Power Sector Reform in Developing Countries and the Role of the World Bank

Paper presented at the 16th Congress of the World Energy Council, Tokyo, October 8–13, 1995

Achilles G. Adamantiades, John E. Besant-Jones, and Mangesh Hoskote
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## Abbreviations and Acronyms

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<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>BOO</td>
<td>Build, Own, and Operate</td>
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<tr>
<td>BOT</td>
<td>Build, Operate, and Transfer</td>
</tr>
<tr>
<td>CEE</td>
<td>Central and Eastern Europe</td>
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<tr>
<td>DCs</td>
<td>developing countries</td>
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<tr>
<td>DSM</td>
<td>demand-side management</td>
</tr>
<tr>
<td>EGAT</td>
<td>Electricity Generating Authority of Thailand</td>
</tr>
<tr>
<td>EIT</td>
<td>economies in transition</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FPD</td>
<td>Finance and Private Sector Development (vice presidency of the World Bank)</td>
</tr>
<tr>
<td>GDP</td>
<td>gross domestic product</td>
</tr>
<tr>
<td>GW</td>
<td>gigawatts (million kilowatts)</td>
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<tr>
<td>IBRD</td>
<td>International Bank for Reconstruction and Development</td>
</tr>
<tr>
<td>IEN</td>
<td>Industry and Energy Department (of the World Bank)</td>
</tr>
<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
</tr>
<tr>
<td>IPP</td>
<td>independent power producer</td>
</tr>
<tr>
<td>KEPCO</td>
<td>Korea Electric Power Corporation</td>
</tr>
<tr>
<td>kWh</td>
<td>kilowatt hours</td>
</tr>
<tr>
<td>MIGA</td>
<td>Multilateral Investment Guarantee Agency</td>
</tr>
<tr>
<td>MW</td>
<td>megawatt (thousand kilowatts)</td>
</tr>
<tr>
<td>OL</td>
<td>Operating Lease</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PC</td>
<td>performance contract</td>
</tr>
<tr>
<td>ROM</td>
<td>Rehabilitate, Operate, and Maintain</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
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INTRODUCTION

This paper addresses the World Bank’s rationale for the new emphasis in its assistance to the power sector of its borrowers, as it has developed in the last five years. The paper discusses the experience of the Bank with the sector and the main drivers for sector reform, the expected benefits of reform, the formulation of the Bank’s policy in this area, the principles and elements of reform, and the methodologies of bringing about reform. The key message with regard to the last point is that selection and design of the reform process and final sector structure must be adapted to each country. Hence, the country’s authorities must make judicious choices among the many power sector restructuring models and concomitant regulatory frameworks. The paper also discusses issues of implementation, lessons of experience, and the role of the Bank in the reform process.

SECTOR BACKGROUND: WHY REFORM?

Developing countries (DCs) need energy, particularly electric power, for social and economic development. However, many developing countries are unable to meet the energy demands of their economies because of the poor performance of their existing plant and the shortage of adequate investment for new facilities to meet the growth in demand.

Sector Performance

Although the World Bank’s experience has been mixed, the performance of its client countries’ electric power utilities has generally been poor to dismal. This substandard performance usually is reflected in low plant availability and productivity, poor service to customers (characterized mainly by energy shortages leading to frequent blackouts and substandard system frequency), and poor financial returns. The proximate causes of these problems are, on the physical plant level, lack of readily available spare parts; scarcity or poor quality of operating materials (lubricants, chemicals, etc.); poor maintenance practices; inadequate training of operating and maintenance personnel; and lack of investment in necessary upgrading.

On the financial side, government policies that have kept electricity tariffs well below the cost of supply, combined with weak collection efforts by utilities, have drained government budget resources instead of contributing positively. It has thus been fairly common among World Bank borrowers to request financing for new plant at the same time as they maintain existing plant availabilities of less than 50 percent.

A final problem for the power sector is on the institutional side, where governments have controlled their power utilities as if they were departments of the state and have used this control to pursue populist politics and social policies that are incompatible with commercial objectives. Governments’ inability to continue large subsidies to these utilities for operating purposes and to mobilize funding for the large investments needed for new plant to satisfy growing demand, along with the private sector’s reluctance to invest in such poor-risk ventures, are leading to further deterioration in the performance of electric utilities.

A list of significant performance indicators and the large gap between reasonable targets and reality is shown in Table 1.
### Table 1 Power Sector Performance: Gaps between Targets and Realities on Key Indicators in a Sampling of Regions and Countries

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Target</th>
<th>Reality</th>
<th>Region or country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of population served</td>
<td>90%</td>
<td>5%</td>
<td>SSA</td>
</tr>
<tr>
<td>Utility management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customers per employee</td>
<td>150–250</td>
<td>42</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>Blackouts (hrs/yr)</td>
<td>7</td>
<td>750</td>
<td>Philippines</td>
</tr>
<tr>
<td>Load factor</td>
<td>70%</td>
<td>46%</td>
<td>Nepal</td>
</tr>
<tr>
<td>System losses</td>
<td>10–12%</td>
<td>35%</td>
<td>Bangladesh</td>
</tr>
<tr>
<td>Commercial performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts receivable (days)</td>
<td>30–45</td>
<td>462</td>
<td>Nigeria</td>
</tr>
<tr>
<td>Financial performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return on assets</td>
<td>8–12%</td>
<td>−19.8%</td>
<td>India</td>
</tr>
<tr>
<td>Self-financing ratio</td>
<td>&gt;25%</td>
<td>0%</td>
<td>Jordan</td>
</tr>
</tbody>
</table>

*Note: SSA = Sub-Saharan Africa.*

### Sector Growth

Although the performance of the sector has been disappointing, electricity demand is expected to continue to grow at a high rate in the developing countries. An average growth of 6.6 percent per year was expected, compared with an actual 7 percent during the 1980s and 10 percent in the 1970s. A World Bank report (Moore and Smith 1990)—based on growth rates and system expansion plans developed, committed, or proposed by the electric utilities in DCs (usually with the approval of the government but not necessarily endorsed by the World Bank)—estimated that over the 1990s, 385 GW of generating capacity was planned in seventy developing countries, of which 45 percent would be in coal, 36 percent in hydro, and 10 percent in natural gas thermal plants. Most (63.5 percent) of this growth was expected in Asia. Such phenomenal growth would require investments of US$1 trillion, or about US$100 billion annually—more than double the actual rates DCs have been able to achieve to date, of which about 60 percent is in generation and the balance in transmission, distribution, and general investments. Again, the bulk of this investment (61 percent) would be made in Asia. The vast financial demand for investments in electricity supply in DCs has major implications for macroeconomic policies as well as for power sector financing, including the need for funds from multilateral lending institutions such as the World Bank.

