

Privatisation of Electric Power Sector in Pakistan: Some Important Issues

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The electric power sector in Pakistan is growing faster (11 percent) than the average growth rate of other developing countries (10 percent). However, the demand in Pakistan is growing even faster than the supply and therefore power shortage has become a serious problem. The problem is compounded by inefficiency of electric power sector. Moreover there is underpricing, subsidising, overstaffing and inadequate maintenance. Like many other developing countries, Pakistan has also opted for "privatisation" in the form of transfer of ownership as the first best solution. However, a wide range of literature argues that such type of privatisation in the case of electric power may not lead to miracles.

The present article attempts to analyse the past inefficiency of the electric power sector in Pakistan and performs a diagnostic analysis to identify sources and causes of inefficiencies. This analysis does not necessarily support a strict privatisation based reform. The article further discusses the salient feature of privatisation of electric power sector in Pakistan and some important issues related to its feasibility. It is noted that the privatisation of electric power sector in Pakistan, as pursued now, may not resolve the problems of this sector. It may ease short-run financial constraints but it may also create a number of long-term problems such as inappropriate planning, greater energy dependence and insecurity. It is also noted that current problems stem primarily from institutional and organisational constraints faced by public sector power enterprises. The key issue may not be a choice between public or private ownership but to determine an appropriate reform package based on either public/private or a mixed ownership structure, that encourages greater private involvement and functions well in the specific environment of Pakistan.

1. INTRODUCTION

Like many other developing countries, Pakistan announced a policy shift towards the private sector in early 1980s which was later enhanced by the structural adjustment programme under the supervision of the IMF and the World Bank. Consequently, private sector investment increased from 26 percent to 51 percent of total investment during 1978–88. However, most of the privatised companies were in manufacturing industry. Privatisation in the banking, electricity, telecommunications and transport sectors was delayed because of lack of procedural clarity, fear of unemployment among workers and the consequential emergence of private monopolies resulting in increase in prices.

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Recently, Pakistan has expanded the scope of its privatisation programme to include infrastructure also with electric power sector at the top of the agenda. The policy objective is to improve efficiency by establishing a healthy and competitive infrastructure sector. Privatisation of electric power sector expected to spur economic growth and reduce fiscal deficits. But there are contrary opinions.

It has been argued in a number of studies that privatisation of electric power may not lead to miracles. Even though it may ease short run financial constraints, but it may also create a number of long-term problems such as inappropriate planning and greater energy dependence and insecurity. Even short-run financial benefits may be costly if the sector is not properly regulated and supervised. Therefore, the key issue may not be a choice between public and private ownership, but to determine an appropriate and suitable reform (either public or private or a mixed public-private structure) which could work better in the specific environment of Pakistan. This article argues that the privatisation of electric power in Pakistan, as pursued now, may not resolve the problems of this sector. It presents a diagnostic analysis of the sector and discusses some issues related to privatisation-based reform and competition and efficiency.

2. SALIENT FEATURES OF ELECTRIC POWER SECTOR IN PAKISTAN

The power sector of Pakistan can be characterised as follows:

Structure

Pakistan's two power utilities are the Water and Power Development Authority (WAPDA) and the Karachi Electricity Supply Corporation (KESC). The former has a national coverage, whilst the latter serves only the Karachi division and adjacent areas. WAPDA's power plants are a mix of hydel and thermal units, whilst KESC's are mostly thermal. A limited amount of electricity is also generated at the Karachi nuclear power plant. Both WAPDA and KESC are vertically integrated in the generation, transmission and distribution of power and although they are not subject to rate of return regulation, price increases must be approved by the government.

Growth

Growth in power generation has been very substantial with an increase in aggregate supplies of approximately 12 percent annually from 1960 to 1995. Over the same period per capita power availability increased from 28 KWh to 444 KWh.¹ However, the demand is growing at a higher rate and power shortage has become a

¹Data cited here come primarily the published reports of the companies. For information sources, see Ghafoor (1998).

serious problem which has forced the rationing of power supply. Therefore, load-shedding by the two companies has been seen as a major problem over this period and several studies have suggested that power bottlenecks have imposed serious costs on the economy. For example, Pasha and Gellerson (1988) and Ali (1990) calculated the loss in industrial output from factory closures due to power cuts. The former suggested that it might be 9 percent of annual industrial output. The latter puts the annual cost in lost GDP at 1 billion dollars. Using the production function approach, USAID (1988) estimated the cost of load-shedding at nearly 2 percent of GDP and a fall in manufactured exports of 4 percent.

