exist in the existing form and will be restructured into separate generation, transmission and distribution entities**. The Act of 2003 stipulated license free thermal generation, non-discriminatory open access of the transmission system, gradual implementation of open access in the distribution system to pave way for creation of power market in India and encouragement of private sector participation in generation, transmission and distribution** with the role of **the governments being relegated to facilitator in nature.**[21] The Act introduced new concepts like power trading, non-discriminatory open access which indicated the clear intention of promoting competition and market based regime in the electricity sector. The preamble itself recognizes the need and benefits of competition and to meet this objective

[18] CCI order, Neeraj Malhotra v. NDPL and others, case no. 06 of 2009.

[19] Gajendra Haldea, Introducing Competition in Generation of Electricity, Consultation Paper of Central Electricity Regulatory Commission, August 2004, available at http://infrastructure.gov.in/pdf/CERC%20-%20competition%20in%20generation.pdf.

[20] Id.

[21] CCI order, Neeraj Malhotra v. NDPL and others, case no. 06 of 2009.

various provisions in the Act were worded to promote this intention of the legislature. This was further clarified in unambiguous words by the National Electricity Policy, 2005, which stated that the 'Electricity Act, 2003 provides an enabling framework for accelerated and more efficient development of the power sector. The Act seeks to encourage competition with appropriate regulatory intervention. Competition is expected to yield efficiency gains and in turn result in availability of quality supply of electricity to consumers at competitive rates.' On one hand, the Act relieved the requirement of licensing for generation activity[22], on the other hand, the clear provisions for grant of licenses were recognized for transmission, distribution and trading of electricity[23].

3.4. The Government of India has initiated several reform measures to create a favorable environment for addition of new generating capacity in the country. The Electricity Act 2003 has put in place a highly liberal framework for generation. There is no requirement of licensing for generation. The requirement of techno-economic clearance of CEA for thermal generation project is no longer there. For hydroelectric generation also, the limit of capital expenditure, above which concurrence of CEA is required, would be raised suitably from the present level. Captive generation has been freed from all controls.[24]

3.5. Electricity falls in the concurrent list of the Constitution meaning both the federal and state level governments are authorized to frame policies regarding electricity industry. In addition to Central Electricity Regulatory Commission, established at the Centre, almost every state now has State Electricity Regulatory Commissions (SERCs) that have been set up by the state governments to regulate electricity markets, encourage competition and private investment.[25] The Ministry of Power signed MoUs with the states to undertake time bound distribution reforms as a part of reform process. **It is a sad commentary on the principal stakeholder ie state governments & regulators that the consensus built around policy debates and institutional design of the industry as reflected in the EA,03, that after several extensions some states have restructured the SEBs more on paper than in the spirit of the act**. Similar is the position about the 28 regulatory commissions and 23 SERCs, although, have open access regulations as going forward to meet certain obligations under the law without ensuring the core objective of enabling competition. & efficiency. However, the federal structure conferring parallel powers to the States has resulted in retaining some form of monopolistic character even after unbundling of the SEBs. **Even after 8 years have passed after the Electricity Act's enactment, the growth and developments envisaged is far from the intended growth objectives. The demand-supply mismatch coupled with lack of competition through open access and flowing from the inefficient working of the sector has amounted to highest prices for energy in Purchasing Power Parity terms for an Indian consumer in comparison with countries like US, Japan and China.[26]** With the issue of high prices, another issue is inaccessibility of electricity even at a high price.

3.6. Competition has enormous issue of resolving these issues if employed in an adequate and controlled but enabling manner. The evolution of electricity reforms throughout the world indicate some prime characteristics that can form the basis of reform process—independent power production, competition in generation and retail supply, open access to transmission

[22] See Section 7 of the Electricity Act, 2003.
[23] See Section 14 of the Electricity Act, 2003.
[24] National Electricity polcy, 2005, clause 5.2.2.
[25] Devendra Kodwani, Institutional Endowments and Electricity Regulation in India, 2006, available at *regulation.upf.edu/bath-06/10_kodwani.pdf.*
[26] CCI order, Neeraj Malhotra v. NDPL and others, case no. 06 of 2009.

and distribution networks, decentralization, privatization and unbundling of generation, transmission and distribution. Even the Indian electricity laws and policy seem to have understood the need and importance of competition and market based structure. Though the Act and the Policy envisioned competition and multiple players in all segments of the electricity value chain, competition has not prospered much anywhere except generation. **Even in the generation segment the competition has been half-hearted. Two major reasons for this are—Monopsony at the procurement side (Single Buyer Model for the generated electricity) and monopoly at the raw material side (Coal and Gas).** Though the enabling provisions of the Act and Policy are capable of encouraging competition in the generation segment, the lack of competition in the upstream segment (coal is a government monopoly) affects the competition at the generation level. During the XI Five Year Plan, about 22% of the total capacity addition was planned to be added by private sector with private sector contributing as much as 13.69% of the total electricity generation.[27]

3.7. The Transmission & Distribution network of 5.7 million circuit km in India is the 3rd largest in the world. **But, the benefits from competition in the generation sector were hijacked by the respective monopsonic transmission utilities of the States. As a result, the industry structure consisted of an interconnected chain of monopolies referred to as a 'single buyer' model where the benefits of competition have been elusive.**[28] The Transmission System requires adequate and timely investments and also efficient and coordinated action to develop a robust and integrated power system for the country. The National Electricity Policy has envisaged the need for adequately augmenting transmission capacity and have emphasized on various objectives in the policy. The Central Transmission Utility (CTU) and State Transmission Utility (STU) have the key responsibility of network planning and development based on the National Electricity Plan in coordination with all concerned agencies as provided in the Act. The CTU is responsible for the national and regional transmission system planning and development. The STU is responsible for planning and development of the intra-state transmission system. It was revealed that there was no clarity as to how the state transmission net work has to be strengthened to allow the system to handle demand for buyers and OA customers. **The CEA, it was felt, may be authorized to coordinate with the STUs for achievement of the shared objective of eliminating transmission constraints in manner cost effective**. Network expansion should be planned and implemented keeping in view the anticipated transmission needs that would be incident on the system in the open access regime. Prior agreement with the beneficiaries would not be a pre-condition for network expansion. CTU/STU should undertake network expansion after identifying the requirements in consultation with stakeholders and taking up the execution after due regulatory approvals.[29]

3.8. The Electricity Act prohibits the State transmission utilities/transmission licensees from engaging in trading in electricity to ensure competitive neutrality but the presence of strong control and influence of State Discoms on STUs defeated this objective. The Act stipulates that non-discriminatory open access shall be provided to competing generators supplying power to licensees upon payment of transmission charge to be determined by the appropriate Commission.[30] However, very minimal developments have taken place on this front. The

[27] Eleventh Five Year Plan on Energy, Planning Commission, Chapter 10, pp 354.

[28] Gajendra Haldea, Introducing Competition in Generation of Electricity, Consultation Paper of Central Electricity Regulatory Commission, August 2004, available at http://infrastructure.gov.in/pdf/CERC%20-%20competition%20in%20generation.pdf.

[29] National Electricity Policy, 2005, clause 5.3.2.

[30] National Electricity Policy, 2005, clause 5.3.4.

necessary regulatory framework for providing non-discriminatory open access in transmission as mandated in the Electricity Act 2003 is essential for signalling efficient choice in locating generation capacity and for encouraging trading in electricity for optimum utilization of generation resources and consequently for reducing the cost of supply.[31]

3.9. Distribution again remains a public monopoly in spite of the Act laying down a multiple buyer model. According to the TERI report[32], in terms of energy sales to consumers, 87% is made by SEBs/Unbundled state-owned distribution companies (Discoms) and 13% by private Discoms. The provision of distribution licensee in Sec 14 of the Act and provision of Open Access for the distribution network in Sec 42 of the Act are evident that Distribution was not designed or envisaged to be a monopoly activity under the Electricity Act, 2003. However, the provision of demarcating area of supply for any distribution licensee coupled with practical allotment of mutually exclusive areas of supply to the multiple Dicsoms defeat the purpose which competition law seeks to achieve. Competition law strives for multiple sellers amongst which the consumers is free to choose the most efficient or the most productive one**. The kind of multiple distribution licensees' model (in few states[33]) we have is not conducive of real competition. It is like allowing 3 or 4 telecom companies to provide telecom services but in different circles or areas. The competition or market based model pre-supposes these suppliers of product or services to compete with each other in the same market.**

3.10. Trading is recognized in the Electricity Act as a distinct activity which can be done by multiple licensees. An electricity trader requires a license for trading in electricity from the appropriate Electricity Regulatory Commission, i.e. from Central Electricity Regulatory Commission for inter-State trading of electricity and from the respective State Regulatory Commission for intra-State trading of electricity. The Appropriate Commission may specify the technical requirement, capital adequacy requirement and creditworthiness for being an electricity trader. But the trend till now discloses that in this segment again we see little competition as out of the 42 grading licenses issued by CERC only a handful are in the market. Result is that competition in the market is skewed. Of the total volume of 809 BU of electricity generated the traded, volume trough Exchanges is just 15.52 BU in 2010-2011. . Power Trading Corporation (PTC) India Private Limited is the dominant player.

3.11. The Appropriate Commission is mandated to promote the development of a market (including trading) in power. As per Para 5.7.1 of National Electricity Policy, it is open to private developer to sell a part of new generating capacities (Say 15% of capacity) to be sold outside long term PPAs to promote market development which would lead to reduction in tariff aimed to provide significant benefits to consumers. This would encourage short/ medium term trading of power. But for this to happen Appropriate Commission ought to provide enabling regime by way of reasonable access charges, connectivity and/or innovative tariff designs.

3.12. The efforts of the Central Government in bringing reforms for infusing competition have met with success in creating competitive procurement for power through initiatives like UMMP and power procurement by utilities as per NTP. CERC has also played a proactive

[31] National Electricity Policy, 2005, clause 5.3.6.

[32] TERI, Competition in India's Energy Sector, Draft Report 2007, available at

[33] Delhi can be a good example of this. The distribution arm of erstwhile Delhi Vidyut Board has been privatized and licenses have been granted to three distribution companies—NDPL, BSES Rajdhani Power limited (BSPL) and BSES Yamuna Power Limited (BYPL) except for the areas under NDMC and Military Engineering Services. These distribution companies are though supplying electricity to the consumers but only in their respective areas. NDPL is supplying to North & North West part, BYPL to Central and East and BSPL to South and west areas of Delhi.

role in promoting competition principles. CTU or the Power Grid Corporation is functionally independent and autonomous as entity regulated by CERC Central Government has ensured competition in generation, transmission, distribution and trading. Under the provision of granting license for inter-State trading of power, the CERC has, as on February 2009, granted license to 43 power traders for inter-State trading of power.[34] However, state governments have not followed through the reforms; rather they have adopted the policy of protectionism towards their utilities, not encouraging any form of competition in the distribution sector.

3.13. The most important factor for ensuring development of competition in the electricity markets, as envisaged in Sec 66 of the Electricity Act, is the effective separation of monopolistic activities such as the operation of the transmission and distribution network from the potentially competitive activities (e.g. generation and retail supply)[35]. **The main objective of unbundling is to allow entry for more players and to avoid discrimination in the competitive segments of the electricity supply industry**. Thus, considerable degree of separation is needed between transmission and generation, distribution and generation, and distribution and end user supply[36]. Only in such situation the fruits of competition will trickle down to the end consumer. The following part will list out the spirit and intention of the Electricity Act in engraining efficiency and competition as the basic pillars to ensure consumer welfare. **The part will further highlight provisions in the Act that have distorted the competition in various segments of the electricity value chain.**

[34] Ministry of Power, Government of India, Annual Report 2008-09, pp. 65, available at http://www.cea.nic.in/reports/yearly/annual_rep/2008-09/ar_08_09.pdf.