Figure 1 shows historical and forecast generating capacity from 1971 to 2010 in three classes of countries—DCs, Central and Eastern Europe (CEE), and Organisation for Economic Co-Operation and Development (OECD) countries—highlighting the expected steep growth of capacity in the DCs.

![Figure 1 Net Installed Generating Plant Capacity 1971 and 1990 (Actual) and 2000 and 2010 (Projected) for Developing Countries, Central and Eastern Europe, and OECD Countries](image-url)
Need for Reform
Initially, the Bank’s work in the power sector concentrated on ameliorating the low availability of electric power in DCs by financing new power plant and transmission and distribution lines. When it became apparent that existing capital stock was far from being utilized to its fullest potential, however, the Bank began to support plant rehabilitation, which is considered generally more cost-effective than building new plant. At the same time, it also became clear that the ills of the DCs’ electric utilities have more deeply rooted causes—the economic and administrative structure of the countries. Highly centralized structures treated the utilities as departments of the government, resulting in long delays in taking decisions, strongly politicized processes that called for daily interference in the operation of the utilities, personnel policies that maximized the number of employed persons rather than the ability of the personnel to operate the system and handle problems, encouragement of vertical as well as horizontal integration that was used as cover for uneconomic but politically attractive functions, and a wrong incentive structure for utility management that failed to provide punishment for failure or reward for performance. It was, therefore, recognized that the most effective means to improve performance would be reform of the electricity sector.

In general terms, the benefits of reform are that

- Decisions are made on sound economic, financial, and environmental grounds.
- Incentives and pressures are applied to reduce operating costs and improve the efficiency of the system.
- The setting of transparent and fair prices reflects more accurately costs and tends to reduce direct and/or cross-subsidies; in addition, fair prices give the right signals to the consumers regarding consumption levels and patterns.
- The needs of the customers are the focus of service improvement efforts.

The following improvements from the reform of the electricity supply industry can be expected:

- Higher plant availability and reliability is expected and, to the extent that consumption is constrained by supply in most DCs, also higher plant factors. This would reduce power outages, which can be very costly to the country’s economy, and improve the quality of service to customers.

- Additional plant performance improvements should include greater fuel efficiency, improved safety of operations, reduction of system losses, and extended operating life of plant.

- On management aspects, the improvements include (a) improved personnel practices, including rationalization of recruitment, incentive payment structure, strict application of discipline among workers, and systematic training programs; (b) introduction of modern cost-accounting methods and financial control; (c) rationalization of purchasing and contracting for services; (d) improved spare-parts procurement and inventory policies; and (e) improved labor and customer relations.

- On the economic and financial side, restructuring is likely to rationalize costs. If prevailing tariff

2

THE OBJECTIVE AND BENEFITS OF SECTOR REFORM

The ultimate purpose of reform in the electricity sector is to enable the sector to provide improved service to customers at reasonable and fair cost in an environmentally compatible way in order to support economic and social development without burdening the state budget. These objectives should be accomplished by (a) requiring sector enterprises to operate according to commercial standards, (b) making maximum use of market mechanisms for improving the efficiency of the electricity industry, and (c) regulating transparently the monopoly elements of the industry.
levels and structure are low and nonrational, re-
structuring could lead to an increase in tariffs, as
consumers are required to pay for the operating
cost of service; in the longer term, however, re-
form is likely to increase efficiency and reduce
costs. For example, in the United States, sector
reform and increased competition during the last
twenty years have led to a dramatic decrease of
electricity prices paid to independent producers
to US¢3.5 to 4.0 per kilowatt hour (kWh) in 1995
contracts from much higher levels in the late 1970s
and 1980s.

- A rational investment program, based on sound
assessments of investment risks, would meet the
needs of electricity users. Unnecessary or very
risky investments would be minimized. A finan-
cially viable utility would be able to finance at
least part of the needed investment program and
obtain a reasonable rate of return for the invest-
ments, preferably a rate that is competitive with
risk-adjusted returns in capital markets.

- Under rational regulation, energy conservation
would become a major means of meeting present
and future system requirements. Demand-side
management (DSM) could be introduced as a flex-
ible and cost-effective tool of utility customer re-
lations with attendant economic and environmen-
tal benefits.

- A financially viable electric utility would facil-
itate resource mobilization, as local and foreign in-
vestors would be encouraged to consider invest-
ing in new projects, or it would promote the
rehabilitation and repowering of existing plant that
would be needed to satisfy the growing demand.
Acceptable rates of return would be crucial in
making such investments attractive, facilitating the
energy production needed for economic devel-
opment.

- On a national level, the need for subsidies from
the budget or cross-subsidies from other parts of
the energy sector or consumer categories would
be substantially reduced or even eliminated, thus
facilitating the process of macroeconomic stabili-
zation and adjustment.

- On the environmental front, reform allows utili-
ties to capture considerable benefits. First, higher
system efficiency requires the burning of a smaller
amount of fuel per unit of electricity produced.
Second, the removal of subsidies that governments
often provide to local fuels would promote effi-
cient resource allocation. For example, a recent
World Bank study (Larsen 1994) indicates that
such subsidies are substantial for some countries
and reach as much as 10 percent of their GDP.
Worldwide fossil fuel subsidies are in excess of
US$210 billion per year, or 20 to 25 percent of
the value of global fossil fuel consumption at world
prices. Phasing them out not only would save
scarce public resources but would reduce green-
house gas emissions by about 7 percent. Another
study (National Environmental Protection Agency
of China and others 1994), emphasizes the im-
portance of structural change for energy inten-
sity, energy demand, and the associated pollutant
emissions. The study estimates that 79 percent of
total projected energy intensity decline will result
from various forms of structural change, and only
21 percent will come from technical efficiency
gains at the project level.

The broad conclusion of the above observations
is that reforms in the electricity sector as well as broader
economic reforms can have a larger impact on the
performance of the sector than any explicit interven-
tion at the project level.

3

WHAT IS REFORM?