Technical Performance

System losses in the power sector of Pakistan at 24 percent in 1990, were relatively higher than in the UK and the USA [World Bank (1994)]. Ghafoor (1998) argues that higher system losses may be due to unreliable and old-age generation plants, low-voltage transmission and distribution lines and inappropriate location of grid stations, as well as some non-technical factors such as inaccurate metering and billing, default payments, un-metered supplies, and theft from illegal connections. However, the average generation capacity factors² for the sector are as good as for other developing countries [Ghafoor (1998)]. Therefore, shortage of electricity cannot be attributed solely to inefficient use of available installed capacity.

Financial Performance

Although both WAPDA and KESC have shown a substantial annual average net profit on sales after interest (13 percent and 9 percent respectively averaged over 1960–95), this has been found to flow from financing their development programmes through grants, low interest loans and subsidies on foreign loans, so that the full cost incurred to supply electricity was not reflected in their financial costs. When a proxy of 10 percent capital charge element is included in total cost, the average net profit on sales becomes –55 percent for WAPDA and –46 percent for KESC during 1960–95 [Ghafoor (1998)]. This clearly indicates that power tariff without capital cost gives a misleading signal for pricing. Therefore, price was set at a level lower than long-run marginal cost. Comparative tariff data suggests that in dollar terms tariff in Pakistan, at least in the 1980s, were well below those in comparable economies in the Asian region [Malhotra *et al.* (1994); Ghafoor and Weiss (1998)].

²Generation capacity factor is an indicator of capacity utilisation for electric power industry. It is expressed as follows [Humphlick (1993)].

$$\text{Generation Capacity Factor} = \frac{\text{Annual Gross Output (MWh)}}{\text{Annual Installed Capacity (MW)} \times 8760} \times 100$$

Where, 8760 are total number of hours in a year of 365 days.

Economic Performance

Ghafoor (1998) noted that not only average labour productivity³ in the case of WAPDA and KESC was very low, it decreased over time in the case of KESC. Although, the growth in total factor productivity (TFP) was positive in the case of WAPDA, it was negative in the case of KESC, which gave a very low TFP growth (0.41 percent for 1960–95) for the overall power sector compared to that found in other similar studies.⁴

Economies of Scale

The empirical work by Ghafoor (1998) also indicates that there are economies of scale in the case of electric power sector. A generation-level analysis of cost per KW of installed capacity and size of plant indicates that steam and hydel power plants have increasing return to scale, whilst gas turbine and combine cycle power plants do not exhibit any economies of scale. Since the share of hydel and steam thermal power is higher in total electricity for WAPDA, it has a higher level of economies of scale, which helped it to lower its unit cost of production.

Capital Requirement

The under-pricing coupled with substantial system losses, produced a net profit which was never large enough to finance a substantial part of future investment, and consequently electric power remained in short supply.

3. DIAGNOSTIC ANALYSIS

Since electric power is supplied through a unique networked delivery system, investments in the delivery system are mostly irrecoverable and are sunk costs. Then, there are economies of scale. With these characteristics the power sector is usually considered to be a natural monopoly. Although, recent technological and market developments have made the unbundling of power sector possible (i.e., the breaking up of the generation, transmission and distribution activities), there is a broad agreement that the transmission function in most circumstances is a natural monopoly [Tenenbaum *et al.* (1992); World Bank (1994); Ghafoor and Weiss (1997)].

Since electricity is recognised as a prerequisite for many economic and social activities, the development of the electric power sector has enjoyed a prominent

³The labour productivity was measured as a ratio of value added to the total number of persons employed.