[35] Joskow, P.L. (2003). "Electricity Sector Restructuring and Competition: Lessons Learned," 40 Cuadernosde Economia (Latin American Journal of Economics), pp. 548-558.

[36]International Energy Agency, Competition in Electricity Market, Head of Publications Service, OECD (2001), pp 12.

PART II
CRITICAL ANALYSIS OF THE ELECTRICITY ACT, 2003

The various legislations and Policy documents in the electricity sector are generally pro-competitive. The Preamble of the Electricity Act, 2003, clearly states that Electricity Act is envisaged as '[a]n Act to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity and generally **for taking measures conducive to development of electricity industry, promoting competition therein, protecting interest of consumers and supply of electricity to all areas, rationalization of electricity tariff, ensuring transparent policies regarding subsidies, promotion of efficient and environmentally benign policies,** constitution of Central Electricity Authority, Regulatory Commissions and establishment of Appellate Tribunal and for matters connected therewith or incidental thereto'. It is noteworthy that Act unambiguously recognizes promotion of competition and efficient & transparent policies in the generation, transmission and distribution of electricity for protecting interest of the consumers and for ensuring 'electricity to all'. Before critically analyzing the various provisions of the Electricity Act in detail to see their competition distortive effect, it is imperative to note the intention of the legislature in imbibing the ultimate object of promoting competition in cross segments of electricity sector. The following table[37] is illustrative of that clear intention:

Market Design concepts	Minimum Pre-requisites	Relevant provisions of the Act defining pre-requisites
Wholesale competition	• Open Access to transmission network on non-discriminatory basis. • Power procurement through competitive process or trading and in conjunction with bilateral contracting; • Surrogate regulations, technical codes, commercial contracts, metering, billing, and settlement arrangements.	EA, 03—Secs. 2(47), 10(1), 10(2), 38, 39, 40, 42(2), 42(3), 42(4)
Retail Competition	• Open Access to Transmission as well as distribution networks; • Flow-through of wholesale costs in retail tariffs.	EA, 03—Secs. 2(47), 9(1), 9(2), 10(1), 10(2), 38, 39, 40, 42(2), 42(3), 42(4), 45, 62(4)
Operationalizing non-discrimination in network access	• Transparent information disclosure rules; • Fair allocation and tradability of transmission rights; • Prevent gaming and safeguard abuse of dominant position.	EA, 03—Secs. 2(47), 38 (2), 39(2), 40 (c), 42 (3)
Competitive neutrality (abuse of dominant	• Independent system operation	EA, 03—Secs. 38 (2), 39 (2), 40 (c), 42(3), 60, 66,

[37] Source: "Electricity Act, 2003 and the emerging regulatory challenges", J L Bajaj and Anish De, International Journal of Regulation and Governance, Volume 4 (1), June 2004.

position)	(requires segregation of transmission and system operation functions) and neutrality of RLDC/ SLDC from market participants; • Defined rules of corporate governance; • Separate policy on abuse of dominant market position.	134, 142, 146
Efficiency	• Operationalizing economic despatch and integrated operations of the grid; • Capacity procurement progressively through tariff bidding, covering both long-term and short-term purchases; • Tradability of PPA (power purchase agreement) and short-term power purchase contracts • Competition in trading and generation; • Tradability of transmission rights; • Optimal location of generation and transmission facilities; • Time differentiated and cost-responsive wholesale and retail tariffs.	EA, 03—Preamble, Secs 29, 33, 61, 63, 79 (2), 86(2) NEP—Paras 1.6, 5.2.21, 5.4.3, 5.4.4, 5.8.5, NTP—Paras 4, 5.1, 5.3, 8.1, 8.4
Power markets	• Development of power markets by regulators taking into consideration the prevailing policy framework	EA, 03—Secs 66, 79, 86 NEP—Paras 5.3.2, 5.7.1

Also note that the National Electricity Policy, 2005 very categorically acknowledges the need for competition, at least in the generation and retail supply of electricity. For achieving the objectives, the policy[38] underscored the following:-

- CERC to issue license for inter-state trading which would include authorization for trading throughout the country;
- Considering the positive impact of ABT[39] regime introduced by CERC at the national level SERCs were advised to introduce the ABT regime at the State level within one year.

[38] National Electricity Policy, 2005, clause 5.7.

[39] **Availability Based Tariff** (ABT) is a frequency based pricing mechanism for electric power. The ABT falls under electricity market mechanisms to charge and regulate power to achieve short term and long term network stability as well as incentives and dis-incentives to market participants against deviations in committed supplies as the case may be.

- Captive generating plants should be permitted to sell electricity to licensees and consumers when they are allowed open access by SERCs under section 42 of the Act.
- Development of power market would need to be undertaken by the Appropriate Commission in consultation with all concerned.
- The Central Commission and the State Commissions are empowered to make regulations under section 178 and section 181 of the Act respectively. These regulations will ensure implementation of various provisions of the Act regarding encouragement to competition and also consumer protection. The Regulatory Commissions are advised to notify various regulations expeditiously.
- Enabling regulations for inter and intra State trading and also regulations on power exchange shall be notified by the appropriate Commissions within six months.

Therefore, not even iota of doubt is there that the Act and Policy have been designed to promote competition. However, the reality shows different appalling results. **The following table critically examines the various provisions of the Electricity Act, 2003, to highlight why the provisions failed to achieve the results they were intended to achieve.**

Section	Language of the Act	Analysis
Preamble	An Act to consolidate the laws relating to generation, transmission, distribution, trading and use of electricity and generally **for taking measures conducive to development of electricity industry, promoting competition therein, protecting interest of consumers and supply of electricity to all areas, rationalization of electricity tariff, ensuring transparent policies regarding subsidies, promotion of efficient and environmentally benign policies,** constitution of Central Electricity Authority, Regulatory Commissions and establishment of Appellate Tribunal and for matters connected therewith or incidental thereto.	As explained earlier, the preamble sets the right pace to bring reforms for development of electricity industry, promoting competition and efficiency & protecting consumer interest, etc.
Sec 2(47)	"open access" means the non-discriminatory provision for the use of transmission lines or distribution system or associated facilities with such lines or system by any licensee or consumer or a person engaged in generation in	This definition of open access provides a belief that this is a pro-competitive clause. However, a detailed analysis of respective provisions of the act and regulations of the SERCs relating to open-access suggests that

	accordance with the regulations specified by the Appropriate Commission;	Open-Access has not become a reality even after seven year as it is provided in the Act. The application of surcharge and cross-subsidy charge over and above the wheeling charge virtually act as impediment making open-access system a less-attractive option for the consumers who can otherwise have an option of switching to alternative supplier under the Electricity Act (Sec 42(2))
Sec 7	**Generating company and requirement for setting up of generating station:** Any generating company may establish, operate and maintain a generating station without obtaining a licence under this Act if it complies with the technical standards relating to connectivity with the grid referred to in clause (b) of section 73.	Although no license is required in generation but Central Electricity Authority (CEA) can prescribe technical standards for construction of electrical plants, electric lines and connectivity to the grid. Though, licensing requirement has been relieved for generation, technical standards can be imposed to make entry difficult for prospective players in the Generation Sector. State approvals for land acquisition, water allocation, etc are opaque and time consuming. It should be noted that although competition is promoted at the generation level but it is only half-hearted approach. The main input for electricity generation is Coal which remains a government monopoly in production, price and distribution**. So any competition at the generation would be meaningless and distortive unless upstream competition is achieved with full heart**. Many others forms of distortion and barriers have been noticed in the course of the implementation. **The competition distortion may arise from restrictive rules,** discriminatory technical standards and effect of such restriction will depend on or unfriendly environment and attitude to competition. Also, the state utilities indulged in generation do not require a

		license because they are deemed licensees under the Act.
Sec 9(2)	**Captive generation:** (2) Every person, who has constructed a captive generating plant and maintains and operates such plant, shall have the right to open access for the purposes of carrying electricity from his captive generating plant to the destination of his use: Provided that such open access shall be subject to availability of adequate transmission facility and such availability of transmission facility shall be determined by the Central Transmission Utility or the State Transmission Utility, as the case may be:	Although the sub-section identifies the right of the captive generating plant holder to demand open access for the purpose of carrying electricity to the destination of his use, the transmission utility has the option of denying open access for availability reasons. Considering the lack of transparency and accountability of the transmission companies and **information asymmetry** it will be difficult to conclude whether the denial was actually for availability reason or for discouraging the construction of captive generation plants firm.
Sec 10(2)	A generating company may supply electricity to any licensee in accordance with this Act and the rules and regulations made thereunder and may, subject to the regulations made under sub-section (2) of section 42, supply electricity to any consumer.	The Act, though, doesn't bar the generating company from supplying the electricity to any licensee or any consumer but it lays down rules for such supply**. It should be noted that 'essential facilities doctrine' is not introduced in the Act in letter and spirit**. The open access provisions though appear as surrogate system like the doctrine of essential facility, it has not evolved as progressively as in other parts of the world. Without having strong essential facility doctrine recognized in the legal framework, the open access facility will not achieve desired results.
Sec 11(1)	Appropriate Government may specify that a generating company shall, in extraordinary circumstances operate and maintain any generating station in accordance with the directions of that Government. Explanation. - For the purposes of this section, the expression "extraordinary circumstances" means circumstances arising out of threat to security of the State, public order or a natural calamity or such other circumstances arising in	This provision has been used by various state governments in the past for denying open-access for inter-state trading. **This provision has been extensively misused by State Governments for denying Open Access** to the generating companies. The Section 11 order have been wrongly used to coerce the STUs in not granting concurrence as required under Clause 8 of the CERC regulations of 2008. The CERC

	the public interest.	has clarified on various occasions that such denial is non-est and without any legal authority. In an order dated 22.1.2009 in Petition No. 147/2008 (Reliance Energy Trading Company Ltd v. Karnataka Power Transmission Corporation Ltd and others) the Commission held that *Section 11 empowers the Government to give directions to generating companies. Such directions would only bind the generating companies. In no manner can it be said that such directions that the Government could give to the generating companies would also bind others. In other words, the STU / Transmission Licensee who are statutorily mandated under Sections 39 and 40 to provide non-discriminating open access to the transmission system cannot be bound by the directions given by the Government to the generating companies under Section 11…….. The administrative functions under Section 11 cannot impinge on the legislation made by the Commission which only will decide a course of action in the grant of open access in terms and in accordance with the open access regulations. In that view of the matter and in light of the position under law stated in the foregoing paragraphs, the denial of open access by the Respondents making the aforesaid Government's Order as the basis for such denial, would not be legally sustainable, and is therefore held to be wholly void"*
Sec 12	No person shall (a) transmit electricity; or (b) distribute electricity; or (c) undertake trading in electricity, unless he is authorised to do so by a licence issued under section 14, or is exempt under section 13.	License is necessary for any person who intends to enter in the transmission, distribution and trading of electricity. This can be an entry barrier in the above stated operating units if the licensing requirements are unreasonably strict. This Section is another illustration of how monopolistic nature of bulk supply as well as retail supply was perceived and planned to be abolished with the enactment of the Electricity Act 2003. The Act provides for non-discriminatory open access of the

		transmission network, de-licensing of generation including captive power generation. The Act recognizes transmission, distribution, trading as distinct activities. Such provisions of the Act seem to be capable of providing an enabling environment for development of bulk power market in the country. Also the Phased open access of the distribution network to end consumer for supply from other sources by respective state utilities is inserted in the Act to provide consumer choice; however the **subjection of that open access regulations to availability requirement, concurrence and NOC certification and the cross-subsidy surcharge makes it a pseudo option**.
Sec 14	Grant of Licence: …….. .. .. .. Provided further that the Central Transmission Utility or the State Transmission Utility shall be deemed to be a transmission licensee under this Act: Provided also that in case an Appropriate Government transmits electricity or distributes electricity or undertakes trading in electricity, whether before or after the commencement of this Act, such Government shall be deemed to be a licensee under this Act, but shall not be required to obtain a licence under this Act.	Under this Section the private parties are required to apply for license for transmission, distribution and trading activity, but the government companies shall be deemed to be a licensee under the Act and they are not required to obtain licence. This discrimination bereaves private players form having a level playing field vis-a-vis the government authority.

