

Decoding Proposed Structural Reform for Electricity in India

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ABSTRACT:- Structural reform is one of the tools adopted by policy makers around the world to provide conducive environment to aid an economy that lacks desired and sustained growth. Availability and abundance of low-cost and affordable energy is key ingredient for sustained economy growth. Electricity is an important and large share in the energy mix, therefore, abundance low-cost electricity could become an engine of rapid economic growth.

No wonder why electricity sector restructuring is one the aforementioned structural reforms pitched by most of the macro-economists as this reform is touted to bring transformational change and sustained economic growth in India. To aid reforms championed by macro-economists the Electricity (Amendment) Bill 2014 could bring most awaited wire-retail segregation. Such disintegration is likely to bring multiple retail options for end consumers and eventually drive down electricity price by competition from supply side. The present electricity distribution system is deep rooted among all, be it end consumer or stakeholders. The proposed electricity distribution and supply system will bring in more entities with different role and responsibility. Objective of this paper is to develop an understanding about changing paradigm of Indian electricity sector.

Keywords: - Deregulation, utility, electricity restructuring, distribution

I. INTRODUCTION

"Change brings resistance along. Learning and Knowledge mitigates the resistance, to let the Change happen"

Most people who deal with the energy sector in India must have heard the proposed concept of deregulated electricity market. This has been briefly discussed during 2014 general election campaign as well. However, many are not aware of how the deregulated electricity market would be look like and what benefits could be realized, not to mention many fence sitters would think it as inopportune reform measure.

Reforms specifically the structural reforms are revitalising catalyst to push the economic growth for economies which are either emerging or facing economic struggle to sustain growth rate. Structural reforms has significantly contributed towards the economies and the same has been vindicated by various economies across the globe. Electricity shares a close and positive correlation with Gross Domestic Product ("GDP") for any economy, it is no longer a hidden fact and has been statistically proven. This means that if the electricity sector in any economy grows positively, this pushes for economic growth of the country itself. Economists have consensus on the fact that if the electricity sector is freed from shackles of structural ills, it will not only benefit the sector itself but will also help escalating the growth in allied sectors of economy and thereby pushing the GDP.

One such strongly needed structural reform measure has been proposed by the Government of India in form of Electricity (Amendment) Bill 2014, bell ringed! Yes, I am talking about the same electricity restructuring and deregulation proposed as institutional transformation to be brought by Electricity (Amendment) Bill 2014. The reform proposed is another step towards pure competitive market creation by way of introducing choices for all the stakeholders, be it end consumer or generator or the service providers.

Since India has been living in confined and non-connected regulatory profile since long, many find it difficult to differentiate it from existing regulated structure. This article is ingenuous attempt to decipher the proposed electricity deregulation and future changes and how it will look like to create awareness among all affected- in this case is everyone.

II. REGULATED AND DEREGULATED MARKET STRUCTURE

The difference is fairly simple. In *regulated* electricity structure, there is only one main company, referred as Utility. This Utility owns entire infrastructure including wires, cables, transformers, poles etc. It has two responsibilities, first one to purchase electricity from generating companies and the second is to sell and distribute it to its consumers by utilising the infrastructure it owns and operate.