⁴For the UK for example TFP growth was 8.7 percent during 1968–73 Pryke (1981), and 1.4 percent during 1978–85 [Molyneux and Thompson (1987)].

place in national development. Because of its special characteristics like capital intensiveness, technological complexity, long project life, long gestation period and comparatively small and a spatially dispersed electricity market, it was unlikely to attract private investors in its initial stages. Therefore, public ownership alone could ensure the desired level of production and distribution needed to accelerate and strengthen agricultural and industrial development and its potential benefits to flow towards general economic and social development. Geographical difficulties in some areas also scared away private investors. Lack of infrastructure facilities was another discouraging factor. The development of undeveloped areas was (and still is) a concern for policy-makers as well as public concern for equity and income distribution in which cheap and continuous supply of electricity for all citizens figure prominently. The vertically integrated and publicly owned utilities are therefore seen as ideally suited to deal with these social goals. Therefore, like many other developing countries, a monopolistic, vertically integrated, public electric power sector was developed in Pakistan, which was favoured by the donor agencies (the World Bank and the IMF) because of its relatively large absorptive capacity and government guarantees for credit [Barnett (1992)].

Does this market structure of public ownership contribute to poor performance? Some think yes. They argue that with public ownership, property rights are diffused between large number of shareholders and no individual has an incentive to incur the substantial information costs needed to monitor and control management. Therefore, Tenenbaum *et al.* (1992) argue that "when the state owns, nobody owns; and when nobody owns, nobody cares".

The alternative view is that ownership *per se* is much less critical than institutional and organisational constraints faced by an enterprise.⁵ By organisational constraints, we refer to the managerial and operational constraints internal to an organisation (in our case, electric power utilities) for a given market structure. Similarly, institutional constraints include government and regulatory bodies. Table 1 represents the factors affecting the performance of electric power sector.

Table 1 indicates that the poor technical performance of electric power sector in Pakistan may be due to organisational constraints. For instance, higher system losses may be due to inappropriate location of generation plants and the national grid station, voltage of transmission lines and age of plants. However, there are some non-technical problems such as undeveloped anti-theft laws, poor metering system, inefficient measures of security and inadequate maintenance. At the same time poor financial performance may also be due to price setting and very low adjustment of electricity tariffs to reflect higher costs. Poor managerial performance may be due to lack of autonomy in investment and capacity expansion decisions. Furthermore,

⁵Recent literature on the issue of comparing performance in private and public electric power sectors includes: Pescatrice and Trapani (1980); Fare *et al.* (1985); Claggett *et al.* (1995); Koh *et al.* (1996); Bagdadioglu *et al.* (1996); Deboer and Evans (1996); Newbery and Pollitt (1997).

Table 1

Identification of Factors Affecting the Performance of Electric Power Sector

Indicators	Explanatory Factors	Institutional Constraints	Organisational Constraints
Financial Performance	<ul style="list-style-type: none"> • Pricing Policy • Employment Policy • Investment Decision • Access to Finance • Managerial Decision 	<ul style="list-style-type: none"> • Price control to achieve the equity and welfare objectives of government • Increased employment to alleviate poverty • Government political decisions • Hurdles from bureaucratic process • Budgetary constraints • Government guarantees 	<ul style="list-style-type: none"> • Lack of autonomy • Lack of resources for future investment due to price lower than long run marginal cost • Depends on government budget • Foreign debts • Political interference in day to day operation • Financial condition of organisation • Lack of resources • Poor design and inappropriate location due to lack of technical expertise • Lack of anti-theft law • Inadequate replacement of old plants • Other non-commercial factors
Technical Performance	<ul style="list-style-type: none"> • Operating • Performance • System Losses • Suboptimal Expansion 		

Source: Derived from Bhattacharyya (1995).

despite repeated efforts, both WAPDA and KESC have failed to recover defaulted payments from their respective defaulters. All of the above mentioned factors can be linked to institutional constraints. Thus, institutional constraints coupled with organisational constraints are responsible for poor financial performance, which in turn is responsible for inadequate capacity expansion. It can be concluded that public ownership may lead to political interference and centralisation, excessive size may lead to the problem of inflexibility and limited skills, poor capabilities of regulators and management may lead to lack of professionalism, and unclear objectives may lead to proliferation of bureaucratic regulations and controls on managerial freedoms. Moreover, as the power sector is not capable of financing its future investment, capacity expansion depends on government resources, which are shrinking overtime, so new sources of financing need to be found. This analysis does not necessarily support a strictly privatisation-based reform.