	.. Provided also that the Appropriate Commission may grant a licence to two or more persons for distribution of electricity **through their own distribution system** within the same area, subject to the conditions that the applicant for grant of licence within the same area shall, without prejudice to the other conditions or requirements under this Act, comply with the additional requirements relating to the capital adequacy, credit-worthiness, or code of conduct as may be prescribed by the Central Government, and no such applicant, who complies with all the requirements for grant of licence, shall be refused grant of licence on the ground that there already exists a licensee in the same area for the same purpose.	The provision of allowing licensee to set-up his own distribution system can have cost concerns, thereby making this option not workable. **It is submitted that the Act should recognize 'essential facilities' doctrine to provide for easy access of those networks which can't be economically replicated**. While common carrier principle is recognized in the Act under the proviso to Sec 42(2), **it has not provided clarity to carrier as separate network element under this doctrine as means of ensuring level playing conditions for new entrants.** *Proviso to Sec 42(2): Provided also that the State Commission shall, not later than five years from the date of commencement of the Electricity (Amendment) Act, 2003, by regulations, provide such open access to all consumers who require a supply of electricity where the maximum power to be made available at any time exceeds one megawatt.*
Sec 16	**Condition of licence:** The Appropriate Commission may specify any general or specific conditions which shall apply either to a licensee or class of licensees and such conditions shall be deemed to be conditions of such licence:	The misuse of this clause can have competition distorting effects. The Appropriate Commission (Central Regulatory Commission or State commission) has the power to impose conditions, general as well as specific, on **any licensee or class of licensee**. This gives ample powers to the Commission without safeguard against adverse effect on competition in imposing different restrictions on different licensees is seen as lacuna. There have been instances of discriminatory conditions imposed that have caused non level playing field for the players in the electricity sector in some

		states. Also too much regulation and accompanying uncertainty can impede the entry of fair number of players in the market for effective competition. It is worth noting here that in UK, the Utilities Act, 2000, also states that standard conditions for a license can be modified in particular cases but such modification is subject to the condition that competition is not distorted as a result of modification. See Sec 34 and 35 of that Act.
Sec 17(3)	No licensee shall at any time assign his license or transfer his utility, or any part thereof, by sale, lease, exchange or otherwise without the prior approval of the Appropriate Commission.	Power of transfer/alienation of license is substantially restricted. This can be viewed as an exit barrier by prospective player planning to apply for license. But it is riddled with many complexities. For a regulator utility consent of regulatory commission may be essential requirement. Section 18 is an enabling provision to allow new licensee by altering the existing license conditions or to allow franchisee in the licensee's area. This provision, however, has been seen as restrictive and needs to be reviewed to encourage competition.
Sec 23	**Directions to licensees:** If the Appropriate Commission is of the opinion that it is necessary or expedient so to do for maintaining the efficient supply, securing the equitable distribution of electricity and promoting competition, it may, by order, provide for regulating supply, distribution, consumption or use thereof.	In addition to the Preamble, the concern for having efficient supply, equitable distribution and competition is also stated at various places in the Electricity Act, 2003. This provision is a good example of such concern which states regulation as a means to induce efficiency and competition. Though advocates of free competition consider 'regulation for competition' as an oxymoronic phrase but sectors where players do not have a level

		playing field and where there is a demand-supply mismatch, regulating competition is very much required. However, in practice these directions were seldom given for the objects stated in the Section. Rather, the SERCs have turned a blind eye to the instances in some states where directions to the generating companies were issued under Sec 11 to curb their inter-state power supply. It must be seen here that CERC have ample power under the Act to correct distortions under Sec 11.Regulatory capture is obvious as powers in the section 23 have seldom been used to remove distortions/ barriers to competition.
Sec 25	**Inter-State, regional and inter-regional transmission:** For the purposes of this Part, the Central Government may, make region wise demarcation of the country, and, from time to time, make such modifications therein as it may consider necessary for the efficient, economical and integrated transmission and supply of electricity, and in particular to facilitate voluntary inter-connections and co-ordination of facilities for the inter- State, regional and inter-regional generation and transmission of electricity.	This clause is pro-competitive in nature as it is not only stipulating efficient and economical transmission and supply of electricity but is also suggesting facilitation of inter-connections and inter-State generation and transmission of electricity. The successful implementation of this objective requires robust implementation by the CERC & SERCs of the Open Access provisions as a pre-requisite. There is, however, a growing dissatisfaction at the slow progress in promoting Open Access across the States, in spite of the framework embedded in the EA, 03. Its implementation has not been in a meaningful manner for the Open Access users. Some of the factors that are acting as disincentive or barrier to Open Access and competition are: • The present bias is in favour of long term PPAs and absence of products for different kinds of Open Access requests that may be

		required by the consumer. • Lack of strong commitment of SERCs to promote competition through effective oversight and appropriate intervention and directions • High "cross subsidy" surcharge and "other charges" on third party demanding Open Access • Uncertain availability of transmission corridor for Open Access Users on account of lack of transparent data for available transmission capacity (ATC). • Subservient and partisan role of LDCs under the pressure of State Utilities in denying permissions or NOCs • Absence of standard agreement for supply arrangements and settlement procedures devised by the SERCs
Sec 28(2)	The Regional Load Despatch Centre shall comply with such principles, guidelines and methodologies in respect of the wheeling and optimum scheduling and despatch of electricity as the Central Commission may specify in the Grid Code.	Electricity is a peculiar commodity cannot be practically stored and its instant transportation (transmission) requires a network of wires. Because of the heavy expenditure required for setting up such a transmission network, it is not advisable to replicate such a network. The Act, therefore, provides for independent entities at the regional and state level to supervise, coordinate and ensure the optimum flow of electricity. However the wheeling of electricity generated by other companies by the state carrier comes with a transmission charge and a surcharge. This surcharge sometimes is so exorbitant that it distorts the otherwise efficient cost of generation companies and thereby it provides a distortive picture of relative efficiency of such generators of electricity.

		Another factor which impedes competition is the differential preferential treatment accorded to State Utility by the SLDC (because of effective control of state government and state utilities over SLDCs) which prevent open access from being non-discriminatory in reality. Yet another factor can be non-availability of capacity or congestion excuse given by SLDC while denying open access to private players. The Appropriate Commission can regulate such behavior by issuing guidelines or directions to SLDCs to display Available Transmission Capacity online on real time information basis.
Sec 30	The State Commission shall facilitate and promote transmission, wheeling and inter-connection arrangements within its territorial jurisdiction for the transmission and supply of electricity by economical and efficient utilisation of the electricity.	This again is a pro-competitive clause in the Electricity Act enabling level playing field for the domestic competitors**. However, the practical examples of various States indicate that the State Commissions have not been very pro-active to facilitate competition**.
Sec 35 and 36	**Sec 35: Intervening transmission facilities:** The Appropriate Commission may, on an application by any licensee, by order require any other licensee owning or operating intervening transmission facilities to provide the use of such facilities to the extent of surplus capacity available with such licensee: **Sec 36: Charges for intervening transmission facilities:** (1) Every licensee shall, on an order made under section 35, provide his intervening transmission facilities at rates, charges and terms and conditions as may be mutually agreed upon : Provided that the Appropriate Commission may specify rates, charges and terms and conditions if these cannot be mutually agreed upon by the	Although this allows licensees to apply for requiring any licensee to provide use of intervening transmission facilities on fair and reasonable charges. But in actual practice SERCs have done precious little to achieve the intent of the legislation. Besides, reasonable and level playing rules have not been made as intended in the section 36 in the Act. What matters ultimately is that OA customer's request is included in the dispatch schedules released by the Regional Load Despatch Centre (RLDC). But the State Load Despatch Centres (SLDCs) have assumed a role at par with the Regional Load Despatch Centre (RLDC), which is not the intent of the Act.

	licensees. (2) The rates, charges and terms and conditions referred to in sub-section (1) shall be fair and reasonable, and may be allocated in proportion to the use of such facilities.	Even, CERC has conceded in its (Open Access in Inter-State Transmission) Regulations, 2008, much larger scope to the LDCs than it was required in the light of the objective of achieving Open Access under the EA, 03. The result is that the provisions of clause 8 (Concurrence of State Load Despatch Centre for bilateral and collective transactions) of CERC Regulations, 2008, are being used to virtually deny Open Access for bilateral transactions between Open Access customers and generators and CPP. A number of petitions have been filed before the Hon'ble CERC against utilities denying open access. **In this area of the reforms, role of the state regulator becomes crucial**. The regulator has to recognize the fundamental principle that the transmission network is an '**essential facility'** as has been recognized in various developed countries in the world. It should be acknowledged that transmission system is neither easy to build nor is it economically viable to be replicated. Such essential facility should be allowed to other suppliers of electricity on a "charge" which should be phased out in order to avoid price distortion of production of electricity by them. Such essential facility should not be integrated, neither downward nor upward, in the electricity chain and should be owned by an independent entity for fair competition in the generation and supply chain. **The doctrine of essential facilities was first evolved in the US** where it was held that the owner of an essential facility has a duty to share it with others i.e. a unilateral refusal to share constitute a violation of