Power sector reform consists of a process of changes
along four different but interdependent axes: manage-
ment, ownership, structure, and regulation. The struc-
tural change begins with the realization that a mono-
lithic structure, often established as part of a centrally
planned or command economy, is too inflexible to
respond efficiently to market forces and to provide appropriate incentives for such responses. The government's functions need to be broken into (a) those that are inherent to the role of government and that the government cannot relinquish, such as the roles of setting general policy and strategy, and sector regulation and supervision; (b) those that are subsidiary to the role of government and that can be transferred, wholly or partially, to the private sector, such as ownership, operation, and management of energy facilities; and (c) those that are not core functions of the sector and that can be transferred to other sectors such as research and development and construction and manufacturing services.

The government's functions can be assumed by a ministry of energy, state energy commission, or state supervisory agency. The ownership function can be retained by the state, or it can be transferred to municipal or regional companies or the private sector. In any case, the day-to-day management of the enterprises, even if fully state-owned, should be exercised by a commercially operating entity. Finally, the third category of functions should be left to universities, research and development institutes, and independent private-sector companies.

Thus, the process of reform moves along two intertwined paths, one relating to government actions and one relating to sector and enterprise restructuring. The first path involves changes in the legal and institutional framework; the second involves the commercialization and corporatization of enterprises. It is clear that the type of regulatory framework and sector structure are closely interconnected. The precise dimensions of governmental and sectoral reform may vary, but in each case the reform effort needs to be governed by a set of clear objectives. These are to (a) increase efficiency in generation through competition, whenever possible, or through regulation based on efficient enterprises and energy use, conservation, and other measures; (b) maintain service reliability by setting strict rules to limit unreasonable interruptions of supply and variations from the technical standards (e.g., in voltage and frequency levels); (c) increase the security of supply in terms of numbers of suppliers and types of energy resources; (d) improve environmental protection by establishing clear rules in the construction and operation of energy facilities, coupled with enforcement mechanisms and the requisite penalties or incentives; (e) attract capital, domestic or foreign, by establishing clear and stable "rules of the game" that relieve the government's burden of funding the sector; and (f) develop competition in the supply of electricity services to customers, where viable, as a means of increasing the economic efficiency of the sector.

The Management Axis

The steps of enterprise reform are depicted in Figure 2. The process moves from a government department to private enterprise, and the governance and control system becomes more market driven and less subject to government intervention (Malhotra and Lamech 1994). Alternatively, reform can be undertaken in a single step to one of the later or more radical stages.

**Figure 2 Steps in Enterprise Reform**

![Diagram of enterprise reform steps]

Note: Rectangular boxes represent an entity form and ownership structure. Arrows represent reform steps.
Performance contracting. Such contracts are a mechanism for enterprise managers and the government to decide on specific duties, responsibilities, and performance obligations. In general, these contracts are used where governments continue to impose certain nonmarket constraints on enterprises—for example, price controls on inputs and outputs, staffing levels, social obligations, and so on. A performance contract is usually not a legal document in that there is no legal recourse for managers if the government abrogates the conditions in the contract (i.e., exercises its powers of “eminent domain”). Consequently, performance contracts work well only where there is reasonable clarity and stability of government objectives vis-à-vis the power enterprises.¹

Commercialization. This is the process of internal transformation to enhance the efficiency of enterprises by exposing them to commercial pricing signals and incentives. The process is particularly essential because power enterprises have to raise capital, both domestic and foreign, to finance plant upgrades and new construction. Commercialization requires, among other things, the adoption and implementation of internationally recognized accounting practices and standards that bring about transparency in cost calculation and address the issue of ownership claims (i.e., reconstructing the liabilities side of the balance sheet to reflect long-term debt and the concept of equity; separation of core and noncore businesses that clarifies social welfare responsibilities; rationalization of tariff levels and structures to ensure that subsidies, if any, are clearly accounted for; and expansion of management autonomy, especially in financial and operational decisionmaking). Commercialization requires the following steps:

- Financial restructuring (i.e., revaluation of fixed assets, debt write-down or rationalization), with subsequent recapitalizing of enterprise balance sheets.
- Reforming internal organization and leadership to decentralize management and control; developing internal control processes in the functional areas of finance, operation, and central administration.
- Redefining enterprise objectives and corporate policy to reflect commercial objectives and targets.

Corporatization. This is a process in which the corporate form of an enterprise is established; the legal status of the enterprise is established with its rights as a separate legal entity, and the rights and obligations of its owners and managers are laid down. In general, this represents a transformation to a limited liability entity with a stock-holding capital structure. Such a step presumes the existence of company law in the country and the willingness of the government to transform government entities into a corporate form.² It is usually an essential intermediate step toward partial or total divestiture of state ownership.

The Ownership Axis

Privatization. This term refers to the divestiture of ownership in a corporation through the sale of its shares to private sector owners. Privatization can range from partial (selling a minority share, less than 50 percent, to the public) to full (selling a majority stake to the public). The distinction between the two is primarily an issue of voting rights or claims to enterprise governance. Even where more than 50 percent of the common stock is sold to the public, the government could maintain a majority voting interest in the company by creating capital structures that assign greater voting rights to special classes of stock.³ Government control raises the issue of effective governance and whether efficiency gains can be obtained under such conditions. Given that shares are fungible investments that can be bought and sold at will, a perception of undue government interference with management actions could lead to an unsuccessful privatization. Conversely, successful privatization is a function of investors’ perception of the intent of the government vis-à-vis the commercialization objectives of the enterprise. It is recognition of this fact by government that will make even partial ownership by the public act as a barrier to government interference in company operations.⁴

Experience with enterprise reform in the World Bank’s borrowers has led to the following lessons:
Commercialization is the first decisive step in transforming an enterprise from a government department to a commercial entity; it will result in the fundamental separation of government and enterprise. Commercialization induces the required changes in enterprise behavior and decisionmaking, allowing it to operate like a corporate entity. Questions about the final form of corporate structure should not slow the process of commercialization.

Privatization, partial or full, takes the process of enterprise reform one step further and "locks in" commercialization and corporatization. This occurs because even partial privatization reinforces the irreversibility of enterprise reform (for a more complete discussion see Nellis 1994 and Kikeri, Nellis, and Shirley 1992).

The final corporate form and regulations should ideally not be unique to the power sector—a common commercial/corporate law for all sectors of the economy should define this legal framework.

