CHAPTER-V

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5.1. Summary

Privatization in the last two decades has been a global phenomenon, embracing the developed economies, the transition economies of East Europe and of late, the less developed world alike. It is world wide accepted that the role of state in the economic affairs has to be reduced and it should be opened to the private sector. Government should shrink its investment in public sector except in some strategic sectors and private sector should be allowed to take the lead. Developed as well as developing countries across party ideology including the socialist countries are under the pursuit of privatisation. Also, South Asian countries including India and Pakistan have been experiencing liberalisation process in the early 1990s.

There is a growing literature available on India and Pakistan- both in favour of privatization of power sector and against it. Some people oppose the power reform policy while others support it. Since it is a comparatively a new field of interest, there was hardly any academic in-depth study. Therefore, the present study has analysed comparatively the power sector reform in India and Pakistan.

Electricity had been considered as a public utility and thereby owned publicly in almost all countries, be it developed or developing. It was more so in developing countries. They viewed power as public service which needs to be dominated by central planning. Universal electrification is frequently a national policy objective, as is the provision of electricity services to low-income customers at subsidized rates. Rural electrification has also generally been the responsibility of the Government. This resulted
in substantial losses by these utilities over the years. This forced most of the countries to open this sector for private investment.

As such, the electric power industry has undergone a substantial degree of privatization in a number of countries all over the world over the past few years and some are in the process of reform. The general theme of the reform programme has mainly been separation of the vertically integrated system on functional basis to bring efficiency in the industry and market structure on commercial basis. Since restructuring alters the existing organization of the electric industry, vertically integrated utilities (providing generation, transmission, distribution, and retailing services) are unbundled into legally and functionally distinct companies. The reasons for electric utility privatization among others include raising revenue, acquiring investment capital, market-determined price for electricity, reducing power shortages, improving billing and its collection by the private entities, technology transfer and improving managerial performance.

India and Pakistan have opened up this sector for private investment. Before, independence, the Indian power sector was in the hands of private entrepreneurs. After independence State Electricity Boards (SEBs), which was a creation of Electricity Supply Act, 1948 took over most of the private licensees when the licences expired and after 1956, no new licenses were given. SEBs were responsible for generation, transmission and distribution of the electricity in the state. In 1975, the Central Government set up National Thermal Power Corporation (NTPC) in central sector to boost the power sector. Subsequently in 1989, the Power Grid Corporation was established for inert state transmission responsibility.
In Pakistan, Water and Power Development Authority (WAPDA), which was established in 1958 was responsible for generation, transmission and distribution of power throughout the country except Karachi, its suburbs and adjacent parts of Baluchistan, which was the responsibility of Karachi Electricity Supply Corporation (KESC). The WAPDA contributes 80 per cent of the production and distribution of the public power supply in Pakistan. The KESC and the Karachi Nuclear Power Plant (KANUPP), commissioned in 1971, are producing the remaining 20 per cent. KESC is a semi-autonomous organization with 90 per cent of its share held by the government financial institutions. WAPDA is a public sector entity wholly owned by the federal government. Both organizations are under the administrative jurisdiction of the Ministry of Water and Power.

As a historical perspective, the growth in power sector in both the countries under the public sector control increased considerably. In India capacity went up from 1,362 MW in 1947 to about 66,055 MW in 1991 representing compound growth rate of 9.08 per cent. In Pakistan, the growth of installed capacity in 1947, which was only 69 megawatts (MW) increased to 8,776 MW in 1990-91 representing compound growth rate of 11.64 per cent. The comparison of installed electricity capacity of India and Pakistan illustrates that Pakistan growth in the electricity installed capacity had been higher than India from 1947 to 1990-91. In regard to electricity generation in India, which was, only 4.1 billion kWh in 1947 had increased to 264.2 billion kWh in 1990-91 representing a compound growth rate of 9.7 per cent. Likewise, electricity generation in Pakistan that was 0.118 billion kWh in 1947-48 reached 41.042 billion kWh in 1990-91 representing a
compound rate of 14.22 per cent. The compound growth rate of electricity generation in Pakistan had been higher than India.