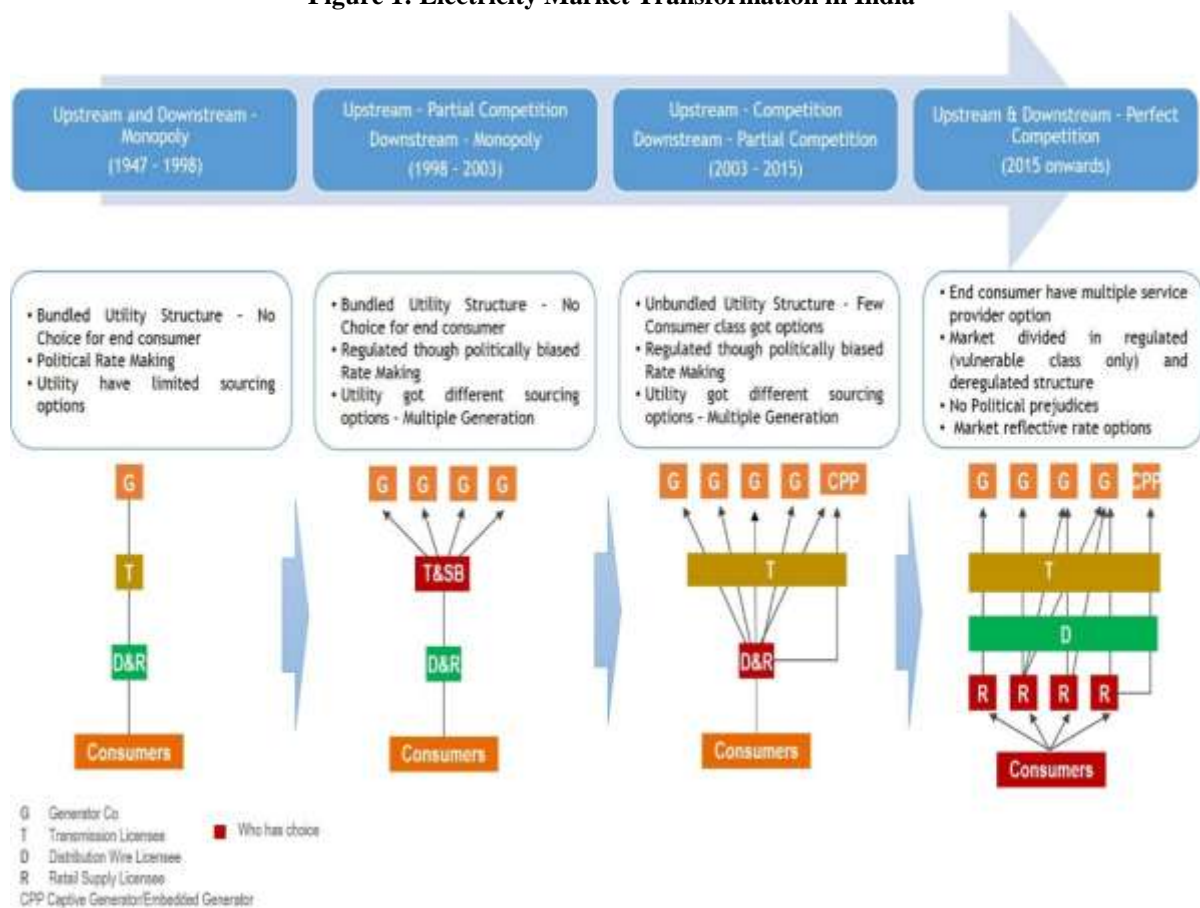
In *deregulated* market, few additional parties are involved to cater functions of the Utility. Utility still owns the infrastructure, but with the only responsibility to distribute electricity. Deregulated markets provide entry to electricity service providers, who will compete among themselves and sell electricity to consumers directly.

Two-pronged benefits of deregulated structure is that it boosts the competition among service providers, which in turn leads to lower prices for consumers and unleash the latent demand which will encourage more players to engage in competition and offer better rates and services to end consumers. It is analogous to telecom industry wherein the entry of lot many service providers utilising the same infrastructure has resulted in significant drop in prices, perhaps lowest across globe. Of course the scale and depth of benefit vary on various other factors.

1. Proposed Deregulated Electricity Structure for India

Before moving ahead with proposed deregulated electricity structure, it would be apposite to understand how the electricity market transformation so far has happened in the country. The figure below reflects the key periods of electricity reform introduced in India

Figure 1: Electricity Market Transformation in India



Reforms in India has been initiated in sync with opening of economy during advent of globalization. However, so far, the experiences of reform has been mixed. One class of thinkers attribute the reform so far happened as complete failure and other class appreciate it as step towards creating foundation for introduction of complete market principle and the pitfalls experienced are the learnings to initiate successful next generation of reforms.

