



Political Economy of Regulation in Electricity Sector in India

The Indian electricity sector has seen major changes with regard to implementation of regulation, competition and the perceived role of the private sector. Electricity sector in India is in the Concurrent List of the Constitution; hence both federal and provincial governments are responsible for its development. Separate regulatory bodies have been set up at the federal as well as at the provincial levels. Yet, effective competition still remains a distant goal.

This policy brief highlights constraints faced in introducing competition and implementing regulatory regime in electricity sector in India including: analysing different possibilities of introducing retail competition in Indian electricity and problems and prospects that might be encountered; and assessing the nature of regulatory capabilities at the Federal and State regulatory commissions. Besides, it suggests how the beneficial effects of competition might be simulated in the presence of barriers to actual competition.



Introduction

Prior to 1991, the electricity sector was a government monopoly, which performed all the functions of generation, transmission, distribution and trading through a vertically integrated setup. With the economic reforms of 1991 and its strong accent on privatisation and deregulation this sector too started undergoing a significant change. The first significant change related to unbundling, i.e. allocation of various functions like generation, transmission, distribution and trading to separate entities. The second involved privatisation in distribution.

With the co-existence of divergent private and government interests in the electricity sector the creation of a neutral regulator, which was at arm's length from the government, electricity companies and consumers became essential. As a result, Central and State Electricity Regulatory Commissions were set up.

The results, as far as structural and regulatory reforms are concerned, are mixed. While regulatory agencies have been set up in most states, unbundling has not been achieved in many states such as Kerala, West Bengal, Punjab, Tamil Nadu and Bihar. Invitations to the private firms to join the electricity sector have not drawn the required response because of the absence of reforms in related sectors. A lack of private entry into this sector implies that competition has not been achieved in most segments of the sector. The sector is not even close to achieving competition in the distribution segment. Incomplete reform in fuel markets has also blocked competition in generation and a cap in prices on wholesale trading has killed competition in the trading segment.

The incompleteness of structural and regulatory reforms implies that the unsatisfactory performance of the Indian electricity sector continues. The functioning of the sector is still characterised by major problems - high technical and commercial losses such as theft of power due to unprofessional management; unsustainable measures to subsidise one sector segment at the expense of another (cross subsidisation); and inadequacy in distribution networks leading to poor quality of supply. There are huge inter-regional disparities in access to electricity. There is also a rural-urban divide with 56.6 percent of rural households and 12 percent of urban households not having access to electricity supply.

These shortcomings are a major roadblock to the attainment of policy objectives such as ensuring financial viability, rationalisation of tariffs and facilitation of private investment. Politicisation of the sector is a major problem in this regard. Huge subsidies in electricity supply still exist. There is a political cost in cutting back subsidies to bring them in line with costs of production as the benefits of efficiency are distributed over vast numbers whereas the costs of a cut in subsidies are strongly concentrated in certain interest groups. As a result, adverse reactions might be much stronger than positive reactions. This explains the reluctance of politicians, seeking re-election, to do away with these subsidies.

However, many of the shortcomings mentioned above can be overcome through the provision of transparent, consistent and predictable regulatory regimes. The next section examines in detail the improvements in this regard and the unfinished tasks.



Performance Appraisal of New Regulatory Arrangement

A revamping of the regulatory structure pertaining to the electricity sector has been attempted on the advice proffered by international agencies such as the World Bank. Two laws have been passed – the Electricity Regulatory Commission Act in 1998 and the Indian Electricity Act, 2003 which replaced the former – with the intention of building up the confidence of the private sector in the government. These acts have allowed for private entry into the electricity sector, provided the private sector with open access to transmission networks to stimulate competition and have led to the creation of neutral regulators in the form of the Central Electricity Regulatory Commission (CERC) and State Electricity Regulatory Commissions (SERCs).

These SERCs set tariffs, which reflect the cost of supply and devise regulations pertaining to licensing, trading, open access and redressal of consumer grievances etc. The objective behind such regulation is to improve efficiency, protect consumers and maintain a competitive environment. Through their regulation and adjudication, SERCs are also expected to take cognizance of and reconcile the interests of various consumer segments and suppliers. Orders of both CERC and SERCs are appealable to the Appellate Tribunal for Electricity for review and to the Supreme Court.

Theoretically, the constitution of such neutral and transparent regulatory bodies should be of great help in achieving the objectives mentioned above and making the private sector a partner in further electrification of this country. However, many problems in implementation exist. The chairman of the commission and the other members are usually retired bureaucrats. Professionals, notably engineers, economists, accountants, lawyers, etc who support the commission are also drawn from the government. Thus, the postulated arm's length relationship of the SERCs with the government might not exist in practice. The practice of using staff on deputation from the government implies that there is no time or room to build up long-term core capabilities.