		Sherman Act, 1890. Other jurisdictions, like EU, Singapore etc., have also recognized this doctrine under their respective competition laws. The doctrine has helped these jurisdictions to oblige the owner of essential facilities to share the intervening facilities with the other competitors.
Sec 37	**Directions by Appropriate Government:** The Appropriate Government may issue directions to the Regional Load Despatch Centres or State Load Despatch Centres, as the case may be, to take such measures as may be necessary for maintaining smooth and stable transmission and supply of electricity to any region or State.	This provision could have been used to issue directions to SERCs for allowing open access or for effective ownership separation of STUs and Discoms. Functional unbundling will not serve the real purpose if the functionaries heading the transmission and distribution utilities are same or related. It will never bring independence in the unbundled activities of the electricity value chain as intended in the Act and Policy. **However, it is disappointing to realize that even after 8 years of enforcement of Electricity Act, 2003, the Appropriate Commission have not fully utilized the powers to issue directions.**
Sec 38(2)	The functions of the Central Transmission Utility shall be - (a) .. (b) .. (c) .. (d) to provide non-discriminatory open access to its transmission system for use by- (i) any licensee or generating company on payment of the transmission charges; or (ii) any consumer as and when such open access is provided by the State Commission under sub-section (2) of section 42, on payment of the transmission charges and a surcharge thereon, as	Though this section stipulates open access to licensees and to consumers who choose alternate suppliers of electricity, such open access is double charged in case of consumers. **The consumer has to pay the wheeling transmission charge plus a surcharge plus cross subsidies (apart from electricity duty**). This makes the option of choosing an alternate supplier less attractive thereby discouraging competition in the electricity supply sector. CERC has come out with a very positive order, which addresses many of the concerns which existed with reference to OA. Issues already addressed by CERC

	may be specified by the Central Commission; .. .. Provided further that such surcharge and cross subsidies shall be progressively reduced in the manner as may be specified by the Central Commission:	include (a) non-discriminatory interconnection / connectivity to generators and trader and IPPs Inter-State movement of power, (b) power of SLDC for refusal for concurrence for Open Access applicants / users effectively curbed, (c) facilities for advance scheduling for bilateral transactions made easier, (d) exit options for parities are made reasonable and transparent, (e) new UI Regulations April, 2010 to promote transactions for sale at power exchanges & curbs gaming. These provisions in the new OA order (2009 regulations) have enabled generators / traders / utilities to take advantage of transactions, both long term bilateral and trading, power exchanges. **However, the provisions in the new order have not provided level playing field for short term and medium term OA consumers as against the long term OA consumers**. MTOA customers creating dedicated transmission line at own cost is not given the benefit of augmentation of the transmission system. Other concerns include, bulk consumers (with load level of 100MW) is not defined to include group of individual industrial or commercial consumers, **treatment of STOA and MTOA as residual capacity for provision of OA and not explicitly planning for their capacities, uncertainty faced by MTOA consumers** for renewal of OA, SLDC providing concurrence for bilateral and collective transactions by MTOA weakens control of vested with CERC and instead RLDC should be the nodal agency for all MTOA cases of inter-state transmission, and issues related to intervening transmission charges. It is interesting to note here that the level

		of surcharge and subsidies will be phased out but not eliminated as was the intention of the legislature when Electricity Act of 2003 was enforced. By the amendment of 2007, the words *'and eliminated'* were omitted. It is submitted that some years down the line, when probably the cost of building transmission lines and network breakeven, **the surcharge and cross-subsidy should be eliminated. Only nominal wheeling charge should be applicable for using the network to ensure fair competition in the electricity supply sector**.
Sec 42(2)	The State Commission shall introduce open access in such phases and subject to such conditions, (including the cross subsidies, and other operational constraints) as may be specified within one year of the appointed date by it and in specifying the extent of open access in successive phases and in determining the charges for wheeling, it shall have due regard to all relevant factors including such cross subsidies, and other operational constraints: …. …. …. …. Provided also that the State Commission shall, not later than five years from the date of commencement of the Electricity (Amendment) Act, 2003, by regulations, provide such open access to all consumers who require a supply of electricity where the maximum power to be made available at any time exceeds one	Open access is to be introduced in phases but subject to surcharge, cross-subsidy and other operational constraints. It is disappointing that Open Access provision have not been used to facilitate introduction of competition in the distribution segment as envisaged in the Act. With effect from Jan 09, Open Access was legally to be made available to a 1mw and above bulk consumer of distribution licensee if such consumer gives notice thereof. The distribution licensee with respect to such supply is required to act as **common carrier** & provide non-discriminatory Open Access. And this right is available to any trader, licensee and generator for supply of electricity to any person or customer demanding or requiring supply of **electricity. The intention of the legislature is absolutely clear that the legal right of every customer with a certain demand of electricity must get open access.** This has now become a legal right for the bulk consumer from 2009 onwards. The intention of including this

	megawatt.	provision in Sec 42 was to ensure competition and open access at least for the bulk consumer. **Sec 42 read with Sec 49 gives full freedom to ensure competitive tariff structure.** This has now been backed with some kind of policy clarity so that there is no scope of different interpretation by different regulators. A reference in this regard can be made to the recent opinion[40] from Ministry of Law and Justice on the operationalization of open access in power sector. The Ministry categorically strongly opined that since the fifth proviso is introduced in the Electricity Act in January 2004, the five years expire in January 2009. Therefore, 1 MW and above consumers are deemed to be open access consumers and the regulator has no jurisdiction over fixing the energy charges for them.[41] This would clear the path for the introduction of retail competition at least for bulk consumers and eventually may lead other consumers as well. **That right has to be ensured through enabling regulations and not restrictive**. Existing OA State Regulations are Ineffective & Half Hearted. Service level obligations for utilities are not standardized. Much of the Transition period not utilized for leaning or realignments in the regulations. Thus, virtually utility monopoly continues.[42] But the crucial issue is that, the 'choice' of Open access is allowed only to consumers in whose case the electricity demand exceeds one megawatt. This is unlikely to challenge utilities in the absence of real

[40] *Available at* http://www.powermin.nic.in/whats_new/pdf/Opinion_from_Mo_Law_&_Justice_on_The_Operationalization_in_Power_Sector_Nov_2011.pdf.
[41] *Id.* at point 6.
[42] **Pradip Baijal & V.S. Ailawadi,** Presentation on **Inter State Open Access Implementation,** IDFC Energy Group,

		competition. This may also appear to be discriminatory clause because it categorizes consumers in 2 categories—those having demand up to one megawatt and those having demand exceeding one megawatt—the former have no choice of supplier but the latter can choose a private supplier for electricity. This clause is exclusionary and doesn't provide equal opportunity to all consumers and devoid some consumer of fair choices, even after 8 years of the EA, 03. Also note that cross subsidization of former category of consumer by charging surcharge and cross-subsidy charge from the latter category of consumers can have competition concerns. The UK electricity sector also started with phasing provision for allowing consumer choices but in 5 years' time they have allowed free choice to all consumers irrespective of their electricity demand.
Sec 52(1)	**Provisions with respect to electricity traders:** (1) Without prejudice to the provisions contained in clause (c) of section 12, the Appropriate Commission may, specify the technical requirement, capital adequacy requirement and credit worthiness for being an electricity trader.	Such power of specifying technical requirement, capital adequacy requirement and credit worthiness for being an electricity trader can have competition distortive effects. If the requirements are set arbitrarily very high then it can amount to entry barriers and discourage prospective players from entering that segment. But it is important to note here that reasonable conditions are necessary to prevent fly by night types of traders in the interest of consumers
Sec 60	**Market Domination:** The Appropriate Commission may issue such directions as it considers appropriate to a licensee or a generating company if such licensee or generating company enters into any agreement or abuses its dominant position or enters into a	This provision seems very pro-competitive as it talks about correcting any anti-competitive or abusive behavior in the market. However, one should not overlook the probable jurisdiction tiffs between the sectoral regulator and the competition

	combination which is likely to cause or causes an adverse effect on competition in electricity industry.	watchdog (CCI) in case any such case arises. Both have powers to take action.[43] It is also interesting to note that Sec 60 of the Competition Act gives overriding powers to the commission which enables the provisions under the Act as effective even if they are inconsistent with any other law. Also the Electricity Act, Section 174 states that: "Save as otherwise provided in section 173, the provisions of this Act shall have effect notwithstanding anything inconsistent therewith contained in any other law for the time being in force or in any instrument having effect by virtue of any law other than this Act." Therefore, jurisdictional overlaps need to be addressed to avoid future conflict between sectoral regulator and Competition Commission of India.
Sec 63	**Determination of tariff by bidding process:** Notwithstanding anything contained in section 62, the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government.	Realizing the drawbacks of MoU contracts of 1990s, lack of transparency in signing the MoU, failure to plan capacity addition in a comprehensive manner and absence of competition in selection process, the Electricity Act 2003 rightly emphasized on competitive bidding framework for encouraging private sector investment in generation. As per this Section, the regulatory commission has to adopt tariff discovered through bidding if due process as per guidelines has been followed. However, in reality this bidding process is not as competitive as it is designed and instilled in the Act. A study[44] by PRAYAS, a Pune based NGO, highlighted the issues which distort the competitive process of competitive bidding. The following factors,

[43] Rahul Singh, *The Teeter-Totter of Regulation and Competition: Balancing the Indian Competition Commission with Sectoral Regulators*, WASHINGTON UNIVERSITY GLOBAL STUDIES LAW REVIEW, Vol. 8:71.

[44] Gayatri Gadag, Ashwini Chitnis, Shantanu Dixit (Prayas Energy Group), Transition from MoU to Competitive Bidding: Good take-off but turbulence ahead: *Review of thermal capacity addition through competitive bidding in India,* March 2011, available at http://www.prayaspune.org/peg/publications/item/140.html.

		inter alia, affect the process: • Tempering with the bidding process, post bidding, to flout the requirements; • Non-adherence to contractual commitments by the developers leading to negating the benefits of competitive tariff discovered through bidding process and timely capacity addition; • Non-compliance with transparency and accountability related provisions casting doubts on the integrity of the bidding process.
Sec 66	Development of market: The Appropriate Commission shall endeavor to promote the development of a market (including trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard.	NEP has clear objective for encouraging competition in the electricity market. CERC has full authority for facilitating competition not merely in inter-state but even at the distribution end **by virtue of its ultimate control on all intervening facilities** in the state networks, for those who have the choice as per phase laid down by the state regulatory commission. This objective have not been pursued full heartedly by the CERC.

PART III

ISSUES AND RECOMMENDATIONS

5.1. Historically, electricity sector in India, like any other part of the world, featured vertically integrated monopolies—state-owned and subject to strict regulation. The performance of such regulated monopolies were characterized by low labor productivity, poor service quality, high system losses, inadequate investment in power supply facilities, unavailability of service to large portions of the population, and prices that were too low to cover costs and support new investment.

5.2. The preamble of the Electricity Act, 2003, promised some state of art reforms in the sector. The preamble stated

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

5.3. The working of the implementation of this Act has been discussed in earlier parts of this report which highlights the impediments that have hindered the achievement of above stated objectives of the preamble. The Act, in unambiguous words, talk about the promoting competition in various segments of the electricity value chain and enhancing consumer welfare by protecting their interest and ensuring supply of electricity to all areas. The Act manifested the intention to create an efficient and competitive market. Generation was made a license-free activity while other activities (transmission, distribution and trading) recognized the possibility of two or more players. Sec 66 of the Electricity Act, 2003, states:

"The Appropriate Commission shall endeavour to promote the development of a market (including trading) in power in such manner as may be specified and shall be guided by the National Electricity Policy referred to in section 3 in this regard."

The National Electricity Policy, 2005, substantiates the agenda of development of power market in clause 5.7(d):

'Development of power market would need to be undertaken by the Appropriate Commission in consultation with all concerned.'

The Policy further states in clause 5.7(e) states that:

'The Central Commission and the State Commissions are empowered to make regulations under section 178 and section 181 of the Act respectively. These regulations will ensure implementation of various provisions of the Act regarding encouragement to competition and also consumer protection. The Regulatory Commissions are advised to notify various regulations expeditiously.'