4. SALIENT FEATURE OF PRIVATISATION POLICY OF ELECTRIC POWER IN PAKISTAN

Pakistan has adopted a partial privatisation policy in the case of electric power, where generation and distribution have been opened to the private sector while transmission remains under state control. Moreover, hydroelectric power plants in the case of WAPDA would also remain in the public domain while thermal power plants and the distribution sector would be divided into eight districts to be privatised. As for, KESC is concerned, its structure would not be divided into districts but parts of its stock (26 percent of total) would be sold to the private sector. The transmission sector of the KESC would be connected to the national grid of WAPDA to separate it from generation and distribution sectors.

The privatisation of the electric power sector was started by announcing an incentive packages for private power generators in 1994. The main points of this package are as follows:

- Decision on construction sites and technology are at the private sector's discretion.
- Government will provide guarantees for selling prices and for electric power sale contracts between private power plants and WAPDA and KESC.
- Government will provide guarantees for fuel procurement from state-owned enterprises, for foreign exchange risk and for overseas remittance risks.
- Private projects will mainly be financed through the World Bank. Conditions of loans are a 14 percent interest rate, with a repayment period of 23 years, including an average grace period of 8 years.
- There is an initial exemption from corporate tax and the removal of indirect taxes on machinery and equipment.
- Investment procedures are to be simplified.

These measures have been taken to introduce an Independent Power Producer (IPP) system so that private entities can construct and operate power generation plants and then sell produced electricity to the state transmission sector.

Since 1994, 19 private power plants have been under construction and 16 of them were expected to start operations in 1997-98 (Table 2).

As mentioned earlier, the electric power sector will be divided into generation, transmission and distribution sectors. The electric power demand and supply through the public and private power plants will be co-ordinated by the National Electric Power Regulatory Authority (NEPRA). The NEPRA will also be responsible for the establishment of electric tariffs and the co-ordination of future investment programmes. However, WAPDA will manage the hydro power generation and rural electrification.

Table 2
On Going Private Power Projects in Pakistan

S.No.	Power Plant	Plant Capacity	PPAs Signing Date	Scheduled Operation Date
1	Hub Power Project Unit 4	323	24.11.1994	04.1997
2	AES Lalpir Ltd.	362	03.11.1994	11.1997
3	AES Pak Gen (Pvt) Ltd.	365	05.09.1995	12.1997
4	Kohnoor Energy Power Co. Ltd.	131	08.11.1994	04.1997
5	Southern Electric Power Co. Ltd.	117	17.11.1994	09.1997
6	Japan Power Generation Ltd.	120	21.03.1995	10.1997
7	Davis Energen (Pvt) Ltd.	10	18.01.1995	07.1997
8	Power Generation System Ltd.	113	25.09.1995	07.1997
9	Habibullah Coastal Energy Ltd.	140	25.03.1996	12.1997
10	Saba Power Company Ltd.	114	26.12.1994	02.1998
11	Rousch (Pakistan) Power Ltd.	412	25.02.1995	03.1998
12	Uch Power Project Ltd.	586	23.11.1995	11.1997
13	Fauji Kabirwala Power Co. Ltd.	157	21.03.1996	11.1998
14	Altern Energy Ltd.	14	18.09.1995	07.1997
15	Liberty Power Project	235	26.11.1995	08.1997
16	Eeshtech Ltd.	20	19.03.1996	04.1998
17	Northern Electric Company	6	17.01.1995	11.1998
18	Consolidated Electric Power Asia Ltd.	1426	27.10.1995	09.1999
19	KESC Gul Ahmed Energy Ltd.	136		04.1997
	Sabah Shipyard Pakistan Ltd.	288		10.1997
	Tapal Energy Ltd.	126		11.1997
	Total	5204		

Source: OECF (1997).