In power sector, the share of thermal had been always higher than the share of hydel for both the countries. This is true for not only installed capacity but also in the electricity generation. The share of nuclear electricity generation had been negligible in both the countries. In December 1947 India's hydro electricity installed capacity share was 37.3 per cent, which increased to 40.6 per cent in March 1980, but fell to 28.39 per cent in March 1991. In Pakistan, in 1947-48, the electricity installed capacity of the hydro power was 15.94 per cent which increased to 44.54 per cent in 1979-80, but fell to 33.02 per cent in 1990-91. This implies comparatively Pakistan had higher share of hydro installed capacity than India during 1980 and 1991, whereas India had higher share than Pakistan when they were separated in 1947. The thermal installed capacity in India, which was 62.7 per cent in December 1947 decreased to 57.73 per cent in March 1980, but increased to 69.24 per cent in March 1991. The thermal installed capacity in Pakistan, which was 84.06 per cent in 1947-48 decreased to 51.57 per cent in 1979-80, but increased to 65.42 per cent in 1990-91. This illustrates barring 1947-48, comparatively India had higher share of thermal installed capacity share than Pakistan particularly in 1980 and 1991. The share of nuclear electricity installed capacity, which was 3.8 per cent in March 1974 decreased to 2.37 per cent in March 1991 in India. In Pakistan the share of nuclear electricity installed capacity, which was 6.61 per cent in 1973-74 decreased to 1.56 per cent in 1990-91. This illustrates that the share of nuclear, which was higher in Pakistan than India in 1974 reversed their position in 1991.
In regard to electricity generation the share of hydro, which was 53.66 per cent in 1947 in India decreased to 43.5 per cent in 1979-80, and further to 27.06 per cent in 1990-91. In Pakistan the share of hydro, which was 20.34 per cent in 1947-48 increased to 58.19 in 1979-80, but in 1990-91 it decreased to 44.59 per cent. Comparatively the hydro electricity generation illustrates that except 1947, Pakistan had higher generation of electricity from hydro than India. In regard to thermal electricity generation in 1947 the share of thermal electricity was 46.34 per cent in India, which increased to 53.73 per cent in 1979-80 and further to 70.59 per cent in 1990-91. In Pakistan the share of thermal, which was 79.64 per cent in 1947-48 decreased to 41.79 per cent in 1979-80, but increased thereafter and reached 54.47 per cent in 1990-91. Comparatively, Pakistan had higher electricity generation from thermal than India in 1947. Thereafter, the share of thermal electricity generation in India had been higher than Pakistan, particularly in the period 1979-80 and 1990-91. The share of nuclear electricity generation, which was 3.6 per cent in 1973-74 in India, decreased to 2.35 per cent in 1990-91. In Pakistan the share of nuclear electricity generation, which was 5.06 per cent in 1973-74 decreased to 0.94 per cent in 1990-91. This illustrates comparatively that the share of nuclear electricity generation in 1973-74, which was higher in Pakistan than India reversed their position in 1990-91.

Considerable progress had also been done in the development of transmission network in both the countries. In India, (excluding 11 kV, 33 kV and distribution lines) the transmission network which was 83,140 kms in 1970-71, increased to 1,20,664 kms in 1980-81 and further increased to 2,06,893 kms in 1990-91. Similarly, in Pakistan transmission lines of 66 kV and above (excluding 11 kV, 33 kV and distribution lines)
which were 16,736 kms in 1980-81 increased to 30,657 kms in 1990-91. The growth in the transmission network in India above 66 kV increased from 1,20,664 kms in 1980-81 to 2,06,893 kms representing a compound growth rate of 5.02 per cent. In Pakistan, the growth in transmission network, which increased from 16,736 kms in 1980-81 to 30,657 kms in March 1991, represents the compound growth rate of 5.65 per cent. This illustrates during 1980-81 to 1990-91 Pakistan had higher growth of transmission network than India. Moreover, one of the important features in both the countries had been the development of higher capacity line with passage of time and necessity.

In India, industries had been the largest users of power, consuming about two-thirds of the total, followed by domestic and commercial users in 1950. Subsequently, the share of industrial sector even though decreased considerably over the years, still remained as the major consumer of electricity. As against this, the share of agriculture increased over the years and reached second position (24.43 per cent in 1990-91 followed by domestic sector (16.8 per cent). In Pakistan, similarly though the share of industry is declining, still it remained as the single largest consumer of electricity over the years followed by domestic and agriculture sector. However, in India in 1980-81, the electricity consumption share of industry was 60.56 per cent, followed by agriculture (14.47 per cent) and domestic sector (11.65 per cent). In the same year in Pakistan, the electricity consumption share of industry was 38.4 per cent, followed by agriculture (23.44 per cent) and domestic sector (20.49 per cent). In 1990-91, the electricity consumption share in India was 44.24 per cent by the industrial sector, followed by agriculture (24.43 per cent) and domestic sector (16.8 per cent). The electricity consumption share of industry in Pakistan in 1990-91 decreased to 34.28 per cent,
followed by domestic (31.42 per cent) and agriculture (21.05 per cent). The composition of electricity consumption in 1980-81 and 1990-91 in India and Pakistan illustrates that the share of industrial consumption in India had been higher than Pakistan. However, the declining share of the industrial sector over the period 1980-81 to 1990-91 in both the countries illustrates the fact the industrial activities in both the countries declined. The declining share of industrial sector in India had been compensated by the increase in the share of domestic and agricultural sectors whereas in Pakistan the declining share of industrial sector had been compensated by the domestic sector only. It is worthwhile to note that in India the share of agriculture had retained its second position from 1980-81 to 1990-91. Over the same period, the share of agriculture in Pakistan became from second position to third position implying that agricultural electrification declined.

To develop their economies, Governments of both the countries had been stressing the need for rural electrification. In India out of total villages of 5,79,000 villages as per the 1981 census, the village electrification of 3,061 villages in 1951 represents coverage of 0.53 per cent which reached 2,49,799 villages (43.14 per cent) in March 1980 and 4,81,124 villages (83.09 per cent) in March 1991. In Pakistan, out of total villages of 45,122 the village electrification of 609 villages by 1958 represents coverage of 1.34 per cent, which reached 10,169 villages in 1979-80 (22.53 per cent) and 37,135 villages (82.29 per cent) in 1990-91. The percentage of villages electrified in India and Pakistan illustrates that in 1950s the percentage of villages electrified was negligible in both the countries and it did not vary much amongst them. However, in 1980 India had 43.14 per cent of villages electrified while Pakistan had only 22.53 per cent villages. In 1991, prior to opening the power sector to privatisation, India electrified
83.09 per cent of the villages while Pakistan electrified 82.29 per cent, implying not much variation amongst them.