Independent Power Producers. In recent years, a growing phenomenon has been observed—capacity additions to the system have been brought about by independent power producers (IPPs). The major impetus for this private sector entry into power has been the large investment shortfall, or financing gap, being experienced in many developing countries. The other important driving forces are the endemic inefficiencies in the construction and operation of generating plants by state-owned electricity suppliers and the demands by industrial and commercial customers for improved service. IPP projects can take different forms. Two structures are dominant, however: the Build, Own, and Operate (BOO) and Build, Operate, and Transfer (BOT) models. Variants to these models involve differences in the timing of the asset transfer, sale, and lease-back provisions, and the rehabilitation and operation of existing assets. From the host-country perspective, however, the basic concern is whether the structure has adequate incentives to ensure the necessary investor commitment and cost-effective operation. From the investor's point of view, the concern is whether the situation provides adequate stability to own a facility for perpetuity (i.e., truly unbounded equity ownership), and if not, whether a reasonable exit mechanism is provided.

Generally it is felt that that if the IPP is operating satisfactorily, no contractual commitment needs to be made to transfer the assets to the public sector at a specified future date; instead the investors will continue to own the facility. This is a natural and desirable path for the investors because an amortized asset yields a significant stream of positive cash flow to the equity holders. This arrangement also gives the structure the potential to mobilize domestic private capital. The choice of project structure is likely to be determined by the investor's long-term perception of country stability. Thus, under a stable policy outlook, an investor is likely to prefer a BOO structure, which has also the advantage for the host government of avoiding any contingent cash outflow to acquire assets. In some cases, governments may initially opt for a BOT structure under an established policy of keeping the long-term ownership of power system assets in state hands. Other project structures that have been implemented or considered are the Rehabilitate, Operate, and Maintain (ROM) and the Operating Lease (OL) models for existing plant.

To attract the entry of the private sector in power generation, the following elements are necessary: (a) government commitment to private sector participation, exemplified through an appropriate legal structure; (b) financial incentives that are deemed adequate to stimulate investor interest; (c) an agreed (and reasonable) allocation and sharing of risk; (d) clear rules for project definition, evaluation, and selection; and (e) mechanisms for conflict resolution. Government commitment to private sector participation is the fundamental requirement for success. Private investors need a clear long-term structure and credible government commitment to the reforms to be sufficiently credible. This commitment needs to be codified in law or promulgated by executive decree, and it must have parliamentary approval. Explicit government statements and legislative pronouncements have been made during the
last few years in all countries where IPPs have been implemented. Closely related to government commitment is the question of the incentive package. A sample of packages for four Asian countries is shown in Table 2. Some governments have decided to specify the entire package up front. This practice provides a degree of transparency and conveys the message that a level playing field exists for all investors. Some developers may view a well-defined incentive package as a means of reducing their project negotiation costs. Others, however, seem quite comfortable with customized arrangements with the government.

Risk sharing between the government, utility, lenders, and developers is at the heart of most reservations or debates with regard to private BOT/BOO projects. Risks can be classified as market, sovereign, project, and commercial. World Bank experience with IPPs indicates that risks fall in two main categories:

a. Risks that are transferable to the IPP:
   - Construction risk: cost overruns, delays
   - Performance risk: thermal efficiency, plant availability
   - Operation and maintenance risks

b. Risks that private sector project developers are reluctant to assume:
   - Fuel price risk
   - Fuel supply risk
   - Interest rate fluctuations
   - Foreign exchange risk
   - Market risk
   - Regulatory and tax change risk;
   - Environmental regulation change risk.

A discussion of the classes of risk, the issues arising in the various schemes of risk sharing, and the implications for project cost and price of electricity is beyond the scope of this paper. Suffice it to say that a variety of instruments exist, including guarantees by the World Bank, to mitigate the risk and enhance the willingness of the partners to assume their respective share of risk (see World Bank 1994; Ahmed and Zhu 1994).

In selecting projects, governments need a process for handling solicited or unsolicited bids. This needs to be done in a manner fostering transparency and

<table>
<thead>
<tr>
<th>Table 2 Incentive Packages for IPPs in Four Countries</th>
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<tr>
<td><strong>China</strong></td>
</tr>
<tr>
<td>☐ 5-year tax holiday</td>
</tr>
<tr>
<td>☐ Half-rate tax for 5 more years</td>
</tr>
<tr>
<td>☐ Equity return restricted to 12.5 percent</td>
</tr>
<tr>
<td><strong>India</strong></td>
</tr>
<tr>
<td>☐ 5-year tax holiday</td>
</tr>
<tr>
<td>☐ Reduced duty for capital equipment</td>
</tr>
<tr>
<td>☐ Equity return restricted to 16 percent (equity &quot;sweeteners&quot; keyed to plant-load factor)</td>
</tr>
<tr>
<td>☐ Purchaser obligations guaranteed for initial &quot;fast-track&quot; projects</td>
</tr>
<tr>
<td><strong>Pakistan</strong></td>
</tr>
<tr>
<td>☐ No corporate tax; reduced dividend tax</td>
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accountability that is achieved through a competitive bidding process and well-specified selection criteria (Cordukes 1994). Finally, prospective investors need to have confidence that conflicts, if any arise, will be resolved on a timely and fair basis (see Malhotra and Lamech 1994; Covarrubias and Maia 1994; Hoskote 1995).

The Structural Axis

Power Sector Structure. Central to the design and selection of an appropriate sector structure is the concept of a natural monopoly, which is said to exist when one (power) company can provide certain services in the power market at a lower cost than two or more companies. However, technological change and, even more importantly, innovations in regulation are placing into question the real extent of natural monopoly in the power sector.

Traditionally, the electric power industry has been divided along functional lines into three segments: generation, transmission, and distribution. However, for reasons of economy of coordination, these three functions have long remained under a single vertically integrated company in many countries. Separating these segments into distinct commercial entities is called vertical unbundling. Such separation has the potential to encourage new entries and competition in segments that are potentially competitive. For example, new entrants in power generation could compete for the right to supply power under contract. Horizontal unbundling, on the other hand, by breaking up a generation monopoly, allows new entrants to power generation to compete for the custom of power distributors and users, but at the possible loss of some economies of scale. Transmission is likely to remain a natural monopoly; and, whereas the distribution wires segment retains monopoly characteristics, alternative suppliers can and do compete for the right to supply services “over the wires.”