The working of the commissions is hampered by persisting vacancies. Vacant positions exist in most of the commissions. Of the state commissions, those in Andhra Pradesh, Gujarat, Haryana and Orissa are manned with more numerous and better qualified staff. Temporary consultants are often used to meet the dearth of regular staff, which interferes with continuity in working. SERCs have varied information needs. The SERCs need information about revenue, capital base, operating costs, depreciation and energy losses of suppliers for tariff determination. Ideally, apart from the regulator, this data should also be made available to various stakeholders such as

consumer groups and academia. An evaluation of SERCs' performance regarding dissemination of information reveals that 19 out of 20 have set up their websites. However, there are vast differences in the presentation of information, which makes benchmarking and comparison difficult. While notes on rules and procedures are adequately available no report on trends in prices is present. The picture regarding trends has to be pieced together from individual tariff orders. SERCs are also behind schedule in preparing their annual reports.

As far as tariff regulation is concerned, volumes indicate that SERCs have been extremely active. In the brief period of their existence (1996-2006) SERCs have issued 765 tariff orders and 1586 other orders and regulations but have adopted the cost plus method for the purpose of tariff regulation. Under this system, tariff determination has become an extremely onerous exercise, as operating and capital costs have to be determined so as to allow a certain rate of return over and above the costs. The tariff determination process involves hearings, negotiations and the seeking of expert and stakeholder comments. Thus, it needs to be replaced by a system where bids for tariff are sought from private companies and awarded to the lowest bidder. This would consume less time and encourage efficiency, the benefits of which can be passed on to consumers.

Box 1: Hijacking of the Selection Process for Regulators

Electricity Act 2003 requires the selection of regulators on merit basis in a transparent manner. However, politically motivated interests have affected the selection process adversely. For example, the post of the Chairman of CERC is lying vacant for almost a year (since March 2007). This is the second time it has happened. In the current scenario, while the selection committee submitted its report in September 2007, the government has not been able to fill this post. The government was reported to be unhappy with the names suggested by the committee.

Jockeying by some has only skewed the process. Reportedly, one candidate is a retired IAS officer, thus evoking sympathetic support from the IAS lobby, which has cleverly captured all such plum post-retirement posts in the country.

The role of the government was also questionable while converting the selection committee into the search committee. Many feel that it was a way to manipulate the system since the Electricity Act 2003 does not allow the government to do so. Ultimately, it is the economy, which is suffering from these undesirable interferences in the system.

Given the ongoing restructuring process in the electricity sector, many important decisions are pending. Further, chairman of CERC is also ex-officio head of Forum of Regulators (FOR) as well as Forum of Indian Regulators (FOIR). The delay in appointment has also affected functioning of these two important bodies.

Though SERCs also look at subjects such as billing and metering, except Karnataka and Andhra Pradesh, they have been lacking in consumer advocacy and education.

As mentioned above, SERCs have not been able to generate sufficient private competition in generation. This is because private companies are sceptical about transacting with the state, which still has a monopoly in distribution. Private companies fear that state owned companies might default on their financial obligations as the latter are in a poor financial condition. Effective competition in distribution, so that a consumer can shift from one distributor to other, has not been achieved because of the absence of uniformity in metering technology and meter reading capabilities. Only two states, Orissa and Delhi, have privatised electricity distribution, as private players have tended to stay clear of the loss making distribution business.

The literature on regulatory governance indicates that the characteristics of good regulatory governance are clarity in roles and objectives, a legal basis for regulation, functional autonomy of regulatory bodies, incorporation of stakeholder views in regulation, full accountability to legislature and judiciary and stability of regulation.

Empirical studies of SERCs show that they need to improve upon the level of stakeholder participation in the decision-making process. In terms of accountability the SERCs do fairly well as they are accountable to the Appellate Tribunal for Electricity for judicial matters. They also have to report to the government and the legislature annually on their performance but do not meet the criterion of stability as the Electricity Act 2003 empowers the Central government to influence the nature of their functions, which could adversely

impact on continuity and stability. Moreover, SERCs have sometimes been a subject of regulatory capture by the state governments which interfere in their decision making process.

Several measures by SERCs can bring about an improvement in the regulatory climate. The formats of data maintained on licensees by SERCs need to be standardised for comparison and benchmarking across the states. Reliance on bureaucrats for staffing must be reduced to maintain autonomy and prevent bias. Appointments of professional staff should be made on long term basis to ensure a stable in-house capacity and to facilitate learning by doing. There is also a need to engage with civil society think tanks and academia more intensively through the FOR and FOIR (see Box 1) to get a better understanding of the economics of electricity supply at the state level. There should be more cooperation on a regional and national basis among regulators. Small states can also combine to form a regional regulatory authority that generates economies in the use of human capital and infrastructure. This will also prevent capture of the regulatory authority by any state government.