The total number of consumers electrified in both the countries increased many folds. In fact, in India it went up from 1.5 million in December 1950 to 14.6 million in 1970-71 and further to 69.6 million in 1990-91. The compound growth rate of the growth from December 1950 to 1970-71 works out to be 11.44 per cent. The compound growth rate from 1970-71 to 1990-91 works out to be 8.12 per cent. While in Pakistan under both the systems (WAPDA and KESC) the number of consumers increased from 0.4 million in 1959-60 to 1.5 million by 1970-71 and finally to 8.35 million by 1990-91. For a comparison the compound growth rate of number of consumers in Pakistan from 1970-71 to 1990-91 works out to be 8.51 per cent. From this compound growth rate analysis it becomes obvious that Pakistan, which had 8.51 per cent growth rate from 1970-71 to 1990-91, provided little more connection than India, which had 8.12 per cent growth rate during the same period.

Despite the above growth in the electricity sector in both the countries historically, there remained some constraints, which forced both the countries to open this area to the private sector. Power shortages in both countries are one such common constraint. This resulted in forced load shedding in both the countries. Power shortage in Pakistan had mostly been the peaking demand especially during the summer month when the water level fell whereas in India it had shortage even at any point of time.

Power shortages in both the countries were accentuated by the T&D losses. The all-India average T&D losses were around 20-25 per cent during 1990. The state-wise analysis of T&D losses in India was too precarious as Jammu and Kashmir topped the list
of states with T&D losses. In Pakistan both WAPDA and KESC made heavy T&D losses. In fact, KESC had losses around 35 per cent, with an additional 5 per cent loss from power theft, while WAPDA had around 27 per cent during late 1980s. Both technical and non-technical reasons were responsible for this dismal performance. Apart from high pilferage in the system, no proper billing, poor collection and high power theft are responsible for this situation. However, the analysis of T&D losses in both the countries illustrate that comparatively Pakistan had higher T&D losses than India.

Also, public utilities in both the countries were making financial losses because of subsidy. Agriculture and household sector in both the countries were heavily subsidised making them into financially weak which forced their Governments to open this sector to the private enterprise. Moreover, with the expansion of this state owned utility, mismanagement, inefficiency and corruption also increased. Increase in price of furnace oil in the international markets along with mounting receivables impaired the financial status of public utilities in both countries. The financial distress of the power utilities was accentuated by overstaffed, inefficient, and corrupt practices of the organisations. During this period electricity demand was growing at a faster rate. In view of the growing demand for electricity when the sector was facing financial crisis, it was not possible on the part of the public sector to bridge the gap by adding its capacity. Then both the countries opened this sector for private investment. International compulsion also played a part to privatise the power sector in India and Pakistan.

The Governments of both the countries announced private power policy in early 1990s and kept on modifying throughout the decades suiting to the requirements. Governments of India and Pakistan have total commitment to the private participation in
electric power sector. In order to create an enabling environment for private sector and to facilitate greater private sector participation, the Governments of both the countries have made private power policy transparent. Guarantees and credit enhancements are often essential for successful financing of power projects including independent power projects. This is especially required during their early years and transition from State monopoly to a more market-oriented economic system. This has been offered in both the countries to the IPPs.

Fuel Supply Agreement (FSA) is a common feature of the power policy of both the countries that is signed by the IPP and the Government in case fuel is supplied by the public sector ensuring uninterrupted supply of fuel to the power plant for the period of its operation. The policy in both the countries also allowed the IPPs to make their own arrangement in case they want to go for non-government supply in which case Governments are not responsible for the any disruption or whatever problem in the supply.

Financial institutions like banks in both the countries do finance the IPPs. Besides banks, Power Finance Corporation (PFC) in India plays a pivotal role in the financing of power sector including SEBs and IPPs. In Pakistan Private Sector Energy Development Fund provides loans up to 40 per cent of the project cost. Both the institutions provide the long-term loans in their respective countries. Debt-equity ratio has been 70:30 in India whereas it has been 80:20 in Pakistan for the development of private projects. From the debt-equity ratio requirements, it is evident that India has more equity requirements by the private promoters than Pakistan in the power sector development.
There are lots of concessional duties available in both the countries. There were exemptions from custom duties for all projects in Pakistan in 1994 policy. The 1995 hydel policy laid down that companies were required to pay 2 per cent custom duty on imported machinery. The 1998 policy stressed that companies were allowed to import plant on payment of custom duties, sales tax, Iqra, flood relief and other surcharges as well as Import License Fee. Further, the 'Policy for Power Generation Projects 2002' levied custom duty at the rate of 5 per cent on the import of plant and equipment not manufactured locally. There are also exemptions from sales taxes on plant and equipment and concessional loans for locally manufactured machinery. Government of Pakistan also exempted power projects from Iqra Surcharge, Flood Relief Surcharge, and Import Licence Fees. In India only mega power projects have been exempted from custom duty fee. In case of other projects, custom duty for import of equipment has been reduced to 20 per cent and this rate has been extended to machinery required for R&M of power plants. The excise duty on capital goods and instruments in the power sector has been reduced in India also. This analysis illustrate that Pakistan has more concessional duties—both customs and sales tax than India.