As yet Pakistan has achieved privatisation only in the case of the Kot Addu Thermal Power Plant through sale of 36 percent of total stock to the private sector along with the management rights. The remaining 64 percent is scheduled to be sold gradually. With management rights, private companies will have all powers from electric power generation to price setting. Labour shedding is, however, based on the employment agreement between All Pakistan State Enterprises Workers Action Committee (APSEWAC) and the government [OECF (1997)].

5. ANALYSIS OF CURRENT PRIVATISATION POLICY

It is clear from the above discussion that the power sector has certain characteristics including existence of a natural monopoly, economies of scale, capital intensiveness, long project life, and the need for long term security for the producers.

Thus, a model for reform should take these characteristics into account. According to Tenenbaum *et al.* (1992) and Bhattacharyya (1995), the following are the possible models of power sector reform.

- Transfer of ownership without disintegration (where disintegration means splitting the power sector into generation, transmission and distribution sectors).
- Partial disintegration (separating generation sectors from transmission and distribution with competition by contracting at the generation level).
- Complete disintegration with competition between producers and distributors.
- No disintegration, but contracting the whole operation and management to private sector.

Like many other developing countries, Pakistan at present is following the partial disintegration policy (the second model above). As a result, privatisation of the electric power sector has been limited to the generation level only. The question is whether this type of privatisation is capable of creating the competition required for efficient resource allocation, of generating the capital needed for new investment, of providing access to modern technology, of improving managerial efficiency and of avoiding undue political interference.

Competition Arguments

Although, a number of private power projects are under construction, only one plant has started operation during 1997 (Hub River thermal plant) which contributes a total of 969MW, about 1 percent of total capacity. Even if all the proposed private power projects start operation successfully by 2000, the total private sector contribution will not increase to more than 10 percent. Under this situation privatisation does not guarantee a competition for several reasons. First introduction of one or two new generators does not spontaneously lead to competition. The market power of two new generators obviously remains substantial, and their capacity to collude, rather than compete, is considerable and is probably the most likely outcome. Second, all private power generation plants are either gas turbine or combined cycle, which are based on fossil fuels. These plants cannot compete with the large public sector's hydro and steam power plants which are not only economical due to economies of scale but also environmental friendly.

Moreover, the government has to induce private investors by offering considerable concessions including tax holidays and repatriation of earning in foreign currencies. Therefore, theoretically speaking competitive bidding for a particular BOOT project may be possible but in reality it is unclear whether this will be the case. In the absence of such competition, there is always a possibility of rent seeking behaviour from contracting firms by equating higher prices with capital invested. A similar situation has developed in Pakistan. Private power producers

have taken the advantage of Pakistan's privatisation policy and have agreed to supply electricity at a price which is higher than the long-run marginal cost. An effort is now there to correct this situation by resetting the price according to long-run marginal cost by rescheduling all these contracts.

Privatisation and Politics

The question of political interference with public enterprises cannot be eliminated particularly in the case of infrastructure. Political interference affects pricing and investment decisions. For instance, it was argued during the earlier period of establishment (and still is) that since both rural and urban poor have very few infrastructure facilities compared to the rich, the utility tariff should be subsidised to lower the financial burden of the poor.⁶ Like many other developing countries, subsidising charges coupled with rapid growing demand increased future investment at a level which was out of the reach of Pakistan. Bhattacharyya (1995) asserts that in general, developing countries required a capital investment of about \$110 billion per year including about \$40 billion in foreign exchange to cope with their future demand for electricity. Since these requirements are commonly met from foreign borrowing, the result is a serious debt crisis. Moreover, the private electric power sector has to be regulated through a regulatory body which would be under political influence directly. Although, privatisation may decrease political intervention in managerial decision making to some extent, it will not lead to improvements without regulatory or institutional reforms. It is often argued that the main reason for government intervention in public enterprises is financial. If the power sector can become financially independent, intervention can be reduced, without resorting to private ownership.