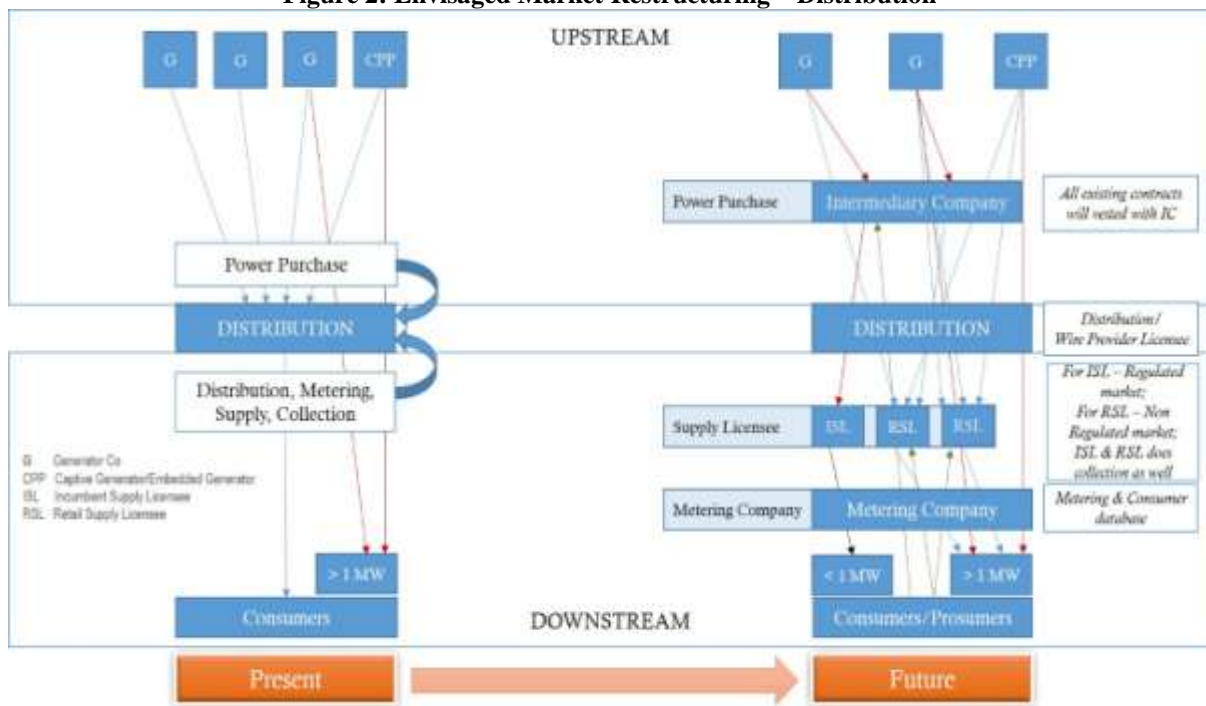
Electricity Act 2003 was one of the key statute which brought epochal shift in electricity sector of India and laid down foundation stone for market development in electricity sector. The statute comprehensively

covered every aspect of power sector and provided provisions to develop the same for future. So the question that might be triggered is then what is the need to kick off new reform measures.

Though the statute was able to bring in adequate statutory provisions to develop suitable framework for development of market structure in the sector, it was failed to provide choices to end consumer. The statute envisaged Open Access as one mean to create mechanism for free flow of electricity across country and in turn provide choices to all in the sector. However, failure to infuse open access in distribution, has restricted the choices envisaged for the end consumers and denied them from reaping the benefits of perfect competition. People may argue whether the end consumer are ready to face new era of reform, well at this point of time, the answer is no, however, human tendency to acclimate and adapt with changing paradigm, provides confidence to introduce such transformation to get in to next stage of reform.

Proposed amendments of electricity statute focuses to bring in retail-wire separation to provide the end consumers choice of supply by way of perfect competition. This article is concentrated only on the supply aspect which affects and will affect the end consumer. Before understanding the essence of proposed changes, it would be beneficial to first understand how distribution system (with bundled retail and wire) works today and then understand what transformation will be kicked in.

Figure 2: Envisaged Market Restructuring – Distribution



1.1. Present Distribution System

To understand the present distribution system, let us bifurcate the distribution system based on their key responsibilities as Upstream (i.e. Undertaking Power Purchase) and Downstream (i.e., Single acting agency to undertake wire and supply to serve end consumer) activity.

At present the mass end consumer knows only one agency for its source of supply, except for certain 1 MW and above, open access consumer – those who avail electricity directly from various generation sources. However, in either case, the predominant network/wire provider is one agency i.e. Distribution Licensee of their respective area. By saying distribution licensee we mean the regulated entities which are licensed to operate in specific area. At present this agency works on cost-plus tariff regime and are entitled to recover their prudently incurred cost in form of tariff, as determined by respective state electricity regulatory commission. At present it is the distribution licensees who sets up the infrastructure (wires, cables, transformers, meters etc.), owns, operate and maintain it, in order to provide supply to end consumers and in turn to serve the end consumers also engages in electricity purchase from various generating sources (i.e. including captive power producers who sell their surplus capacity).

In the prevailing system end consumers are the ultimate consumption point and pays for whatever electricity they consume and the cost of infrastructure, to their respective distribution licensee. So far as of now, these distribution licensees are operating in a monopoly profile except for fewer instances where parallel licensing concept is prevalent. Distribution companies in this structure are obligated with Universal

Service Obligation (USO) meaning thereby they cannot deny any consumer to provide electricity supply except on technical impossibility.

Distribution is an important entity in the value chain of power sector and all other entities like generation, transmission dependent on distribution for their revenue realization. On one hand, where the generation is de-licensed and non-regulated, the distribution is a licensed activity. This leads to a situation where distribution purchases from non-regulated market but sells in regulated market. Any non-synchronicity between cost incurred and revenue, lead to financial instability of distribution licensees. Such non-synchronicity happens when revenue (i.e. tariff) is prejudiced excessively and inherent deficiency are enforced to serve political interests which either suppresses the revenue or disallows the expenditures.