5.4. **Therefore, there is no doubt on the scope of powers entrusted on CERC, MoP and SERCs to ensure the introduction of competitive power market** in each state and the country as a whole. Developments, however, have been sluggish in the past few years. The placement of 'electricity' in the concurrent list has its own challenges and its manifestation on the structural changes and competition as envisaged in the act. Amidst the political populism, the pace of reforms had its own toll on the restructuring, as the Centre had to repeatedly give extension to few states. **The following paragraphs will highlight why the Act and the Policies (NEP and NTP) failed to achieve the objectives** they were designed to achieve. It may be worthwhile to point out the issues that have in one way or the other impeded competition in the electricity sector in spite of the decade or more of the reform act of 2003. The following paragraphs will highlight issues in each segment of the electricity sector and suggest recommendations to deal with those issues.

5.5. **Issue 1: Issues in the Generation Segment**

Sub Issue A: Monopoly in fuel supply

5.5.1. **Existing Situation:** While the policy in the Electricity Act, 2003, promises a paradigm shift in bringing competition, the policy is ineffective and only half-hearted. There is a need to institutionalize and strengthen the importance of competition to ensure efficiency and consumer welfare. The policy to liberalize generation segment, which is by far the most competitive segment in electricity supply chain, have been incomplete in so far as it has not addressed the issue of coal and gas which remains a government monopoly in production, price and distribution. Two issues impede competition in this procurement of coal—firstly, coal as main resource for thermal generation is entirely dependent on government and import of coal is not relied on much because of cost issues involved. Secondly, coal is a government monopoly (Coal India Limited), so in case of multiple competing generating units, the public generation companies may be preferred over private generation companies. This means that though competition in generation is presumed to be ensured by the Act, the serious issues concerning the scarcity and misallocation of primary fuel for electricity generation (Thermal) may not provide a level playing field to all players. State owned NTPC Ltd. is the dominant player in energy generation which is given preference over private generating units. Even among the generating companies, the generators with long term PPA are favored over short term and medium term generating units.

5.5.2. **Recommendation:** Generation in electricity sector cannot function competitively unless there is competition in coal or ensured stability in price and procurement policy. Competitive bidding guidelines should be fine-tuned in line with the fuel policy changes and also international price variations volatility so that developers risk is minimized. Unless issues related to coal are resolved, competition in generation will not lead to effective outcomes. There are policies and legal framework that disfavors private undertaking from engaging in mining, exploration and land acquisition etc. Existence of public sector monopoly, absence of transparency in allocation of coal mines, lack of independent regulator having tariff fixing powers in the sector and restrictions on commercial mining have posed barriers on the competition in coal sector. The repercussions of such public monopoly have adversely affected the electricity sector as amply proved by present crisis in fuel supply with CIL output has declined and high imported coal prices have virtually stranded thermal capacities and with serious impact on investor confidence and on

economy. Fuel Linkages once given should not be changed to the detriment of the actual consumers of electricity who may end up higher charges.

5.5.3. There have been some instances which indicate that CIL is probably abusing its dominant position. For instance, CIL, taking advantage of its dominant position in a supply-constrained environment, currently offers coal at first come first serve basis through the e-booking system at a premium of 30% on the declared price. Further there have been allegations against CIL by the core consumers in the power, cement and steel sectors for unilateral increase in prices, limited transparency/justification. There is a need to restructure the coal sector by introducing more number of players so that it can reduce the dominance of any player and can facilitate competition. The objective of licenses for captive mining should be ensured through to periodic checks. Other major steps include bringing the coal sector under the independent regulatory oversight. It is also required to streamline processes, procedures and remove various discriminatory provisions in the existing framework of fuel supply linkage policy of the Ministry of Coal that would give level playing conditions for the developers of coal based generation.[45]

Sub Issue B: No level playing field at the procurement side

5.5.4. **Existing Situation:** Dominance of public sector in the electricity supply chain affects neutrality of independent regulators and results in inequitable treatment accorded to the private players. Transmission, again, is a State monopoly and most States have government owned Discoms. In such scenario, non-discriminatory open access may not be implemented in reality. The States can exercise their influence to arm twist the STUs for allowing transmission and distribution network to State Discoms. This inevitably has the effect of rendering the competition in generation elusive because generation segment is stuck in between 3 segments which are state monopolies— Primary fuel (Coal), Transmission, Distribution. There is no level playing field at the procurement side. NTPC, the largest state owned power generating company, has been accorded differential preferential treatment leading to issues of competition neutrality.

5.5.5. Clause 5.1 of the National Tariff Policy, 2006, provides that *"[a]ll future requirement of power should be procured competitively by distribution licensees* ***except in cases of expansion of existing projects or where there is a State controlled/owned company*** *as an identified developer and where regulators will need to resort to tariff determination based on norms provided that expansion of generating capacity by private developers for this purpose would be restricted to one time addition of not more than 50% of the existing capacity. Even for the Public Sector projects, tariff of all new generation and transmission projects should be decided on the basis of competitive bidding after a period of five years or when the Regulatory Commission is satisfied that the situation is ripe to introduce such competition."*

5.5.6. Although, the period of 5 years is now over but the clause generally illustrate the mindset of the government in subjecting public and private generation companies to discriminatory standards.

5.5.7. **Recommendation:** To ensure effective competition amongst the players, there is a need to apply uniform rules and regulations in their business operation. Competition Neutrality is the key to ensure level playing field. The Government should not frame policies that exempt government undertakings from its own rules or procedures and adop "arm length approach" in applying rules. Procurement procedures for competitive bidding should be

[45] Amit Yadav, Competition concerns in Captive Mining in Coal Sector, Internship Report submitted at Competition Commission of India, available at http://www.cci.gov.in/images/media/ResearchReports/AmitIntReport180711.pdf

observed by the parties concerned as timelines by observing fair &transparent process and avoid conflict of interest in decision making .As far as possible, effort should be made to extend competitive bidding to hydro generation also.

Sub Issue C: Misuse of powers given to States under Sec 11 of the Electricity Act, 2003

5.5.8. **Existing Situation:** Sec 11 of the Electricity Act, 2003 provides that

> ***Directions to generating companies: ---*** *(1) Appropriate Government may specify that a generating company shall, in extraordinary circumstances operate and maintain any generating station in accordance with the directions of that Government.*
> *Explanation - For the purposes of this section, the expression "extraordinary circumstances" means circumstances arising out of threat to security of the State, public order or a natural calamity or such other circumstances arising in the public interest.*

5.5.9. Section 11 is very specific in laying down the criteria for issuing directions i.e. '*"extraordinary circumstances" means circumstances arising out of threat to security of the State, public order or a natural calamity or such other circumstances arising in the public interest'*. Therefore, the discretion accorded to State government is qualified by the explanation inserted in Sec.11. Such discretion cannot be used to impede the inter-state trading of electricity. This provision, however, has been extensively mis-used by State Governments for denying Open Access to the generating companies. The Section 11 order have been misused to coerce the STUs in not granting concurrence as required under Clause 8 of the CERC regulations of 2008. The CERC has clarified on various occasions that such denial is non-est and without any legal authority.

5.5.10. In an order dated 22.1.2009 in Petition No. 147/2008 (*Reliance Energy Trading Company Ltd v. Karnataka Power Transmission Corporation Ltd and others*) the Commission held as under:

> *"Section 11 empowers the Government to give direction to generating companies. Such directions would only bind the generating companies. In no manner can it be said that such directions that the Government could give to the generating companies would also bind others. In other words, the STU / Transmission Licensee who are statutorily mandated under Sections 39 and 40 to provide non-discriminating open access to the transmission system cannot be bound by the directions given by the Government to the generating companies under Section 11. The duties of generating companies are different from the duties of the STU/Transmission Licensees. Sections 39 and 40 do not subject the mandatory functions of the STU/Transmission Licensee to the directions given by the State Government to generating companies under Section 11.Sections 39 and 40 do not state so. It is well settled that new words cannot be imported into a statutory provision where such words do not exist in the first place. It is also well settled that statutory provisions are required to be given a meaning according to the plain reading. However, the provision of open access is to be implemented in accordance with the regulations specified by the Commission. In this regard, the Commission has already specified the Open Access Regulations. The statutory source and power to specify and to make these regulations, emanate from Section 178 of the Act. These regulations are part of the legislative functions of the Commission whereas the aforesaid Government's Order is part of the Government's administrative functions. The administrative functions under Section 11 cannot impinge on the legislation made by the Commission which only will decide a course of action in the grant of open access in terms and in accordance with the open access regulations. In that view of the*

matter and in light of the position under law stated in the foregoing paragraphs, the denial of open access by the Respondents making the aforesaid Government's Order as the basis for such denial, would not be legally sustainable, and is therefore held to be wholly void. In the matter of grant of open access, the Open Access Regulations define and circumscribe the Respondent's sphere of activity. The act of denial of open access making the Government's Order its basis, thus, would be beyond the scope of the powers of the Respondents as defined in the open access regulations and the Electricity Act, 2003."

……..

"The respondents are duty bound to consider the applications made for concurrence for open access strictly on the criterion of availability of surplus transmission capacity. In the present case, there is no averment that there is any congestion on the transmission corridor on account of which it is not feasible technically to transmit electricity on the first respondent's transmission system."

5.5.11. Therefore, it is clear that STUs and CTUs are duty bound to consider the application of the generating company or consumer and to allow Open Access if the transmission capacity is available. This raises another concern—how can it be ensured that the denial is because of non-availability of transmission capacity and not for some other ulterior reason which can have the competition distorting effects. This issue along with the pricing issue for 'charges or rate' for using Open Access are the biggest challenges that need to be tackled.

5.5.12. **Recommendation:** As stated above, the discretion accorded to State government under Sec. 11 should be used in a judicious manner and not to impede the inter-state trading of electricity. Either CERC should issue regulation or guidelines ensuring thoughtful use of Sec. 11 powers or the section itself should clarify the purposes for which Sec 11 is aimed. Sec. 79(1)(c) of the Electricity Act, 2003, obligates CERC to 'regulate the inter-state transmission of electricity' and Sec. 79(2)(ii) further obligates CERC to promote competition, efficiency and economy in activities of the electricity industry. **Such obligations require pro-active approach on part of the Central Commission to issue regulations and guidelines for ensuring achievement of the objectives of the Act.**

5.5.13. The Electricity Act, 2003, provides in the Section 36 that "charges or rates" for using intervening transmission facilities of Open Access should be fair, reasonable and in proportionate to the use of such facilities. **CERC could have used its powers under Section 2(36)(ii) & 36 proviso for exercising its full authority** to ensure end to end connectivity for OA interstate customers and rationalizing Open Access charges applicable across all intervening facilities. The CERC has powers under Section 61(1) read with section2(36), EA, 03 to lay down guidelines with respect to determination of pricing, which includes transmission surcharge etc. for inter-State and Open Access purpose at the intrastate level. CERC has not used these powers under the EA, 03 to lay down uniform "transmission surcharge" for inter-State use instead of leaving the surcharge to be prescribed by the State Commissions. This has resulted in different principles leading to arbitrary charges and hindrance in promoting Open Access.[46]

5.5.14. CERC should also exercise its powers under Section 61 to guide the State Commissions by prescribing principles and methodologies for determining tariffs applicable to generating

[46] Petition for removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009, clause 4.3 (iii).

companies and transmission lines.[47] In order to prevent pancaking of transmission charges, the charges for intermediate and intervening, transmission systems should be prescribed by the CERC. In the interest of uniform and reasonable charges / fees, the CERC should specify the fees and charges payable for the intervening transmission / inter-connection facilities in the State or Regional transmission networks within one year.[48] All these steps will ensure proper and smooth working of the procedure for grant of Open Access. The CERC website should make available various charges being levied and permissions required for obtaining Open Access in different States in its website. The data may be updated every fortnight in the website of the CERC. The website may also make available the status of Open Access applications received in the States, the decision taken and the pendency, directions issued on the applications for grant of Open Access to LDCs.[49] Central Regulations should further prescribe different pendencies/periods for open access. **The CERC should also prescribe the method for on-line information on transmission capacities available in the Central and State transmission corridors, under execution and those planned in different time-slices, so that both generators and consumers can avail open access in a non-discriminatory transparent manner. The Regulations should also prescribe margins for security/UA in the use of transmission corridors**.[50]

5.5.15. Regular monitoring of decisions by the CERC on the applications for Open Access by the LDCs and order given by the State Government under Sec 11 would have facilitated better assessment of the operational practices and unnecessary blockages in the implementation of Open Access provisions. Therefore, there is a need to put a check on the flagrant exercise of discretionary powers by State Government and LDCs for ulterior purposes.