Privatisation and Labour Policy

Issues like labour policy and employment are closely related to privatisation. It is argued that privatisation will lead to shedding of the labour force to raise productivity of the sector. Such action however requires identification of areas where labour is either abundant or in shortage. By analysing the situation, it may be easy to plan for better utilisation of labour force (e.g., shifting labour from one area to another). For instance, technological advancements at generation level demand labour shedding, the extensions of transmission and distribution systems may require more labour. What is needed is a restructuring of the whole system.

⁶For example, in Bangladesh subsidies for the non-poor are six time larger than for the poor and in Ecuador, a subsidy of \$36 a year goes to the 37 percent residential consumers with the lowest use, but \$500 a year goes to richer households with a higher use [World Bank (1994)].

Privatisation and Development Policies

The risk with privatisation is that as the private sector prefers quick returns, private investors may set up plants of short gestation period (like gas turbine and combined cycle plants). This behaviour may lead to a lack of diversity and adversely affect long-term planning. Further, these plants have a higher capital cost per unit of output and since they use fossil fuel, their establishment may lead to more dependence on imported fuels.

Privatisation and Environment

There is a need to look at the environmental costs and benefits of privatisation in the case of electricity. In the past, the public electric power plants were one of the major sources of environmental pollution because of old technology (coal based plants) and limited environmental controls. It is argued that with privatisation new technologies are expected to be utilised which will lead to less pollution. However, better utilisation of plants and extensive use of fossil fuel may increase the total emission of SO₂ and NO₄ which will not only deteriorate the air quality but also contribute to global warming. Moreover, it may be difficult to regulate private companies on informational grounds. Thus a change of ownership is not necessarily a safeguard.

6. ALTERNATIVE POLICY REFORMS

As argued earlier, the problems of electric power sector are linked with institutional and organisational constraints which may not require a change in ownership. However, there are four main steps involved in the performance of a public enterprise;

- Explicitly defined goals and objectives.
- Identifying required changes in organisational culture.
- Identifying required changes in institutional culture.
- Implementing the changes.

Let us examine each step in more detail.

Enterprise's Goal and Objectives

Often government objectives for state owned enterprises (SOE) are multiple, unclear and ambiguous. Where stated explicitly, they may be inconsistent and can frequently be altered in response to political circumstances. The purpose of this exercise is to identify as explicitly as possible the goals and objectives that the enterprise should pursue.

Ideally, an enterprise should have a single set of compatible goals and objectives. However, it is possible for an enterprise to pursue multiple goals and objectives, if they are explicitly defined and clear. For instance, public electricity enterprises can have both commercial (such as self-financing, price equal to long-run marginal cost etc.) and non-commercial (such as income distribution, development of remote area etc.) objectives. However, they need to be clearly separated. A subsidised rate should be targeted at those who needed it, not at all consumers who can pay the actual price of utility. The targeted approach may be possible in rural areas where poor people can easily be spotted. In the case of urban area, it could be possible by designing a two part tariff where minimum basic amount could be provided at a subsidised rate but beyond that limit every one has to contribute to compensate for the subsidy. In all cases, it should be clear in a financial statement how much subsidies are being provided and how much are being compensated through other means. Similarly, all projects involved in developing a remote area would also be dealt with separately. This process will provide an opportunity to keep an eye on incoming and outgoing financial resources which would help to develop future strategy more clearly.

Identifying Required Changes in Organisational Culture

Schein (1983) mentioned five elements that help in identifying required changes in organisational culture. They include goals and objectives, strategy to achieve them, means of accomplishing the strategy, performance measures and correction mechanism. The first element has already been discussed in the previous section. By strategy, we mean how people plan their task. It will have to address questions such as:

- Is there any division of labour, or function groups which are responsible for a specific task?
- What means do they use to accomplish each task and what is the organisational structure?
- How is performance measured?
- Is there any incentive system for good and any penalty for bad performance?
- What institutional changes are required to improve enterprise performance as a whole?
- What correction measures should be taken if the enterprise's performance goes wrong?