Although as many as ten distinct models of power structure reform can be found in the literature, most practitioners believe that four generic models are adequate to represent the available structural options. These are shown in Figure 3. It should be noted that these models should not be interpreted as rigid representations of reality but as a basis for conceptual analysis and discussion. The four models are as follows:

- **Model 1.** This is an integrated monopoly with no competing generating or distribution companies in an area. Customers buy from the monopoly company.

- **Model 2.** Distribution is separated, but generation and transmission remain integrated. Distributors have no choice of supplier from whom to buy power. This is still a full monopoly model, but it may be considered as a step toward decentralization and eventual competition.

- **Model 3.** In the purchasing agency model, competition to generate power exists, but all sales must be made to the designated purchasing agency. This agency then sells to retailers or to its own customers, who have no choice of supplier.

- **Model 4.** This involves central transmission with open access for retail sales. Competition exists in generation, with customers or retailers having a choice of supplier, possibly buying and selling through a power pool.

The above models differ in a number of aspects. The degree of vertical integration depends on the extent to which generation, transmission, and distribution are managed together or separately. The relevant criterion for restructuring decisions is the relative cost of making contracts between separate entities versus the benefits of greater production efficiency through competition, taking into account that small systems are not amenable to it. The degree of concentration or fragmentation is defined by the number of enterprises conducting the same activity within the same geographic or administrative region. The size of the market would determine the advantages of horizontal unbundling. Typically, in large or federally organized countries, such as India, China, or Brazil, a large number of local enterprises are operating. In a small country, such as Georgia or Lithuania, excessive fragmentation would add relatively large transaction costs.
Figure 3 Four Models of Power Sector Structure

Model 1. Monopoly at all Levels
No competition

Model 2. Separate Distribution
Monopoly at all levels
No competition
(some competition possible if
distribution franchises are
awarded competitively)

Model 3. Competition in Generation
Single purchasing agency
Monopoly at the retail level

Model 4. Competition in Bulk Supply
Competition at retail level for large
consumers
Local monopoly — captive retail
consumers
The countries that the World Bank serves have adopted various models of reform in their power sectors, each of which merits separate discussion and analysis. The general conclusions from the World Bank's experience in sector restructuring are as follows:

- **Generation** is the first core power activity that can be separated and made competitive. Decentralizing the sector by introducing additional players such as IPPs is the first step toward making generation a competitive activity.

- Successful implementation of structural reform requires both the hardware of technological advances in the power system and the software of workable contractual relationships.

- Separate distribution enterprises are encountered in many developing countries and may indicate a relatively easy transition to a more unbundled and competitive system.

**The Regulatory Axis**

**Power Sector Regulation.** Appropriate regulation is a corollary to the decisions for sector restructuring. As the power sector moves away from a government department toward greater operating autonomy, and as new commercial structures are introduced, including private sector participation, an explicit regulatory function becomes increasingly necessary. This section deals with a number of basic issues for economic regulation: the need for economic regulation; criteria for effective regulation; legal forms of regulation; regulatory powers and duties; and form of the regulatory body (for a more complete discussion of regulatory issues, especially as they relate to sector privatization, see Tenenbaum, Lock, and Barker 1992).

**The Need for Economic Regulation.** Market economies generally rely on the forces of competition to protect the interests of consumers and ensure that goods and services are available at reasonable prices and qualities. Competition law is widely used to overcome problems where competition is weak or absent. But in circumstances of natural monopoly, and in particular with network industries, more specialized economic regulation is desirable. Economic regulation of this type is an almost universal feature in market economies. It is clear that the need to protect consumers against natural monopolies plays an important role in economic regulation. However, if enterprises are not to be starved of resources, and if their investors are to be confident about committing funds, the interests of the enterprises also need to be safeguarded. Therefore, it is important for the regulatory framework to achieve a balance of interests between consumers, enterprises, and government. The responsibilities placed on the regulatory body need to reflect the need to ensure such a balance of interests.

**Criteria for Effective Regulation.** When considering the design of a regulatory framework, it is necessary to have in mind a number of important criteria by which it might be judged. An effective regulatory framework should exhibit the following features:

- **Stability and predictability.** Where private sector participation is an important consideration, this feature is especially important, as it enables enterprises to plan and invest with confidence. However, some provision for flexibility in the system will be needed to allow it to respond to changing market circumstances.

- **Simplicity.** Regulation is likely to be effective and inspire confidence when it is simple. This will allow it to be easily understood by all parties and may help to avoid excessive administrative costs.

- **Transparency.** The process by which regulation takes place should, as far as possible, be open to scrutiny. This will allow all parties to have more confidence in the process—it can be seen to be fair.

- **Continuity.** New regulatory arrangements will be more acceptable and more easily implementable if they display continuity with existing practices.

- **Best practice.** Any regulatory regime must, of course, reflect domestic requirements and practices. How-
ever, systems that can be seen to be operating satisfactorily elsewhere will be more acceptable than system that are new and untried.

- **Promotion of efficiency.** Regulation can have significant effects, both positive and negative, on the incentives for enterprises to operate efficiently. Given the normal background to regulation—that is, monopoly and absence of market pressures—it is important for the regulatory system to encourage efficient operation as far as possible.

- **Allowing managerial independence.** As far as possible, enterprise managers should be given adequate independence to run the enterprises within the regulatory regime.

- **Based on incentives rather than instructions.** The essence of a regulatory regime is to ensure that the enterprises behave in the public interest, against their own tendencies if left unregulated. Although compliance might be achieved by means of instructions, success is more likely if it can be provided through incentives.

**The Legal Form of Regulation.** The prevalent view at the World Bank is that separate specialized legal provisions should be made for energy regulation to provide the right degree of stability, transparency, and enforceability. Consideration then needs to be given to the design of the necessary legal instruments, including licences, and to the questions of enforcement and appeal procedures.

Overall regulatory control can be conferred by means of a fundamental or primary law that clearly sets out the basic framework of regulatory powers and duties. This framework law should then be supplemented by secondary legislation, where necessary, to give legal force to more detailed provisions such as procedures and rules; and to licences or authorizations that are obligatory for all enterprises in the regulated sector; these licences would contain specific regulatory conditions under which enterprises are to operate. The primary law should define clearly under what circumstances secondary legislation may be used, and who is responsible for preparing and enacting secondary laws and licences. The primary laws are the most difficult of these instruments to amend, and thus provide stability. Degrees and ordinances are easier to amend and thus to provide the flexibility needed to respond to changes in market circumstances. It is also important that the law give adequate consideration to enforcement measures. Such measures must be sufficient to ensure compliance while recognizing the limitations imposed by the need to ensure continuous operation of key energy sectors. The law should also make at least some provision for appeal against regulatory decisions.