Non-synchronicity in cost incurred and revenue realised has been happening since very long time in India. This has resulted in financial losses of distribution utilities tuned astronomically up to INR 3 Lakh Crore. Infrastructure is identified as sector with high gestation period and one that requires significant capital infusion. So is the electricity sector and thus they are dependent upon the financial biggies and institutions who influence the economic profile altogether of the country. With failure of such critical sector, the cascading impact on financial sector cannot be denied. This calls for policy revisit to correct the structural deficiencies and the immediate answer envisaged by policy makers is wire-retail separation.

1.2. Proposed Distribution System

In the proposed amendment of wire-retail separation, the idea is to un-bundle the existing distribution licensee in various entities who will handle the upstream and downstream activities as aforementioned. Following are the entities which will be introduced as part of the restructuring process:

- Intermediary Company
- Distribution/Wire Licensee
- Supply Licensees (i.e. Incumbent Supply Licensee, Retail Supply Licensee etc.)
- Metering Company

On Upstream side, all the existing legacy power purchase contracts of existing distribution licensees will be absorbed by the Intermediary Company (hereinafter referred as “IC”). IC will be a government owned company and will act as source of supply for either or both supply licensees and consumers. To serve the requirement IC may use its existing generation portfolio or may procure on their behalf, if asked for.

On Downstream side, let us start with Distribution or Wire licensee (hereinafter referred as “WL”), who will act as network provider for electricity to flow till end consumer. Role of WL in future will be analogous to what Transmission Licensees are doing today. WL will be a regulated entity and likely to be operated on either cost-plus or performance based tariff fixation regime. WL will own, operate and maintain the distribution/wire assets till the metering point of the end consumers and will be responsible for all technical and commercial losses till that point. For WL, the revenue realization will happen from either open access consumers or from retail supply licensees and to a large extent will be significantly insulated from payment default risk as now their transaction point for revenue recovery will be significantly reduced.

Downward to WL, there will be Supply Licensees who will be the agency acting as consumer interface to get electricity supply. These supply licensees will further be divided in Incumbent Supply Licensee (hereinafter referred as “ISL”) and Retail Supply Licensees (hereinafter referred as “RSL”). These supply licensees will operated in classified regulated and non-regulated market. For instance ISL will be operating in regulated tariff regime or let us say non-contestable market and RSL in non-regulated tariff regime or contestable market. The classification of number and profile of consumers among these market segments will be determined by the respective regulatory commissions. For both ISL and RSL, the source of power generation will be IC as well as other generation options already existing in system or may utilise the real-time surplus among themselves. These supply licensees will coordinate with WL and metering company to ensure the network availability to serve the end consumers and in turn will pay them their respective network costs. ISL will serve specific set of consumers who are vulnerable towards price sensitivity initially exposed by competition, if any. RSL will serve specified set of consumers within the ceiling tariff fixed by regulatory commission, meaning thereby RSL depending upon their respective cost structure may offer discounted tariff to consumers as part of market capitalization strategy. Within specified category both the ISL and RSL will be obligated with USO.

Further downward to RSL, there will be an independent metering company whose jurisdiction will start with consumer after jurisdiction of WL and primarily may confined to consumer premises. Considering the ongoing innovation and policy talks on introduction of smart metering concept, this company will be able to understand and evaluate consumer profile and electricity behaviour, this consumer database will be valuable for the RSLs, before taking any decision to cater specified area of consumers. This company will also be a great enabler towards implementation of demand response mechanism which may be offered by the RSL or ISL. As

the metering company will be carrying out the consumer database through its meters, this company in themselves will act as critical for RSL to understand the market profile for their business forecast.

Another change that will emerge from the cumulative effort of proposed restructuring process and emerging scenarios of renewable, demand response and net metering concept in the country, is that the consumers will slowly and steadily take up a role of Prosumers (i.e. Producer and Consumer). Meaning thereby the consumer will no longer be the consumption point only but also the energy supplier.

III. CONCLUSIONS

International experiences on wire-retail separation presents mixed inputs and predominantly dependent upon various factors like acceptability by the government, stakeholders and end consumers. However, the real challenge with proposed amendments would devising the institutional framework, defining responsibilities and envisaging probable implementation issues, upfront before rolling out the mechanism. In addition, since electricity is the concurrent subject, the challenge would be to convince states to take part in the process to make this event successful for the economy as whole.

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The aforementioned article is outcome of independent professional interpretation and viewpoint of the author and shall not be construed in relation to the as viewpoint or interpretation of organisational engagement of the author on the subject.