To facilitate the speedy clearance of the private power projects, Government of both the countries have taken very positive step in this direction. In Pakistan Private Power and Infrastructure Board (PPIB) at the federal level and Private Power Cells at the provincial level have been providing one-window facilities to the investors. Government of India has reduced the number of clearances for setting up private power projects. Now the thermal projects require five clearances, hydroelectric projects require four clearances and transmission and distribution projects need just two clearances against to earlier
required 13 statutory and four non-statutory clearances of any type of projects before setting up. Though, India has reduced number of clearances for setting up private power projects, Pakistan's one-window facilities through PPIB at federal level and Private Power Cell at provincial level would facilitate speedier clearance of projects in Pakistan than in India.

Necessary legal provisions have been taken in both countries to facilitate the privatisation of power sector. In Pakistan changes in the Companies Ordinance have been brought to permit registration anywhere to allow them to avail reduction in stamp duty, registration fees etc. Also, Government of Pakistan removed Section 13 of 1947 Foreign Exchange Regulation Act to enable non-residents to purchase securities issued by national of Pakistan without State Bank of Pakistan permission. WAPDA Act, 1958 has been amended allowing privatization of WAPDA's thermal generation units and area electricity boards. To promote fair competition in the electricity industry and to protect the rights of customers as well as producers and sellers of electricity, the Government of Pakistan has enacted the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (Act No XL of 1997). The National Electric Power Regulatory Authority (NEPRA) has been established under this Act.

Similar legal provisions have also been made in India. Amendments to the Electricity Generation Acts, namely, the Indian Electricity Act, 1910, and the Electricity (Supply) Act, 1948 was done in 1991 to facilitate the framework for private sector participation in the electricity sector. Enactment of Electricity Regulatory Commission Act, 1998, which allowed establishment of CERC and guided states to form SERC is another step in this direction. The passage of Transmission Bill opened the vista for
private participation in transmission projects. The Electricity Act, 2003, which integrated the three Acts, viz., the Indian Electricity Act, 1910, the Electricity (Supply) Act, 1948 and the Electricity Regulatory Commissions Act, 1998 in order to simplify the administrative procedures is also noteworthy. Regulatory Commissions in both the countries are expected to provide investor confidence in the organization and growth of the electric power sector.

To invite power producer to generate power in India, Government of India has opted the build-own-operate (BOO) route, whereas in Pakistan it is both build-own-operate (BOO) and build-own-operate and transfer (BOOT) after certain agreed years of operation to the Government has been adopted. However, for transmission of power Pakistan invited private sector on the basis of build, own and maintain, which is similar to BOO. Transmission has also been opened to the private sector in India. Investors in both the countries are free to choose site, opt technology and size of the power plants in both the countries. Both the countries did recognize the utility of renovating and modernizing the old plants. Privatization of distribution by unbundling the vertically integrated electricity utilities into the distinct functions of generation, transmission and distribution in both the countries came much later.

In the early days of power sector reform, both the countries being keen on bringing more units for power generation, invited IPP through memorandum of understanding route. This route ensures guaranteed rate of return. This way of inviting IPP in both the countries invited several problems including inflating the costs of the project to ensure better returns by the IPP. Finally, India and Pakistan closed this negotiation route and resorted to international competitive bidding for inviting IPP.
International competitive bidding process is the best way to select contractors for the electric projects, which ensures transparency and public accountability.

Both the countries have Power Purchase Agreement (PPA) that they sign with the private producers detailing the terms and conditions for power production in the private sector by the IPPs. It also enlists how the power will be purchased by the public entities. PPA is signed for 30 years in India by the IPPs with SEBs whereas it is signed for between 15 and 30 years by IPPs and WAPDA or KESC as the case may be in Pakistan, which is guaranteed by their country government. Both the countries have faced some difficulties and in fact, they have made some mistakes, which they realised quite late. The reason being is that they were new to this area and not having any experience, committed mistakes. Between these two countries, India had the wisdom to sit down with IPPs to negotiate, renegotiate in resolving the problem that are beneficial to both the parties. On the contrary Pakistan had gone back on the contracts that it signed. It has made all kinds of excuses in order to get out of the arrangements that it had agreed with the foreign party. Of late, Government of India (Federal Government) confronting several disputes backed away from this mechanism and asked the states for an escrow arrangement as an alternative.

In PPA two-part tariff to cover the fixed costs and variable energy cost in electricity pricing has been formulated in India. This provides for 16 per cent return on equity at 68.5 per cent plant load factor for thermal plants and 90 per cent availability factor for hydro-plants. In Pakistan also tariff was divided into two components, such as the capacity and energy price. Capacity price in Pakistan tariff is nothing but the fixed cost components of the Indian tariff system and Pakistan's energy price is nothing but
variable energy cost. Pakistan tariff for power generation provides 17-18 per cent return on equity at 60 per cent plant load factor for thermal plants. For hydel plant, bulk purchase tariff has been calculated on an annual plant factor of 50 per cent. Comparatively, Pakistan's incentive of 17-18 per cent return on equity at 60 per cent PLF of thermal plants (at 50 per cent for hydel plants) is higher than India's 16 per cent return on equity at 68.5 per cent PLF for thermal plants (at 90 per cent for hydel plants). This implies Pakistan private promoters are allowed an incentive of 17-18 per cent return on equity if they operate their thermal plant at 60 per cent plant load factor (50 per cent hydel plants) whereas in India private promoters are allowed only 16 per cent return on equity for which they have to operate their thermal plants at higher PLF i.e. 68.5 per cent (90 per cent hydel plants).