**Regulatory Powers and Duties.** The underlying philosophy of regulation is based on balancing the powers and duties or the rights and responsibilities between enterprises and the regulator. For sectors characterized by natural monopoly, enterprises are given valuable commercial rights when they are allowed to operate in the sectors. In return, they may be required to accept certain obligations or duties—for example, controls on prices, efficiency obligations, obligations to supply, and quality standards. This trade-off of rights and duties is termed the regulatory bargain.

In much the same way, the regulatory body is granted significant powers over consumers and enterprises, but is itself constrained by the imposition of duties. These may include the duties to promote the development of industries, to allow the enterprises to be financially viable, and to protect consumers.

In designing the regulatory framework, decisions about the duties to be placed on the regulator are of particular significance. Certain general duties, such as protecting consumers and allowing the financial viability of the enterprises, are clear and necessary. But the treatment of two other duties needs more careful consideration and raises important questions of regulatory policy. In particular, it may be important to consider whether the following should be included as duties of the regulator:

- **Promoting competition.** The extent to which this will be an appropriate regulatory duty will depend on
how much restructuring of the supply industry has to be accomplished to achieve competitive conditions, since regulation has limited force to change market structures.

- **Implementing government energy policy.** The government may want to implement objectives of energy policy (such as fuel policy and protection of low-income users) through the regulator. Giving the regulator discretion in such matters of policy may well confuse the role of ownership and policymaking for the sector with the role of regulation. Nevertheless, the regulator may be required to take account of government policy or to implement particular arrangements decided by government.

**The Form of the Regulatory Body.** Two significant points are relevant in deciding the form of the regulatory body: (a) the extent of independence of the regulatory body—in particular its autonomy in its procedures from interference by executive departments; and (b) the scope for delegating regulatory functions to lower levels, such as municipalities. Three principal options can be identified:

- **Regulation by the government energy ministry.** This option offers no significant degree of independence where energy enterprises are government-owned. Where the enterprises are privately owned, the value of this option will be dependent on private-sector perceptions of government. In countries where private sector confidence in government is high, this form of regulation works successfully, but in others it produces little confidence in prospective private investors. The advantage of this option is that it allows governments to maintain tight control of the industry and enables close integration of economic regulation and other energy policy measures. The disadvantage is all the performance weaknesses noted in the paragraphs on sector performance and growth at the outset of this paper.

- **Regulation by interministerial commission.** This option involves a commission, established by legislation and with wide representation across ministries. It is given formal responsibility for all aspects of regulation of the relevant sector or sectors. The existence and powers of the commission are quite separate from the ministry or committee dealing with energy policy and ownership of energy enterprises. This option has the advantage of offering some degree of independence from the ministry directly responsible for the energy industry and in thus allowing a wider range of opinions to be taken into account in reaching decisions. However, government views may still tend to dominate decisions, and so this option may still result in low investor confidence and poor managerial incentives in state-owned enterprises. The extent of independence will in fact depend on the range of interests represented in the membership (in particular whether there are nonministerial members) and how appointments are made.

- **Regulation by an independent body.** Although differing forms of independent regulation are now well established in both the United Kingdom and the United States, few examples of such regulation can be found elsewhere, even in market economies. The form is capable of commanding wide confidence if the body is suitably led and staffed. From the government's perspective, it can result in a significant loss of direct control over the affairs of the energy industry. In some circumstances, where traditions of professional and impartial public service are not well established, this option could raise significant questions of whether a genuinely independent body could be established.

It is usually assumed that regulation will operate at the national level. However, regulation at regional or local level may sometimes be more appropriate. It is possible to argue for local regulation of distribution activities, since local regulation may be more responsive to local needs. Delegation of this sort may, however, be difficult or impractical. For example, it places considerable demands on the expertise of local officials in many different areas.
Matching Sector Restructuring and Regulatory Reform. Since the sector restructuring and regulatory processes must follow closely allied paths, each of the sector restructuring models requires a different regulatory approach. Models 1 and 2 require price regulation through either a "price cap" or a "rate of return" basis. To simulate market incentives under these models, some elements of performance benchmarking of generation entities and distribution enterprises can be used. On the other hand, models 3 and 4 require a more complex form of market regulation, as the market is potentially competitive on its own but oversight is required to ensure that the players do not practice collusion or monopolistic behavior. Few of the World Bank's borrowers currently possess the skills and capacity to provide such regulatory oversight. In this light, the training and sophistication of the regulatory agency becomes important. The choice of regulatory model, although driven by the choice of sector structure, also depends greatly on the institutional capacity of the country to implement it (Besant-Jones 1993).

Experience with Regulation. In most countries regulation is currently the responsibility of government departments, ministries, or authorities/commissions. The relevant issue is therefore how to insulate the regulatory agency from arbitrary government interference in its decisionmaking. An example is offered by the Indian Electricity Supply Act, which clearly specifies a level of return on assets that all power sector entities are supposed to enjoy. However, the state-owned entities neither achieve this minimum standard of return on their own nor have any legal recourse to obtain it. On the other hand, private operators in India have been able to achieve this return or at least to claim it. This highlights the importance of separating government from enterprise operations. In Malaysia, the power sector was commercialized and partially privatized, and a regulator was appointed under the revisions to the Electricity Supply Act. However, the regulator has thus far been unable to define sectoral performance benchmarks or the modalities for private power purchase. These decisions are still implicitly made by the Minister for Energy, to whom the regulator reports, and by the Economic Planning Unit of the Prime Minister's Office.

Case histories from introduction of regulation are still scant, but experience to date suggests the following conclusions:

- **Regulation is a vital mechanism for sector reform.** It specifies the modalities for transactional relationships between the various power entities and should be one of the first steps in sector reform. The government must first decide the direction of reform regarding ownership, enterprise governance and management, and sector structure. The regulatory mechanism and agency should then be designed to fit the parameters of the sector and set up initially to underpin changes to structure and ownership.

- **An independent regulatory agency is indispensable in the long term.** Instituting some form of credible arms'-length regulation, even if performed by the government, has benefits that outweigh reliance on intrusive oversight.