For example, in the case of the electric power sector in Pakistan, generation, transmission and distribution functions need to be separated. Every function should have its own independent management and financial system: whether under public or

private ownership, joint ventures or under contractual arrangements with the private sector whilst retaining public ownership, the transmission sector should buy electricity from the generation sector. This process will lead to transparent business relations between these sectors and management (public or private) can clearly understand the flow of financial resources from one sector to another. Moreover, it will also help in identifying where in the system as a whole there is excess labour and low productivity. However, the question of economies of scale needs to be considered. As earlier, discussed, there are economies of scale at generation level and under the disintegration of the power sector, the benefit of economies of scale will be reaped at this level. Similarly, there might be economies of scale at the transmission level in the purchase of transmission, which will again remain after disintegration. The distribution level is more complex however, and appropriate regions have to be set up to take advantages of any scale effects. It may also be useful to break the transmission monopoly by providing electricity for larger users directly from generation companies.

Since institutional factors are a function of ideological belief and external factors, like changes in international environment, they are dynamic. Even if the change in an ownership is not required in the short term, the government needs to be determined to improve the efficiency. This requires greater managerial autonomy. For instance, management should be allowed to adjust prices with inflation and increased fuel charges and to decide about future investment and technology.

Implementing Changes

Productive cultures are those where an enterprise's goals and objectives are further supported by external as well as internal motivation and control mechanisms. There are four elements in external control mechanism: (i) market control, (ii) legislation, (iii) subcontracting, performance contracting and asset leasing and (iv) direction by ownership. Where strong market control is possible, arguably ownership does not matter. Where market control is not feasible, legislation, subcontracting in terms of performance contract and asset leasing are alternatives. Legislation is an alternative for indivisible natural monopolies such as transmission. It may be helpful to regulate both charges for and availability of services. Divisible monopolies such as generation and distribution are amenable to private participation through subcontracting, performance contracting or asset leasing. For instance, in the case of electricity, the government can use performance contracts, or asset leases rather than transfer of ownership for individual generation plants. This will help to create a healthy competitive environment and will also provide an opportunity for more information on cost and benefits needed to develop a better regulatory system. Similarly, in distribution, performance contracts would be useful as a means of understanding the market mechanism at the early stage of reform. Transfer of ownership can occur later when the state is in a better position to regulate a utility.

7. CONCLUSIONS

Pakistan electric power sector is characterised by higher system losses, low financial profitability and very low total factor productivity growth. This below standard performance may be due to a variety of reasons. Apart from technical problems, underpricing and subsidising are found to be more critical. Although WAPDA was supposed to set a price according to long run marginal cost, this objective could not be achieved. Thus, subsidised electric power tariff were continued on the ground of poverty alleviation and industrial development arguments. Further, default payments also played a significant role in the financial crises of electric power sector. These problems led to search for alternative policy options such as privatisation.

Since Pakistan is following a partial divestiture policy in the case of electric power, the question of competition, political interference and other development policies will remain unanswered. It is, therefore, likely that the present privatisation exercise may ease short-term financial constraints but it will certainly not lead to any miracles. Even short-run financial benefits would be at a substantial cost if the sector is not properly regulated and supervised. For instance, incentive package for independent power producer system under the privatisation policy was so attractive that a large number of private investors came forward and Pakistan is now facing the fear of a power glut. This situation led to search for an international market to export surplus electric power such as India. Moreover, since the IPPs are using only gas turbines and combine cycle power plants, Pakistan may lose the benefits of economies of scale. Therefore, such a privatisation strategy may not generate competitive environment needed to have an efficient electric power sector which can lead to a cheap and high quality service. Since the importance of electric power sector in social and economic development process of a country is well recognised, it is necessary to improve the performance and the environmental culture of the power sector. However, over-emphasis on privatisation has somewhat over-shadowed other possible alternatives.

We have argued that current problems stem primarily from the institutional and organisational constraints faced by public sector power enterprises. Properly restructuring the sector, and using a variety of mechanisms to encourage greater private involvement will be necessary. The issue should not be the ownership, either public or private, as implied by privatisation-based reform, but rather to find an appropriate reform package based on either a public or private or mixed ownership structure that will function well in the specific environment of Pakistan.

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