Comparatively IPPs in developing countries have been asking customers to pay higher prices of power than their counterparts in developed countries. In Australia and UK, for an example, wholesale prices were 3.4 US cents/kilowatt-hour (kWh), while the Pakistan's policy of 1994 accepted a charge of 6.5 cents/kWh. Even in India the price charged by IPPs have been considerable. This has been witnessed in case of Dabhol Power Corporation (DPC) in Maharashtra. In fact, the average Dabhol tariff since commissioning from May 1999 to October 2000 had been Rs. 4.84/kWh. The PPA agreed by the Maharashtra SEB and DPC was so designed that the price of power if at all increased would be passed on to the consumer through Maharashtra SEB. The IPP price has been high due to certain reasons like depreciation in exchange rate and increase in the fuel price globally which are passed through the consumers via the SEBs. In fact, the price charge by Dabhol Power Corporation in Maharashtra in India is much higher than
Pakistan per kilowatt-hour of power. This is arrived at converting Pakistan accepted charge of 6.5 cents/kWh into Indian rupee terms taking exchange rate as US$1 = Rs. 43.5 as per 1999-2000 dollar value, which became Rs. 2.82 or roughly Rs. 3.

The initial response of the private sector to the private power policy in both the countries have been good. Lot of proposals in both the countries came from the private investors. Some of them have materialised. As such a total of 34 projects with combined capacity of 6,796.01 MW have been commissioned in India since private power policy. Likewise in Pakistan since private power policy, a total of 17 projects have been operated and combined capacity of 5,955 MW have been commissioned. Also, many are on the pipeline in both the countries. However, the contribution of private sector in Pakistan has been higher than contribution by private sector in India. By March 2001, of the total installed capacity of 1,01,630 MW in India, private sector contribution of 6,796.01 MW constitutes 6.68 per cent. During almost same period (June 2001) in Pakistan’s total installed capacity of 17,457 MW, private sector contributed 5,955 MW constituting 34.11 per cent.

Private power installation and generation in both the countries have been basically in the thermal energy. In Pakistan out of the 17 private power projects operating, 16 are thermal plants and only one is hydel plant, which is comparatively a small size plant (Jagran 30 MW). However, out of 34 private power projects operating in India, five are hydro projects of comparatively small size. These five projects contribute 133.25 MW of the installed capacity. Though thermal power is costly, thermal generation has been chosen because it does not have the problems of resettlement and rehabilitation as it involved in case of hydro projects. Besides, some more hydropower projects in private
sector in both the countries are in advanced stages and hopefully will be commissioned soon.

The electricity-installed capacity in India which was 66,086 MW in March 1991, reached 1,01,630 MW in March 2001 representing a compound growth rate of 3.99 per cent. In Pakistan the growth rate in installed capacity during this reform period has been higher than India. In fact, in Pakistan the installed capacity which was 8,776 MW in 1990-91 reached 17,457 MW in 2000-01 representing compound growth rate of 6.45 per cent.

The growth in electricity generation during reform period is impressive one. In fact, in India the growth in electricity generation from 264.33 billion kWh in 1990-91 to 499.4 billion kWh in 2000-01 represent compound growth rate of 5.95 per cent. In Pakistan, the total electricity generation over 10 years period especially from 1990-91 to 2000-01 have increased from 41.0 billion kilowatt hours to 68.1 billion kilowatt hours representing compound growth rate of 4.7 per cent. Comparatively, India had higher growth rate in generation of power during reform period than Pakistan.

Creation of regulatory framework in both the countries is a positive sign of privatisation. Apart from setting up of Central Electricity Regulatory Commission by Government of India, states in India also have taken up similar step in setting up State Electricity Regulatory Commission. As such 12 states have set up SERCs. Pakistan has also set up National Electricity Regulatory Authority as a single entity for entire Pakistan, as there is no state regulation of power in Pakistan. Regulatory authorities in both the countries have also brought many important orders in regulating tariff
As a result of electricity generation both in the public and private sector during the reform period, there have been substantial improvements in the village electrification in India and Pakistan. In March 1991 the total number of villages electrified, which was 4.81 lakhs in India, went up to 5.08 lakhs by December 2001 representing a compound growth rate of 0.5 per cent. In Pakistan the total number of villages electrified which were 37,135 by 1991 increased to 71,561 by 2002 representing a compound growth rate of 6 per cent. Comparatively, the rate of growth in village electrification during reform period has been higher in Pakistan than India. But still Pakistan has more villages to electrify than in India. As per the 1991 Census total number of villages in India was 5.87 lakhs, out of which 5.08 lakhs villages were electrified by December 2001 representing 86.5 percent coverage. In Pakistan out 1,25,083 villages in the country, 71,561 villages were electrified by 2002 representing 57.21 percent coverage.

No employees have been retrenched on the grounds of privatization in both the countries. The private entities in India have signed agreement with the Government to retain the employees of the erstwhile public sector utilities. Likewise, in Pakistan to minimize the adverse effects of privatisation on employees, the Government of Pakistan made it a requirement for successful bidders to take over the entire work force in the unit and not to terminate their services for a minimum period of 12 months. Even after expiry of 12 months no employees of the erstwhile public sector units have been retrenched on the grounds of privatisation. Moreover, with the commissioning of few units in the private sector in both the countries, they have increased employment in this formal sector as well as in the informal sector. However, Government of both the countries recognised that public sector is over-employed. Rightsizing of public sector utilities like electricity
utility will reduce their cost of production and increase profitability. Therefore, employees of these utilities were offered very attractive voluntary retirement scheme like golden handshake scheme.