- **Inducing commercial enterprise operations acts as a driver for a more certain regulatory environment.**

Overall World Bank Experience with Sector Reform

Although experience to date is not adequate for firm conclusions, the Bank has conducted reviews of the reform process in several countries including sector reviews of several countries and two reports that attempted to summarize the overall experience in Asia (Malhotra and Lamech 1994) and Latin America and Caribbean (Covarrubias and Maia 1994).

In Figure 4, trends in power sector reform in six Latin American and Caribbean countries (Argentina, Chile, Colombia, Costa Rica, Jamaica, and Peru) are compared with similar trajectories of reforms in three developed countries (Norway, the United Kingdom, and the United States). The trends show that in most developing countries of the group, introduction of pri-
power sector activity is increasing from insignificant or low levels to between 60 and 100 percent, and vertical integration is diminishing drastically. In the United States, where most power has been in private hands for a long time, vertical integration has decreased, and penetration by IPPs has increased. In Norway, the private sector has not made inroads, but vertical integration has virtually disappeared.

Experience with power sector reform shows that four developments commonly occur. First, retail prices change, usually upward for subsidized uses with the removal or reduction of cross-subsidies. This change is a feature of commercialization under competitive pressure. Second, transmission capacity is expanded when unbundling from generation exposes bottlenecks in the network. This shows that investment in transmission capacity is usually too low relative to that in generation capacity in a vertically integrated structure and that more transmission capacity is needed to support competition in the bulk power market.

Third, the scope is unexpectedly large for improving efficiency at all levels in the power supply chain; managements of suppliers are loath to reveal or admit the true efficiency potentials, and regulators have little chance of discovering the potentials from information available to them. Only market pressures—particularly from capital markets—force these potentials into public view. Finally, reform is a multi-stage process that will likely require time for adjustments to the regulations and structure that have been instituted in the initial stage.

On the basis of the above comments, in several cases it is observed that the introduction of competition into the market is the predominant consideration of the national authorities. Competition can be introduced at either the generation or the power retail level. In most cases, the former is the more obvious and perhaps easier way of encouraging competition, and therefore it is observed in a large number of countries. Until now, it has been rather rare to observe competition at both the generation and retail levels.

A qualitative view of the degree of competition in a number of developing and developed countries is shown in Figure 5.
4

HOW TO REFORM

Structural reform is a continuum involving many potential paths and destinations. Rather than an end in itself, reform should be viewed as a process that must be kept flexible and adaptable in order to improve sector efficiency and financial independence. This section discusses the need for a broader context of economic reform, the criteria for selecting sector structure and regulatory framework, the sequencing of reform actions, and the critical factors that will determine the success of the process.

Dependence on Broader Economic Reform
Public enterprise reform in developing countries relies heavily on supporting market reforms. It is for this reason that power sector reform must be closely aligned with broader institutional strengthening. For example, labor redundancy and rationalization of employee welfare benefits are the principal impediments to faster commercialization in many developing economies. In most cases, labor unions are averse to change for the same reason. In China and India, major restructuring of enterprises will be difficult until the state finds ways of dealing with surplus labor and until a means is found to transfer substantial pension and welfare liabilities off the balance sheets of these entities. Clearly, these mechanisms cannot be developed solely for power enterprise restructuring—they must be developed in the broader context of public enterprise reform.

Criteria for Sector Structure and Regulatory Framework
The primary determinants of both the modalities and destination of sector reform will be the local conditions of the sector and the economy. The most important among them are the existing energy resources and markets, the degree of competition that is possible or desirable, the extent of decentralization that exists or is reasonable to expect given the country's size and prevalent traditions, and the levels of work force skills and other local technical and institutional capabilities. Other factors affecting the selection may be the success or failure of similar efforts at reform in the region and public attitudes. A success story "next door" will be a powerful boost to reform in the country, since it is difficult to "argue with success."

Sequencing of Reform
The sequencing of the three main reform components—restructuring, regulation, and privatization—is a crucial issue for the design of a reform program. In principle, this sequence must be determined by the
Table 3 Sequencing of Reforms

| regulate | restructure | privatize | (UK, Chile, Peru, Bolivia, Pakistan) |
| restructure | regulate | privatize | (Ukraine, India-Orissa, Nicaragua) |
| restructure | privatize | regulate | (Poland) |
| restructure/privatize | regulate | privatize (complete) | (Argentina) |
| regulate | restructure | private projects | (Colombia, Portugal) |
| regulate | privatize (part) | private projects | (Malaysia, Trinidad) |
| regulate | private projects | (Morocco, Algeria, Philippines, Trinidad, Jamaica) |


circumstances of a country and its power sector. In other words, no theoretical basis exists for putting forward a universally applicable approach. Consequently, many permutations of these components have been or are being tried around the world, as shown in Table 3.

Two lessons about sequencing stand out from the experience to date. First, major restructuring should be done before privatization, while assets remain in the state hands, since privatization creates ownership rights that would be entitled to compensation for significant change to the power market from the conditions incorporated in a sales prospectus. Second, competition in the power market should be introduced through restructuring and privatization (or entry of private competitors) rather than attempted through regulatory pressures. This is so because existing suppliers can resist regulatory pressures strongly to frustrate radical changes. The events in the bulk power market of England and Wales during the last five years illustrate the second point well.

One way to assess the relative merits of the various reform sequences is to compare the success of reform programs in various countries, keeping in mind that experience to date is limited. It appears that the most successful reforms have occurred in countries that established their regulatory frameworks first, then restructured their sectors, and subsequently privatized state-owned power suppliers. Where countries are following the IPP route, as in Asia, again the successful reforms are those in which setting up a sound regulatory framework precedes the contractual process for private power supply. Although hardly any global experience with privatization of power distribution entities can be cited, it is likely that the same lesson applies in this case as well—that the regulatory framework should be established before distribution franchises or divestitures take place.

Critical Factors
The reform process will be affected by a number of critical factors. Experience shows that a sense of urgency on the part of all those involved in the process is paramount to maintaining momentum. A firm commitment of the government is necessary to overcome the often overwhelming obstacles of vested interests, mental myopia, ideological sclerosis, or plain inertia. Without such government commitment—exemplified in sustained action rather than pronouncement—
it is difficult to establish the necessary credibility in the process and have a good chance of success. Finally, a public information campaign would be useful in highlighting the benefits of reform compared with prevailing conditions. If successful, such a campaign would generate support from critical constituencies and ensure the public consent that is necessary for major change in a democratic society.