5.6. Issue 2: Restructuring of Electricity Boards and Competition Neutrality

5.6.1. **Existing Situation:** Undoubtedly, unbundling has taken place in almost all Indian states. However, in some states the unbundling has not been achieved in reality. The purpose of unbundling is to ensure independence of the various segments of the electricity value chain so that they can function efficiently and competitively. However, the overlapping of board membership of the STUs and Discoms has led to favoritism and biased decision making. There have been instances in the past where States have exercised their influence to arm twist the STUs for allowing transmission and distribution network to State Discoms.

5.6.2. **Recommendation:** The Electricity Act provided for functional unbundling but in some states it's still a challenge. All utilities are supposed to be corporate entities but because government remains to be the single owner, the unbundled entities are immuned from Companies Act provisions regarding governance and regulation. There is a need to ensure effective unbundling and complete ownership separation of competitive and monopolistic segments in the electricity value chain. Although all the government owned state electricity boards are now unbundled and corporatized there is little or no dilution of government ownership nor full functional autonomy & accountability vested in these entities. A major cause for this could be lack of effective regulatory enforcement and very little effort of the

[47] Petition for removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009, clause 8.5.
[48] Petition for removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009, clause 8.6.
[49] Petition for removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009, clause 8.10.
[50] Petition for removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009, clause 8.11.

state governments for separation of its control over the utilities and not granting autonomy to the utilities. The segments which are best suited for regulation by public utilities are transmission and distribution networks (carriage parts). For competition in generation and retail supply, transmission and distribution should be ensured in a non-discriminatory manner promoted in an effective manner. **Institutional autonomy for an independent system operator has to be ensured and regulator should oversee the transparent and non-discriminatory allocation of network access**. The functionaries having membership on the board of these independent regulatory organizations (CTUs and STUs) should be barred from having any direct or indirect stake or interest in the generation or retail supply activity. This is of utmost importance in ensuring level playing field for private players who are willing to engage themselves in the sector and might be more efficient than the state owned utilities.

5.7. Issue 3. Ensuring financial health of the sector for sustaining competition

5.7.1. It may be worthwhile to discuss the observations and recommendations of the Shunglu Committee Report[51] which was presented to the Deputy Chairman, Planning Commission on 15th December, 2011. The Committee observed that the high losses of State Electricity Boards are primarily on account of poor managerial and operational practices of distribution companies compounded by irrational tariffs fixed by regulators. The tariff revisions have not happened due to the interference of the state governments and also due to the abdication of the statutory powers given to the regulatory commissions. The Committee has recommended that the State Electricity Regulatory Commissions should be made independent financially as well as in their functioning. Selection of Chairman and Members of Electricity Regulatory Commissions needs to be fine-tuned and further, their functioning should be scrutinized by an Expert Group in order to determine to what extent the Commissions have discharged their statutory duties like timely and regular revision of tariffs.

5.7.2. **Recommendation:** The tariff revision is the foremost obligation of the regulators. It is recognized that regulated utility must remain viable as otherwise it will not be able to serve the customers satisfactorily. For this to happen the state government must be made to accept arms length approach to tariff setting process and confine its role as defined in Section 65 of the Act. How this can be ensured will be challenging but should be ensured through consensus of state governements in the interest of the health of the sector.

5.8. Issue 4: Restructuring of LDCs as independent System Operator to protect competition

5.8.1. Though unbundling has taken place in all states but its efficacy is still a challenge. The Girish B. Pradhan report on functioning of Load Despatch Centres (LDCs) in India recognized the need for Ring Fencing LDCs from interference from the State utilities and making them autonomous organization to ensure effective unbundling. Until LDCs are structured as independent companies, ring fencing can be ensured through financial autonomy, administrative and HR autonomy, technical freedom to give decisions regarding issues pertaining Outage planning, Outage availing and system strengthening, etc. It is necessary that in considering the nature of the organizational arrangements for the LDCs, it should be such that functional autonomy is fully protected. In exercising its powers of supervision

[51] *Supra* note 13.

and control over the integrated networks, the CERC can play an important role in forcing the issue of giving autonomy to LDCs in all matters relating to Open Access.

5.8.2. **Recommendations:** It is desirable that CERC should recommend a model structure for the LDCs on the lines of the structure created for NLDC and RLDCs. Acting through the Forum of Regulations, it can persuade state Governments to create a similar board structure of LDCs on the lines of wholly owned subsidiary for the independent system operation for inter-State transmission system / network.

5.8.3. There is a requirement of functional unbundling of the Transmission and distribution network operators to ensure independence within the otherwise vertically integrated units. Transmission and distribution must be independent in terms of organisation and decision-making from other activities not related to the networks. The following minimum criteria apply[52]:

- Those responsible for the management of the Transmission and Distribution Network may not participate in other inter-related entities in the electricity value chain;
- Appropriate measures must be taken to ensure that the management of the transmission and distribution networks is capable of acting independently;
- The Transmission and Distribution Network operators shall have effective decision-making rights, with respect to assets necessary to operate, maintain or develop the network;
- The Transmission and Distribution Network shall establish a compliance programme with measures to ensure that a discriminatory conduct is excluded and to ensure its respect is adequately monitored;
- Additional measures to re-enforce functional unbundling may be taken.

5.9. Issue 5: Competition and Liberalization at the Retail Supply level

5.9.1. **Existing Situation:** Retail supply competition in electricity imply the presence of multiple retail distributors of electricity from whom the consumer can choose depending upon his/her requirements. Although the Act envisages multiple distribution licensees, the distribution business had been retained as a monopoly to avoid duplication of assets and wasteful expenditure. However, even with the recognition of multiple licensees at the distribution level, the other provisions of the Act make this option unavailable. One of the pre-requisite to obtain a distribution license under Sec 14 is the ownership of distribution network (Sec 14 read with proviso 6). Therefore, if more than one person applies for a distribution license in one particular area they need to own their separate distribution network. This requirement of owning up a distribution network by the potential applicants for distribution license is also indicated in the National Electricity Policy[53], 2005, and the Distribution of electricity License (Additional Requirements of Capital Adequacy, Creditworthiness and Code of Conduct) Rules, 2005[54]. The Act is clear in provisioning a **composite license** for owning the network and supplying the electricity. There is no bifurcation of content (electricity supply) and carriage (network) at this stage except for those consumers who approach generation companies on their own and then apply for open access. The dual role of network operator and of a supplier has been assigned to the

[52] Charles Russels LLP, Study on Unbundling of Electricity and Gas Transmission and Distribution System Operators, 2005, available at http://ec.europa.eu/energy/electricity/publications/doc/2006_03_08_final_common_report.pd

[53] *See* clause 5.4.7.

[54] *See* rule 3.

distribution licensees, hence, the two cannot be separated, if the black letter law is followed in its literal sense.[55]

5.9.2. **Recommendation:** The recommendation for this issue focus primarily on two aspects—firstly, the need for recognizing retail supply as a separate activity and provision for a separate licence for retail supply thereof and, secondly, designing an incentive induced structure to attract multiple retail suppliers. The provision of composite licensees for distribution (network and supply) has restricted competition and growth in the competition segment. The capital expenditure required to build a parallel distribution network is expensive and, therefore, not many players have an incentive to build that. Besides, it will be bad engineering from economy's point of view to require multiple networks. During consultations with the officials at Ministry of Power, CERC, Private Discoms, Competition Commission of India etc, it was clear that there is no objection in content and carriage separation, rather the stakeholders showed their trust in bifurcated system resolving the problem associated with uncompetitive retail supply market. Therefore, an amendment is required in the Act to bifurcate these two activities and allow multiple retail suppliers to procure wholesale electricity and sell electricity to retail consumers along with providing for consumer-related services including metering, billing, collection and complaint handling. Ideally, it should be ensured that the owner of the distribution network system is independent and have no stakes in the retail supply business. This will ensure non-discriminatory level playing field for retail suppliers in approaching the distribution system operator.

5.9.3. Another change which may further make the retail activity efficient and competitive would be to infuse incentives in the system. Presently, cost plus method are used as the basis of providing return to the distribution licensee—Return on Equity (RoE) and Return on Capital Employed (RoCE). Forum of Regulators carried out a study on 'Evolving an Appropriate Model for Distribution Margin'[56] in 2009 and made the following observation:

- 'The disadvantage of the Cost Plus approach is that since the licensee can recover the costs it incurs; it is under no pressure to reduce those costs, which can lead to inefficiency and higher tariffs for consumers. As a result, the retail tariffs are increasing every year, which defeats the objective of regulating the sector…….[T]he regulatory regime should result in reducing the electricity tariffs in the long-term, while at the same time; increase the focus on the consumer and quality of supply. **It appears unlikely that tariffs will come down as long as the Cost Plus mechanism is in vogue**. It is essential to quickly move towards a tariff setting system that rewards efficiency and results in lowering the retail tariffs. Hence, alternative approaches for giving returns to the Distribution Licensees need to be explored.'
- The chief recommendation of that report was the need to introduce performance based regulation (PBR) in the form of Multi Year Tariff regime which may include incentive based return mechanisms and defined outcomes over the controlled period to bring better competition, better consumer services and reduction in AT & C losses and gains being shared in the form of reduction in tariffs.

[55] Gopal subramanium, Solicitor General of India, Opinion In Re Central Electricity Regulatory Commission, Dated 14th May, 2011.

[56] ABPS Infrastructure Advisory Private Ltd., Final Report On 'Study on Evolving an Appropriate Model for Distribution', March 2009, available at http://www.forumofregulators.gov.in/data/reports/final_report_of_study_on_evolving_an_appropriate_model_for_distribution_margin_march_2010.pdf.

But it is felt that competition through multiple supply licenses and light handed regulation on the lines of telecom sector should be aimed at to achieve customer protection and quality of service.

5.9.4. One of the business groups suggested a model[57]—Input Based Distribution Franchise model that would be an SPV (Special Purpose Vehicle) having 51% Private Player and 49% State Discom [marrying traits of the 51:49 model from Orissa-Delhi and the Input Based Distribution Franchise]. The following would be the SPV-IBDF salience:

- "Input-Based" constituent in the New Model helps focus on driving efficiency [loss reduction],
- "Franchise" constituent ensures DISCOM/Government having recourse if private player underperforms; also franchise constituent obviates the need for "controversial valuation" & "sale" of assets. Additionally "franchise" model ensures adequate redressal of pre-existing employees.
- "51:49" constituent ensures DISCOM an active player in supervising and also sharing the upside. Also when the loss targets are not met in funded programs [like R-APDRP], the private player in the SPV-IBDF bears the onus of repayment instead of the pre-existing burden of State Governments like in the quadripartite agreements signed under R-APDRP.