Both the Governments opened the transmission segment of the electricity industry to the private sector. There has been hardly any good response so far. Only in India two pilot projects, each on Independent Power Transmission Company and Joint Venture route has been taken up to attract private sector participation. In Pakistan a National Transmission and Despatch Company has been established after unbundling of WAPDA which will be privatised after privatization of all 8 distribution companies and 3 generation companies of WAPDA are completed. However, transmission policy of both the countries identified the package of transmission lines, which are offered to private sector.

Despite the above success as a result of power policy, there remain problems in the power sector. Public utilities in both the countries continue to incur considerable losses. Though both the countries have increased power tariff substantially during reform period for the agriculture and household sector, still these sectors pay much below the cost of production of power. In fact, electricity is provided to agriculture sector much below the cost of generation in India and Pakistan.

Other significant losses are T&D loss, which include power theft, unmetered supply loss, technical loss, poor revenue collection, purchase of power being costly, etc. T&D losses are high in both the countries. Despite the concerted efforts, T&D losses have not been substantially reduced. Moreover, lack of metering has enabled the concealing losses under the heading of cheap agricultural supplies. Of course, agriculture
in both countries is subsidised. But why it was high in erstwhile DVB in Delhi and KESC in Karachi where agricultural supply is negligible? It is only the faulty transmission-power pilferage coupled with theft and no metering that is taxing both the organisations. Since erstwhile DVB and KESC are operating in the urban areas, it is the rich class and affluent who are the non-payers of bill making them uncover their bill.

In the name of privatisation of the power sector, privatisation of generation was focused in both the countries from the beginning. For last 3-4 years both the countries realised the importance of privatisation of distribution. Orissa and of late Delhi in India virtually have done privatization of electricity distribution in their respective area of operation with 51 per cent sale of equity the private investors. WAPDA also is in the process of privatising its eight distribution companies. KESC will be privatised as a vertically integrated utility through sale of up to 51 per cent of its equity interest to a strategic buyer who will also be given control over its management. Currently technical, commercial and legal due diligence relating to KESC's privatisation is at an advanced stage.

Typically, reforms in such vertical monolithic structures as SEBs in India occur in a phased and time-consuming process. The tangible benefits would accrue only over a period of time. Only recently, there has been a perceptible shift on the part of the SEBs towards streamlining the distribution sector, which is the key to the long-term health of the power sector. It can be concluded that though, the privatisation of SEB has been slow; consensus is emerging with commitment and determination day by day, with more initiative from the Power Ministry and Power Finance Corporation (PFC). So far, 13 states have committed themselves to power sector reform with the financial and technical
assistance of PFC. Till date a total of 19 states have signed MoU with the Government of India to undertake reforms in a time bound manner. Certainly, the progress in IPP front is slow, but we are moving in the right direction with commitment. It is necessary to understand that the problems are quite complex resulting from many years of financial mess in the SEBs. It takes time to clear this mess and give confidence to promoters and financial institutions.

In terms of risk and returns, India and Pakistan are placed equally. In fact, investment in power sector by private sector is a risky job. Both the Governments can go to any extent despite their commitment. This has been quite evident in case of Enron Project in Maharashtra in India and HUBCO in Pakistan. Big hydropower projects like Kalabagh in Pakistan and Sardar Sarovar and Tehri in India have always attracted the attention of environmentalists in both countries. These projects have been riddled with problems of resettlement and rehabilitation of the people displaced by the projects. The verdict of the Supreme Court of India allowing the construction of dam in Sardar Sarovar project and the political sensitivities, particularly inter and intra-province discontentment in Kalabagh in Pakistan have once again highlighted the need for learning from each others experience in dealing with such organized public movements.

The electricity installed capacity by IPPs in India and Pakistan is much less than the expected. Proposals of 1,00,000 MW of IPPs did not mature in India. The delay led to high cost increase- both project cost and financing cost. Also, choice of technology led to the protracted negotiation and hence slowing down of IPPs who were clamouring for cost-based and fixed-rate-of-return-based decision rather than price-based competitive bidding. Also, in Pakistan the overseas investors responded with unprecedented interest
and MoUs for 10,000 MW were signed in Pakistan. Some of these projects were delayed and commissioned much later while others are yet to come. Much of the delay is due to PPA, which not only took time to negotiate and fix the tariff for the private power generation, but also due to renegotiation. Most of the IPPs have not been able to achieve financial closure even after a lapse of four to five years after signing the PPAs. Escrow account arrangement, which lends the maximum comfort to developers and financial institutions/ banks, has sadly not been resolved satisfactorily in most of the states in India. Moreover, the inordinate delay in getting clearances and approvals from various governmental agencies has resulted in a number of international power majors such as National Power, Electricite de France, Cogentrix and Daewoo abandoning their investment plans in India.