5

The Role of the World Bank

Recognizing the importance of the power sector in its client countries and taking into account its experience, the Bank's Board of Directors approved, in November 1992, a set of policy guidelines for Bank assistance to the sector. These were outlined in two Bank Board papers (World Bank 1993a, 1993b).

New Policy Guidelines

The new guidelines reflect a significant shift in the institution's modality of financial support for the development of the power sector and a decided departure from "business-as-usual" practices. The guidelines require the Bank to apply commitment lending—that is, lending conditioned on the client government's demonstrated commitment to reforming the power sector. The policy papers also enunciate the six basic principles that are to guide the Bank's assistance work in the sector:

- Transparent regulation
- Commercialization and corporatization
- Private sector participation
- Importation of services
- Market pricing
- Demand-side management.

Based on this policy guidance, the Bank has increased its attention to the interrelated institutional, regulatory, and financial reform issues that are considered essential for the improvement of the sector's performance and for meeting the challenges of the future. The new guidelines require an explicit country commitment and actual movement toward (a) establishing an appropriate legal framework for private investment and competition that includes regulatory arrangements; (b) improving operational and end-use efficiency by procuring external services where necessary; (c) aggressively pursuing commercialization and corporatization of state-owned power companies, including contracting out of services to the private sector; and (d) allowing the pricing of electricity on market principles. The Bank is shifting the focus of its lending program toward the countries that are exhibiting clear commitment toward sector reform in line with the above principles.

The Bank has helped governments to initiate such sector reforms in many developing countries as well as in those with economies in transition (EIT) as are the countries in Central and Eastern Europe (CEE). Much of this help is in the process of implementation, and definitive results are not available. However, indications to date are encouraging. As a result, the global movement toward sector reform is gaining momentum. In assisting its borrowers to reform their power sectors, the Bank plays a dual role: a nonfinancial and a financial one.

The World Bank's Nonfinancial Role

This role is that of an impartial and credible policy arbiter. It is also that of provider of technical assistance and policy advice, when requested by the borrower, for sector reform and development of regulatory capacity. Of substantial value to borrowing governments is also the Bank's unique cross-country experience in implementing programs for sector development. The World Bank thus plays an important role with respect to both sides of the table: it helps represent the views of the international investment community to potential borrowers, and it assists governments in understanding and managing noncommercial and regulatory risks. By catalyzing and assisting in sector reform, the Bank helps create an "enabling environment" that is conducive to private investment,
thus leveraging its own investment funds and leading to the ultimate “graduation” of the country from World Bank lending.

At times, the World Bank is able to facilitate commercialization and corporatization of power sector entities by linking its support for financial sector reform to power sector financing needs. For the government, this means subjecting the utilities to corporate legislation and then clarifying their ownership and legal status. In this connection, the World Bank encourages its borrowers to consider establishing shareholder companies for power utilities.

The World Bank's Financial Role
As a lending institution, the World Bank plays its financial role in three forms:

- Lending to state-owned enterprises, subject to progress on the policy front
- Adjustment lending with policy conditions on tranche release
- Providing guarantees to commercial lenders for public and private sector projects through the new World Bank Guarantee Facility.

The first two forms of lending are typically the core lending roles of the World Bank. The larger portion of lending is conducted by the International Bank for Reconstruction and Development (IBRD), the largest member of the World Bank Group. The IBRD’s charter requires it to lend funds either directly to the government or to a public enterprise with government guarantee. Lending to private enterprises, as well as equity financing, has been the domain of the International Finance Corporation (IFC), also a member of the World Bank Group, lending about one-fifth of the total World Bank business volume per year. Lending to private enterprises by the IBRD can take place through an on-lending arrangement (from the government to the enterprise). It is predicated on (a) creation of an enabling environment, thereby reducing real and perceived investor risk; (b) continued support to critical long-term sector reform, especially in the areas of regulation and competition; and (c) facilitation of access to international capital markets.

The third form of financial intervention, through the World Bank’s Guarantee Facility, is relatively new. The World Bank’s guarantee operations currently cover loans totaling about US$1 billion. The World Bank’s guarantee operations must be consistent with its assistance strategy for the country and are thus part of the broader dialogue and relationship the World Bank has with its borrowers.

NOTES

1. Performance contracts (PCs) have been used successfully in the case of the Korea Electric Power Corporation (KEPCO). There is also evidence of PCs working well in the case of the Electricity Generating Authority of Thailand (EGAT). Performance contracting has also been used widely in the Chinese power sector for defining generation tariffs and taxation and profit levels.

2. The power authorities in Indonesia, Pakistan, and Thailand are government commissions/authorities, and although legislation to affect a commercial and corporate transformation exists in these countries, these changes have yet to be fully implemented. India and China have a few entities that are commercialized and have a corporate structure, but these are in some sense enclaves that operate under specific charters and were newly created to avoid the ownership and management problems in existing sector entities.

3. For example, in Malaysia, the government holds a “golden share” that gives it the right to veto majority shareholder decisions. Even if 100 percent of the shares were sold to the public, the government could continue to maintain veto powers over shareholder decisions.

4. Malaysia is one country that has successfully undertaken this transformation route. It first commercialized its national power entity, which was previously a commission/authority. It then proceeded to corporatization and partial privatization, which was based on the sale of 22 percent only of the company’s common stock.

5. India uses a codified cost-plus regulatory model. Indonesia and China have effectively adopted a rate-of-return approach; the Philippines is considering a price cap model. Malaysia has not defined a price cap model, although its use was decided at the time of sector commercialization.
6. A partial list of countries in which the World Bank is actively engaged in sector reform includes, in Africa: Guinea, Kenya, Mali, and Tanzania; in Asia: Bangladesh, Cambodia, China, India, Indonesia, Pakistan, the Philippines, and Vietnam; in Europe and Central Asia: Lithuania, Poland, Romania, and Ukraine; in the Middle East and North Africa: Egypt, Jordan, and Morocco; and in Latin America and the Caribbean: Bolivia, the Dominican Republic, Jamaica, and Peru.

7. In addition to the IBRD and IFC, the World Bank Group encompasses the Multilateral Investment Guarantee Agency (MIGA) and its soft-loan affiliate, the International Development Association (IDA).

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Power Sector Reform and the Role of the World Bank


57 Unpublished.


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