5.9.5. Reform in the distribution sector has urgency in the context of creating competition eco system in the electricity sector. As rightly observed by Former Power Secretary Shri R. V. Shahi "if the government is serious on distribution reforms, states need to be persuaded to have privatization in large cities and franchisee in all such towns where their AT&C losses are more than 20 percent".

5.9.6. In a nutshell, the recommendations of this part can be summarized as follows:

- Bifurcate content from carriage as an ideal objective for consumer protection and welfare;
- Provide for licenses in content part, i.e. retail supply, with obligation to cater to the needs of small consumers;
- Ensure independent system operator for the distribution network business for non-discriminatory access to retail suppliers;
- Interim phase may see efficiency centric franchisee model in the lincencee area;
- Provide performance based or incentive based mechanism to retail suppliers for effective competition;
- To protect the interest of the small consumers by imposing market service obligation on suppliers as a part of the supply license;
- Bring cross subsidy to 20% plus/minus as per NTP, if it can't be completely phased out as it happened in telecom sector.

5.10. Issue 6: Third Party Access (Essential Facilities Doctrine) for transmission and distribution networks

5.10.1. **Existing situation:** At present the status of recognition of this doctrine is as follows in the Electricity Act, 2003, and NEP, 2005:

[57] Amit Mittal (CMD, A2Z Group), New Distribution Franchise Model that would revolutionize Indian Distribution Reforms, Bulletins and Articles, March 2010, available at http://www.indiacore.com/bulletin/10mar-New-Distribution-Franchise-Model.html

- Transmission: Sec 35, 38, 39 and 40 mentions the provision of non-discriminatory Open Access to any licensee or generating company on payment of a transmission charge or any consumer (Sec 42(2));
- Distribution: Sec 42(2) recognizes the duty on the part of the distribution licensee, subject to the availability, to allow non-discriminatory Open Access to any consumer who applies for such access by giving notice. The Open Access is not open for the supplier to supply electricity to consumer. It can be applied by a consumer only.

5.10.2. **Recommendation:** The recommendation on this issue is in continuation to the recommendation to the last in as much as they are related to each other. Recognizing retail supply as a separate activity under the electricity law requires access to the distribution network by those retail supply licensees. As stated above the third party access in distribution is not direct, it needs to be applied by the consumer who chooses to buy electricity from an alternative supplier. This makes the whole process very unattractive and burdensome to the consumer. Since this segment is really not reformed in India, it may be worthwhile to learn from international experience.

5.10.3. **United Kingdom:** UK electricity sector witnessed competition and restructuring further than any other country. Since 1999, all UK consumers have the option to choose their electricity supplier and since 2002 there has been no supply price regulation. Presently there are 5 types of different licenses issued for different activities in the value chain— Generation, Transmission, Inter-connector, Distribution and Retail Supply. The OFGEM (Office of Gas and Electricity Market) carries out a monitoring role of publishing periodical reports on development of domestic retail market and of conducting investigation on the performance of markets. The distribution lines business is considered as a licensed activity in UK and licenses are granted to suppliers to access the network. Under the Utilities Act, 2000, the distribution network operators are not allowed to supply electricity. They hold regional licenses for provision of distribution network services (third party access) and are regulated by OFGEM. They are under a statutory duty to connect any customer requiring electricity or authorized supplier within the defined area.[58] The third party access is available on the payment of charges which comprise of 'use of system charges'[59], 'connection charges'[60] and 'balancing charges'[61]. A cursory analysis of these charges indicates that the charges are extremely reasonable and are in proportion to the network usage by each payer. Therefore, no one has to pay for providing cross-subsidy.

It may be worth noting that recently OFGEM have come up with a radical reform for a simpler and more competitive energy market. The reform includes, inter alia, the following:

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[58] Sec 16 of the UK Electricity Act 1989: Duty to connect on request: (1)An electricity distributor is under a duty—
(a)to make a connection between a distribution system of his and any premises, when required to do so by—
(i)the owner or occupier of the premises; or
(ii)an authorised supplier acting with the consent of the owner or occupier of the premises, for the purpose of enabling electricity to be conveyed to or from the premises;
(b)to make a connection between a distribution system of his and any distribution system of another authorised distributor, when required to do so by that authorised distributor for the purpose of enabling electricity to be conveyed to or from that other system.

[59] Use of system charges includes charges for network reinforcement, maintenance and renewal, paid by generators and suppliers depending upon their use of network.

[60] Connection charges are paid by generators and customers who wish to connect to cover the cost of infrastructure required for new connections.

[61] Balancing charges are paid by generator and suppliers to meet the cost of matching the supply with the demand, and providing reserve generation.

- All consumers will be able to compare prices easily and those seeking more innovative tariffs will be free to choose them;
- Consumers wanting a no frills tariff will get a simple unit price and a fixed standing charge set by OFGEM;
- Consumers seeking more innovative tariffs will get protection against price increases for the duration of their deal;
- Standardized price information will allow consumers to compare easily standard and more innovative tariffs

These reforms are very useful to ensure consumer confidence in the propriety of market and to induce consumer to make efficient shifts and choose the most cost efficient supplier of electricity.

5.10.4. **New Zealand:** The distribution business in New Zealand has been segregated into two segments—the lines (network) business and the supply business. Historically, the electricity sector featured unified network and supply business at the distribution level but the Electricity Industry Reform Act was introduced to reform the electricity industry to better ensure that costs and prices in the electricity industry were subject to sustained downward pressure and the benefits of efficient electricity pricing flowed through to all classes of consumers. Common ownership of electricity distribution businesses and of either an electricity retailing or electricity generation businesses (other than minor cross-ownerships) is prohibited. The operation of the electricity retail market is overseen by the Commission in order to promote strong retail competition and fairness to consumers. Its role includes providing arrangements for the protection of consumers, as well as administering retail market rules such as metering arrangements, customer switching and reconciliation – the process by which the quantity of electricity purchased by each retailer is calculated. The key features are that customers can switch between retailers, and any party can be an electricity retailer provided they meet the minimum requirements.

5.10.5. **Australia:** The electricity industry in Australia has undergone a radical change in past few years. It has been functionally unbundled, the generation and retail segments of the industry have been exposed to competition, and a vast proportion of end users have been provided a choice of electricity suppliers. Australia accounts for an interesting set up in the retail supply level. The restructured electricity retail market provide for following[62]:

- First tier retailers: They own the distribution business with the monopoly geographical franchise in that state. These retailers are often termed as 'utility of the last resort' and they can sell electricity to customers throughout the state, whether or not the customers are located within the accompanying distribution franchise. The retail business is "ring-fenced" from the distribution business (i.e., established as a separate accounting entity within one holding company).
- Second tier retailers: These are stand-alone businesses not attached to a distribution business in the relevant state. Second-tier retailers can also sell electricity to customers throughout the state. A second tier retailer in one state may be a first-tier retailer in another state.

In the competitive retail market, electricity retailers compete to supply to the vast majority of large customers who choose not to purchase directly from the wholesale market, and to

[62] Draft discussion paper on operationalizing parallel distribution licensees in the state of Maharashtra.

smaller customers who opt out of purchasing electricity from their first-tier retailer. Retail competition, in Australia, is achieved through an access regime under which the distributor which owns the 'wires' (which provide a connection between the high voltage transmission network and the customer premises) is required to provide retailers with access to the distribution network.[63]

5.10.6. The Draft discussion paper on operationalizing parallel distribution licensees in the state of Maharashtra[64] have pointed out following conclusions from the international experience:

- After the wholesale competition is introduced, retail competition should also be allowed.
- Choice of supply for large customers is often introduced at the same stage as wholesale competition, and then extended to smaller consumers at a later stage. The UK, New Zealand, Australia and many other countries have moved to retail competition -- first allowing large customers' choice and then eventually extending competition to all electricity customers.
- In full retail competition, the regulator generally regulates only the natural monopoly (wires) part of distribution and competitive retail, or selling services are deregulated. However, as a measure to protect consumer interest, in countries such as Australia, there is a default service provider, whose tariff serves as a ceiling. The consumer receives regulated "delivery" services from the local utility and can shop for a supplier of competitive services. Customers who do not or cannot find a competitive supplier are offered "default service" (typically) by their local utility.

5.10.7. Therefore, it is submitted that instead of burdening consumers by the task of obtaining open-access and for paying different charges to different operators, the suppliers should be allowed uninterrupted third party access and they can then charge from the consumer on individual use basis. Following duties can be imposed on the operators of transmission and distribution networks relating to requests for third party access:

- Duty to augment transmission and distribution capacity to allow competing retail suppliers a non-interrupted network access;
- Duty to create a level playing field by observing competition neutrality and not to discriminate between system users;
- Duty to avoid any abuse of a dominant position being the network operator;
- Duty to fix reasonable charges for allowing access to network;

5.11. Issue 7: Real Consumer Choice (Why is Open Access Inaccessible)

5.11.1. **Existing Situation:** The cornerstone in the design of liberal market in the power sector is the provisions in the Electricity Act, 2003, relating to Open Access, which introduces a 'choice'.[65] The choice embraces generator, distribution companies, traders and consumers.[66] Without a choice and without the information of the availability of such choice, consumer decision is hardly welfare effective. The provision of choice is engrained not only in the Act but also in National Electricity Policy, 2005, which provide for creating competition & Choice to Consumers through Open Access. National Tariff Policy underlines this objective to promote competition and supply of electricity to consumers at reasonable rates. Competition is predicated on private sector entry in generation, trading in electricity and

[63] Auditor General Report, Electricity Reform In South Australia: Some Audit Observations, available at http://www.audit.sa.gov.au/97-98/a4/electreform.html.

[64] Draft discussion paper on operationalising parallel distribution licensees in the state of Maharashtra.

[65] IDFC Petition for Removal of Barriers to Open Access in Inter-State Transmission Network and Promote competition in Power Market, 2009, clause 2.1.

[66] *Id.*

competitive markets with electricity exchanges. And most importantly through transparency in policies and enabling & effective regulation that encourages conditions for Open Access to bring desired competition.