The investor friendly Power Policy in 1990s could not attract private and foreign capital much in both the countries. The poor financial health of SEBs in India and WAPDA and KESC in Pakistan is making the Power Purchase Agreement of IPPs unbankable. Thus, there is an increasing gap of demand and supply of electricity. There had been power shortage and load shedding in both the countries. Load shedding in India is round the year whereas in Pakistan it is during the summer when there is low river flow. The returns on investment in power sector are also high in both the countries. This is not only because both the Governments assured high returns on investment (16 per cent return on equity in India and 17-18 per cent return on equity in Pakistan), but also there is potential demand for power in both the countries. Given the privatisation of distribution and tariff rationalization in both the countries, returns would no doubt improve.
The IPPs are facing difficulties in financing their projects. These difficulties can be summed up as:

1. The State Electricity Boards (SEBs) in India and WAPDA and KESC in Pakistan, the only buyers of private power in their respective countries, are in a very poor state of finances as a result of irrational tariffs, political interference and managerial inefficiency.

2. The average selling price is lower than the average cost of supply for most of the State Electricity Boards in India and WAPDA and KESC in Pakistan. This is primarily a result of absurdly low or no tariffs for farmers and subsidised tariff for the domestic consumers.

3. As a result of SEB's lack of credit worthiness in India, bankers are insisting on escrow accounts before they finance private power projects, known as IPPs. These are, however, limits to escrow capacity.

4. The projects on pipeline will not be able to raise finances unless there is clear evidence of a move towards restructuring (SEB in India and WAPDA and KESC in Pakistan) and creation of creditworthy distribution companies.

5. The reform and restructuring (SEB in India and WAPDA and KESC in Pakistan) have been slow. Credible efforts towards private participation in distribution have been initiated only in a few states in India. Pakistan is yet to privatise eight distribution companies of WAPDA and KESC as a single entity.

6. IPPs in India are looking to state regulatory authorities known as the State Electricity Regulatory Commission to set tariffs that reflect costs. While some states have formed these authorities and issued orders in this respect, many are yet to form.
7. The private power producers have to deal with fuel sellers who enjoy monopoly or near monopoly, be it coal companies or public sector oil units. As a result, commercial fuel supply and transport contracts have not been easy to achieve.

However, the privatisation drive in both the countries opened new vista for cooperation. It is a fact that due to private power policy Pakistan was able to produce some surplus power. By 1998-99, it was estimated that Pakistan had 3,000 MW of surplus power. By then over 19 IPP projects with net capacity of 3,153.39 MW had already achieved financial closure. Now, with the addition of 5,955 MW by the private sector, the surplus power in Pakistan no doubt is high. Though India increased its installed capacity to 1,01,630 MW by March 2001, of which private sector contributed 6,796.01 MW as a result of private power policy, still it is not sufficient to match its requirements. However, India of late has taken some drastic steps not only in reducing subsidies in the power tariff but also by privatising distribution system in some of the states and more are on the offing. Pakistan with its surplus generating capacity could sale it to India while India with privatisation of distribution can ensure payments to Pakistan in turn. Thus, privatisation opened the scope for power trade between India and Pakistan.

No doubt, power trading between India and Pakistan can be advantageous to both of them. Moreover, the geopolitical proximity of the existing grids on both sides of the border is another inducing factor for power trade between these two countries. Apart from exchange of power between India and Pakistan, another similar area where cooperation can be concretized that could lead to development of power sector is the cross border gas trade. This is the reason why the option of importing natural gas from
neighbouring countries (Qatar, Oman, Iran, Bangladesh and Turkmenistan) is being seriously pursued.

Recognizing the potentiality, both countries had discussions on power trade. In fact, discussions between the organizations like Power Grid Corporation of India Limited (PGCIL) and various independent power producers in Pakistan were held for import of electricity for the states of Rajasthan, Punjab and Gujarat. Tariff had been an impending factor for the break up of talks. Pakistan is asking quite high tariff of Rs.3.00 (7 cents) per kWh which was not possible on the part of India to pay. Also, India's offer of Rs. 1.26 (3 cents) was not acceptable to Pakistan in view of its purchase from IPPs as agreed in PPA at much higher rate (6.5 cents/kWh).

The power trade talk was in its peak when Nawaz Sharief was in power in its second term. The Army, which took over the WAPDA on the eve of corruption in the power system, has halted the prospect of power trade between India and Pakistan. Owing to tariff issue, followed by Kargil war and dismissal of Nawaz Sharief Government talk did not materialise. Also, the hope that was expected from Agra Summit between Chief-Executive-cum-President of Pakistan General Pervez Musharraf and Indian Prime Minister Mr. Atal Bihari Vajpayee in 2001 did not materialise. This was followed by September 11, 2001 attack on WTC, USA and subsequent attack on Indian Parliament on December 13, 2001. Followed by attack on Indian Parliament, India deployed armed forces in its border almost in full preparedness for war. Equally Pakistan deployed its armed forces in its border to counterattack. However, armies were withdrawn later on due to international persuasion. With the election in Pakistan in October 2002 electing Mr. Mir Zafurullah Khan Jamali as the Prime Minister, there is a sign of improving
relationship between these two countries with the resumption of Delhi-Lahore bus service. If leadership in both the countries could resolve their animosity, the power trade as well as cross border gas trade will be beneficial enormously to both the countries. Since 12th SAARC Summit at Islamabad on 4th January 2004 there are improved relations between India and Pakistan. During the course of 12th SAARC Summit, Pakistan has agreed to support Iran-India gas pipeline passing through Pakistan, which is a positive indication of cross border gas trade.