Simulation of Competitive Market Type Conditions

As mentioned above one of the objectives behind the establishment of a neutral regulator is to infuse competition into India's electricity markets. However, there exist vast difficulties in creating a competitive electricity market in India. Subsidy to politically favoured consumers and cross-subsidisation are distinct features of the Indian electricity market and obstruct real competition. At present, there are only a few private players in the

Box 2: Simulated Competition in Rural US

While nearly 90 percent of urban dwellers in the US had access to electricity by the 1930s, only 10 percent of rural dwellers had the same. The non-availability of electricity in rural areas led to economic stagnation. Private utility companies, which supplied electric power to most of the consumers, argued that it was too expensive to string electric lines to isolated rural farmsteads. They said that most farmers were too poor to be able to afford electricity. Realising that living standards of rural people would continue to lag behind urban people without electricity, President Franklin D. Roosevelt passed an order establishing the Rural Electrification Administration (REA) in 1935, which helped rural Americans to form user owned electricity cooperatives and avail loans. These electricity cooperatives, in partnership with REA brought electricity to the most remote corners of the country.

At present, 99 percent of the nation's farms have electricity. There are 930 electricity cooperatives in the US, serving 17 million consumers including businesses, homes, churches, farms, irrigation systems, and other establishments. They produce electricity at the local level, contributing nearly five percent of the total electricity produced in the US each year. Over time, these cooperatives have made strong gains and since 1996 they have been outperforming investor-owned utilities in nearly every category.

These electricity cooperatives are unique as they are owned and controlled by the consumers they serve. They adhere to seven guiding principles, viz. voluntary and open membership; democratic member control, members' economic participation; autonomy and independence; education; training; information; cooperation among cooperatives, and concern for communities. They have ensured a set of rights to the members: the right to have access to reliable, affordable and safe electric power; the right to join to establish and operate a consumer owned not-for-profit electric utility; the right of consumer-owned not-for-profit systems to be treated fairly and recognised as a unique form of business; and the right to elect representatives to manage their consumer-owned form of business to best meet their needs.



electricity sector. Competition in generation cannot be complete without proper private access to fuel markets and sound financial health of public distributors. These conditions are currently absent. Effective competition in distribution, so that a consumer can shift from one distributor to other, has not been achieved because of the absence of uniformity in metering technology and meter reading capabilities. Assigning regulators the task of maintaining competition might be often self-defeating. Regulatory agencies are headed by retired bureaucrats most of whom have matured in an environment where appreciation of competition is a Latin word to them.

However, it might be possible to simulate competitive outcomes. The characteristics of competitive markets are low prices and a certain amount of choice and variety for consumers. The social objectives that one would like to meet through the electricity market are access by all, a just distribution of costs and benefits among the consumers and protection of small and marginalised consumers (boxes 2 and 3 illustrate some historical attempts to attain these objectives). Thus, these are the characteristics that have to be simulated.

Capital subsidy schemes, which provide for the establishment of village level distribution networks and electrification infrastructure can result in access of electricity to all. The accent should be on participation by users in production and the simulation of competition among them. Examples of such schemes exist. Rural electricity cooperatives in the US (see Box 2) helped to provide rural dwellers with access to electricity in the early 20th century.

In India, too, rural electrification cooperatives were formed in many states but met with limited success. More recently, village level user groups in Orissa (see Box 3) have been successful in setting up local distribution networks. Thus, one can conceive of a scheme in which franchisees are selected from among the locals and licensed to maintain and manage local rural distribution networks, which are owned by the state. Performance will determine whether their contracts will be renewed or not and entry into this market will be on the basis of competitive tendering. Through these franchisees people living in the villages will have some say in the design

Box 3: Competition Simulation through Community Participation in Orissa

In 1999, as a part of the restructuring process in the electricity industry, a private distribution company (WESCO) commissioned a pilot project on community participation in the distribution business, covering 100 villages in western Orissa. The project was guided by Xavier Institute of Management (Bhubaneswar). Impressed by the success of the pilot project in April 2001, Department for International Development (DFID) sponsored a project titled 'Orissa Rural Community Electricity Supplies', which developed a model of 'Micro-Privatisation' with a focus on community participation and micro-entrepreneurship at the local level.

Under this model, a village is considered as a functional unit. An independent and voluntary users' group called 'Village Vidyut Sangh' (VVS) is created to help in billing, revenue collection, efficient use of electricity, and checking pilferages. A local franchisee is put between the users and distribution companies to maintain the local distribution network. These franchisees form the basis of competition. Although the model received good response from the beneficiaries, it lost its momentum within few years of its implementation. However, the model still exists in some parts of Orissa and is producing a mixed result.

and nature of networks, management principles and some influence over the quality of service. By making distribution a remunerative business, this scheme should encourage service providers to extend the service to un-electrified areas. This scheme could also be used to facilitate purchase/production of electricity from generators in areas where the supply from the grid is absent or inadequate. Finally, this system could be made consistent with the attainment of social objectives through differential tariffs.

Conclusion

The introduction of elements of privatisation and competition have been attempted through the development of neutral regulators in the Indian electricity sector but much more clearly needs to be done. The attainment of the objective of having an independent, neutral and transparent regulator is at best incomplete. The regulators still remain dependent on the government for staffing needs and are plagued by various other problems such as staff shortages, unstable mandate and lack of receptivity to the wide gamut of stakeholders. This incompleteness in attainment of regulatory objectives coupled with structural barriers to competition implies that competitive outcomes have to be simulated through the management of distribution networks at the delivery stage by local level franchisees.

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