5.11.2. Open Access provision is provided in the Act to be introduced in phases. The first phase (started in 2003) envisaged for providing Open Access to bulk consumer (having electricity demand of 1 megawatt and above) in five years' time. However, even after 8 years, the commitment is not yet a reality. The basic requirements of an effective choice are 'information regarding the features of different choices available' and 'information regarding the price of different choices available'. Undoubtedly, the Electricity Act and the National Electricity Policy provides for a choice available to the consumer to choose an alternative source of supply for his electricity demand but the technical difficulties attached to 'Open Access' system makes that choice unviable. **Following factors, probably, have made the Open Access almost inaccessible:**

- **Absence independent of SLDCs/system operators;**
- **Existence of multiple charges (transmission charge, wheeling charge, cross subsidy surcharge etc.);**
- **Non-transparency regarding Available Transmission capacity (ATC);**
- **Sec 11 orders[67] given by States;**
- **Procedural difficulties i.e. consumers have to approach the network operator to apply for the Open Access.**

5.11.3. According to the report of the Task Force on 'Measures for Operationalizing Open Access in the Power Sector', in spite of most states having notified Open Access Regulations, surcharge and other charges, none of the States provided Open Access to consumers under Sec 42(2) as on 30th May, 2008[68]. Sec 42(2) read with Sec 49 makes it amply clear that such open access consumer can enter into contract with private supplier and state government no more has the right to fix tariff for those consumers. It is interesting to note that Open Access to Captive Power Plants (CPP) have been given in most states. One major difference between the Open Access to consumers and CPPs is the application of Cross Subsidy Surcharge (CSS) which is not there in case of CPP. The two reasons, therefore, for consumers not getting Open Access may be i) application of cross subsidy surcharge; and ii) the procedural formality of applying for open access and then paying different charges. The charges are not only high but quite unreasonable too. The National Tariff policy, 2006, lays down provisions for cross-subsidy directly to a needy consumer rather than cross-subsidizing the tariff across the board. It says that the subsidies should be targeted effectively and in a transparent manner and, by the year 2011-12, should be within +/- 20% of the average cost of supply. However, this has not been followed by the state governments and the regulators. Another direction in the Policy states that the CSS should be phased out by bringing down the rate every year. However, the rate of CSS is fixed each year on the basis of power purchase cost. In some states the CSS was introduced at a zero

[67] Section 11 (1) of the Electricity Act : Appropriate Government may specify that a generating company shall, in extraordinary circumstances operate and maintain any generating station in accordance with the directions of that Government.
Explanation - For the purposes of this section, the expression "extraordinary circumstances" means circumstances arising out of threat to security of the State, public order or a natural calamity or such other circumstances arising in the public interest.

[68] Report of the Task Force on 'Measures for Operationalizing Open Access in the Power Sector', 2008, available at

level and then brought upwards. There is no certainty in the fixation of CSS level by the States which make the cost of Open Access option very uncertain.

5.11.4. According to one of the reports[69] of Forum of Regulators one of the key objectives of setting up the SERCs is rationalization of tariffs. This is a critical activity, as the tariff structure is marked by high levels of cross subsidies and no. of consumer categories/ slabs. The Act and the NTP issued there under thrust upon reducing the subsidy with tariff progressively reflecting the cost of supply of electricity. The NTP mandates the SERC to notify roadmap within six months with a target that latest by the end of year 2010-11 tariffs are within ± 20 % of the average cost of supply. The SERCs have taken initiatives for reducing the cross subsidy and rationalizing the no. of consumer categories/ slabs not in line with the spirit, and letter of NTP. However, a clear roadmap with clear milestones to bring down the cross subsidy levels to within ± 20 % of the average cost of supply has not been notified by any SERC and in some cases where it has been set out but not actually achieved as yet.

5.11.5. The consumer ends up paying the wheeling cost, cross subsidy surcharge and AT & C losses of the utilities. If these charges are to be borne by the consumer, then there is no real incentive of switching to private supplier. The option of switching will be attractive only in cases where the difference in tariff charged by State Discoms and private supplier is more than the cost of Open Access (all the charges) which may never happen. The presence of high cross-subsidy charges offsets the prime motive of Open Access. Unless the cross-subsidies are phased out or brought within the limit as per National Tariff Policy, it will act as a disincentive for consumers opting for Open Access.

5.11.6. The Electricity Act, 2003, provides in the Section 36 that "charges or rates" for using intervening transmission facilities of Open Access should be fair, reasonable and in proportionate to the use of such facilities. CERC should use its powers under Section 36 proviso for rationalizing Open Access charges. The CERC has powers under Section 61(1) (a) of the Electricity Act, 2003, also to lay down guidelines with respect to determination of pricing, which includes transmission surcharge etc. for inter-State and Open Access purpose. CERC has not used these powers under the Act to lay down uniform "transmission surcharge" for inter-State use instead of leaving the surcharge to be prescribed by the State Commissions. This has resulted uncertainty about the charges and hindrance in promoting Open Access.[70] The petition for 'removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009', drafted by IDFC suggested that '[i]n the interest of uniform and reasonable charges/fees, the CERC should specify the fees and charges payable for the intervening transmission/inter-connection facilities in the State or Regional transmission networks within one year.[71]

5.11.7. It might be interesting to the Australian model in this regard. Earlier network charges, covering the cost of transporting electricity from the generator to the point of end-use, were bundled together with energy charges in calculating the electricity price to be charged to the end use customer. Following the establishment of the National Electricity Market

[69] CRISIL (submitted to Forum of Regulators), Final Report on Analysis of Tariff Orders, available at http://www.forumofregulators.gov.in/Data/study/STUDY_ON_ANALYSIS_OF_TARIFF_ORDERS&OTHER_ORDERS_OF_STATE_ELECTRICITY_REGULATORY_COMMISSIONS.pdf.

[70] Petition for removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009, clause 4.3 (iii).

[71] Petition for removal of barriers to Open Access in Inter-State Transmission Network and promote competition in Power Market, 2009, clause 8.6.

(NEM), both generators and end-use customers are required to pay separate network charges. In the wholesale market, market participants who purchase electricity directly from the spot market are responsible for also paying connection charges and 'use of system' charges directly to their local transmission and distribution network owners. **In the retail market, network charges incurred by end-use customers are paid for them by their electricity retailer who packages these network charges together with the energy charge**. **In some electricity bills the network charges are separately identified but many bills continue to show one price to the end-use customer**.[72] In Australia, the electricity prices are made up of three components:

- The wholesale component, which is the cost of buying energy. This is largely unregulated, with wholesale electricity prices set in the National Electricity Market (NEM) and wholesale gas prices set in confidential contracts between retail firms and wholesalers.
- The network component, which is the cost of distributing the service to the end-customer. This component is regulated by the Australian Energy Regulator (AER), with prices reset every five years.
- The retail component, which includes retail operation costs, such as meter reading, billing, marketing, etc.

Therefore, the tariffs paid by consumers are highly cost reflective and competitive because they are checked at each level.

5.11.8. **Recommendations: Therefore, to make Open Access a reality following actions need to be taken:**

- Rationalization of tariff structure;
- CSS reduction and the fixation should not be more than +/- 20% as per the NTP;
- Instead of the consumer, the retail supplier should approach the consumer and the network operator to make the whole process easy to be adopted;
- The tariffs structure should be transparent to reflect the various components which amount to the electricity charge;
- States should cooperate to allow inter-state trading of electricity;
- CERC regulations and guidelines should be robust to ensure the above.

5.12. Issue 8: Single National Market in India

5.12.1. Indian Constitution makes India primarily a federal structure with the Central government at the Centre and State Governments at the State level. The subjects that fall in the concurrent list (e.g. electricity) are regulated by both the Central and the State governments. The very purpose of putting some subjects in the concurrent list is the realization of having provincial government structures suitable to the local business environment. However, this in no way suggests that states have become different units and can formulate laws and policies in their own individual vacuum. Even while exercising their State powers, the central objectives of the economy and of the socio economic development should not be compromised for giving preference to the political will.

5.12.2. **Existing Situation:** The electricity sector is probably the best example to see how political will divided the electricity market in India into fragmented markets at the state level where States are devising all possible ways to impede inter-state transmission and distribution of electricity. This unending stride of protecting their respective inefficient transmission

[72] Energy Futures Australia, Current Electricity Industry Structure, available at http://www.efa.com.au/page.aspx?intpageid=6.

utilities (STUs) and distribution companies (Discoms) is not just competition distorting but also affecting the consumer welfare in an adverse manner. This is the major reason why the provision of choice ('Open Access') given in the Electricity Act, 2003, is far from reaching its practical operationalization. Though almost every state has issued Open Access guidelines but till 2008 none of the consumers availed the benefit of Open Access. Section 11 (Electricity Act, 2003) powers given to States have been used callously to impede the free flow of electricity from one state to another. The CERC has opposed many such orders and even held that such orders are non-est and not used for the specific limited purpose provided in that provision. The use of the powers given to States for ensuring smooth flow of electricity within India was contrastingly used to defeat that purpose resulting in fragmented closed markets in every Indian State. It is also interesting to note that Article 301 to 304 of the Indian Constitution recognizes the importance of free trade and commerce within the boundaries of India. Within India every state is part of the bigger whole. Article 304 and 305 further restrict the States from making a law or imposing any restriction which can affect the flow of goods and services within India. Therefore, demarcation of markets by the States by relying on the powers derived by virtue of certain subjects being put under the concurrent list is not well founded and is against the scheme designed under the Constitution of India.

5.12.3. **Recommendations:** India being the Union of States should act as one composite producer, supplier and consumer of electricity generated in India. The segregation of India into fragmented states has resulted into different states catering to their generation and supply at individual levels d thereby, resulting into wide disparities among the States. Task Force constituted to suggest Measures for operationalizing Open Access in the Power Sector noted that despite waivers on surcharge and additional surcharge in the state of Haryana, the consumers were still not able to draw power on open access basis from outside the State. The Government of Haryana drew attention to the practice of some surplus States in prevailing upon their generators not to supply power directly to consumers in other States and to the need for the Task Force to address the situation. Such manipulative behavior of State governments have led to creation of fragmented Indian electricity markets where deficit states are struggling to ensure access to electricity to its consumers while the surplus states are misusing its powers to prohibit its traders from selling electricity in the deficit states. CERC, being the central commission, have been entrusted with the power to regulate and ensure free flow of inter-state transmission. The Central Commission should act independently and should take a more proactive role to promote a single electricity market.

5.12.4. The Federal Energy Regulatory Commission in the United States is a good example of an independent regulatory agency with the United States Department of Energy. Neither the President nor the Congress reviews FERC decisions. All FERC decisions are reviewable by the federal courts. In recent years, the FERC has been promoting the voluntary formation of Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) to eliminate the potential for undue discrimination in access to the electric grid. However since the passage of new energy legislation, it has aggressively developed regulations to implement key provisions of the new law dealing with LNG terminals, electric reliability, Public Utility Holding Company Act, 1935, repeal and

implementation of the Public Utility Holding Company Act of 2005, new merger regulations and new anti-market manipulation regulations.[73]

5.12.5. Another good example could be Australia where the wholesale electricity market in Australia is named as NEM (National Electricity Market) and it comprises of sale of bulk electricity by generators to electricity retailers and end-use customers in southern and eastern Australia. Historically, the Australian electricity supply industry was dominated by state-owned utilities active in their own states. There was very little trade between the states. In the 1980s various initiatives were undertaken to correct the inefficiencies. The liberalization process in the Australian electricity market recommended sweeping changes to the industry, most important being the merging of all state-owned transmission bodies into one organization in order to establish a unified, national market; and requiring third party access to transmission and distribution networks. This created an opportunity to develop a wholesale market that extended beyond jurisdictional borders.

5.12.6. Therefore, it is important to introduce the concept of unified single national electricity market in India to allow free flow of electricity supply from one state to another. Without this the wholesale competition (trading) which is otherwise recognized in the Act as a separate activity[74] may not yield effective results.

5.12.7. **The present structure of the market and the pace at which the reforms have gone till now hold out little hope that in the future the electricity market will be characterized with active competition and customer welfare. Both will remain as distant goals unless structural reforms in the state utilities and regulatory mechanism at the central & state level become enabling and robust in creating environment for competition. The report has attempted to focus on some of these key issues and recommendations for achieving the objective of creating effective competition in the electricity industry**.

[73] Wikipedia, Federal Energy Regulatory Commission, available at, http://en.wikipedia.org/wiki/Federal_Energy_Regulatory_Commission.

[74] Sec 14 provides for a separate license for Trading activity.