5.2. Suggestions

The followings are certain suggestions for facilitating the privatisation in power sector in India and Pakistan:

1. Drastic change in attitudes at various levels for evaluation of a financial and administrative structure based on commercially oriented managerial ethos, free from political and bureaucratic interference is the basic requirement for the success of privatisation.

2. Professionalisation of management in the areas of finance, marketing and human resources in the power sector is urgently required. The objective of supplying quality and reliable power to consumers can be achieved through much better standards and accountability of management. Professional management apart from improving the financial position of the utilities will certainly change the mindset of the public sector electricity employees, which had been quite inward looking.

3. Induction of competition in the sector (generation and distribution), which would lead to enhancement in efficiency of operations, thereby benefiting the consumers is certainly required for the development of power sector.
4. Accountability to all stakeholders and consumers are required for the success of private power policy.

5. No doubt unbundling the vertically integrated utilities is a right step towards privatization. But that is not the ultimate objective. Because mere unbundling and corporatisation of the different functions of the SEBs will not impart operational autonomy and financial independence to the successor entities, as the entire capital of the successor entities will still be owned by the state government either directly or indirectly. This requires privatization of distribution, which will ensure the control of power theft, power pilferage, proper billing, revenue collection, and hence payment to the private producers. Moreover, considering the lack of independence in the present structure and also the state of affairs, privatisation of distribution is the key to a healthy power sector. Orissa and Delhi have privatised their distribution function while others are yet to do so. Also, in Pakistan WAPDA's unbundled eight distribution companies need to be privatised to ensure payment to the power sector.

6. In power sector the concept of "levied of user-charges" should be followed strictly. This implies the user of electricity should pay for use. Neither it should be subsidised nor cross-subsidised. Consumers from agriculture and domestic use are highly subsidised whereas the industrial consumers are charged above the cost of production to cross-subsidise the agriculture and household consumers. However, this exercise does not cover the entire portion of the subsidy given to the agriculture and household sector. This creates financial bankruptcy to the public utilities that have been primarily responsible for distribution.

7. The argument for providing subsidy to the agriculture and household sector are generally based on the principle of equity and welfare. No doubt, the state in order to achieve its objective of equity and welfare may do so but not at the cost of public utilities like SEBs in India and WAPDA & KESC in Pakistan. If the state
wishes to do so, it should provide the money amount equivalent of subsidy to these public utilities from the public exchequer.

8. The financial problems of public utilities requires rationalisation of the tariff structure on urgent basis to re-cover at least the cost of supply and a basic minimum level of return.

9. The regulatory commissions should tackle tariff issues. As such, SERCs in different states of India should address this problem in the state sector. For the central sector CERC should take care the inter-state transmission tariff and tariff for the mega power projects. Likewise NEPRA should rationalise the power tariff in Pakistan. These regulatory commissions can rationalise the tariff taking into consideration of the interest of the producers as well as the consumers. They need to function with autonomy and independently without any political interference.

10. The central point is that the three main issues, that are, theft of power, irrational tariffs and operational/managerial inefficiencies have to be addressed properly. This along with 100 per cent metering and energy audit, which would check thefts, should ultimately lead to improvement in performance and financial viability of the power sector.

11. A balanced and rational approach with a long-term perspective towards establishment of generation and transmission capacities which take into account optimum and economic mix for development of thermal, hydel, nuclear and alternative sources should be designed. As such, too much dependence on imported fuel should be avoided as much as possible and alternative energy mix like hydro and renewables may be opted in the long run.

12. Removal of remaining policy and procedural hurdles, better formulation of projects after detailed studies and surveys, investigations, better construction methods/practices, adequate attention to investments in the transmission sector
and overall improvement in management of power projects are required for the success of the privatization of power policy.

13. Most of the unresolved issues in privatization of power sector will be tackled through recently enacted Electricity Act, 2003. This Act makes the privatization of distribution mandatory for all the SEBs. Also, various state reform bills can help in this direction.

14. For the success of power trade between India and Pakistan, some of the contentious issues like power tariff need to be resolved. Given the fact that offer price of electricity by Pakistan is quite high and India is not ready to buy at that price, there could be some consumers who may be interested to buy this power at this rate. In fact, there may be some industrial units which may be interested to buy this power. This may be identified and then supplied to them.

The most formidable obstacle in Indo-Pak power trade had been the historically political animosity. Kashmir had been the center of this animosity since the partition and nobody knows when this will be resolved. Therefore, political leadership in both the countries forgetting the past animosity should endeavour to gain the economic benefits that emerge from power trade. Political leadership can also make possible the prospects of cross border gas trade which will further accelerate the pace of power sector reform in both the countries. This will be economically beneficial for both the countries. With the elected Government in Pakistan, which came to power in October 2002, there has been a sign of improving relation recently between India and Pakistan with the leadership of Pakistani Prime Minister Mr. Mir Zafrullah Khan Jamali and Indian Prime Minister Mr. Atal Bihari Vajpayee. Since 12th SAARC Summit at Islamabad on 4th January 2004 there are improved relations between India and Pakistan. During the course of 12th SAARC
Summit, Pakistan has agreed to support Iran-India gas pipeline passing through Pakistan, which is a positive indication of cross border gas trade. If the leadership of both the countries would resolve some of the contentious issues amongst them including Kashmir, the economic relation including Indo-Pak power trade will certainly materialise.