PUBLIC POLICY FOR THE

Privatesector

The World Bank June 1996

Note No. 83

The Dynamics of Independent Power

IPPs seed top-to-bottom reform

Elliot Roseman and Anil Malhotra

The desirability of government ownership of power generation has increasingly been called into question, particularly in the past five years. Around the globe, many incumbent power companies have offered independent power producers (IPPs) the opportunity to tender for new or existing generation. Outside the United States and Canada, there are now more than 600,000 megawatts (MW) either on line or under development in more than 1,500 project initiatives. In the Philippines, for example, private developers have, just in the past two years, brought on stream 1,200 MW of the 8,000 MW in place, for sale of power to the national utility, and are developing more than 6,500 MW of additional capacity. In Australia, several existing plants owned by provincial utilities have been auctioned off to IPP bidders, and other developers have won the right to develop new plants for sale of power to these utilities. In Argentina and the United Kingdom combined, well over 12,000 MW of government-owned hydro and fossil fuel–based generating capacity have been sold, largely to private developers from Chile, France, the United Kingdom, and the United States. In the United States, which has allowed private developers to own new generation since 1978, about 7 percent of existing capacity—nearly 60,000 MW—is owned by IPPs.

The reasons supporting the introduction of IPPs (outside the United States) into government-owned utilities are legion: reducing public spending, expanding capacity, improving reliability, introducing foreign capital, introducing competition, transferring technology, responding to pressure from large consumers seeking more cost-effective alternatives, and so on. Less recognized is what may be an unintended consequence of the introduction of IPPs: they plant the seeds for a top-to-bottom change in the structure and operation of the government-owned utility—seeds that are hard to stop from growing once they take root. Other vehicles for private sector entry that are gaining in popularity include privatizing management and leasing and franchising utility operations. From modest beginnings, IPPs and these other mechanisms can lay the groundwork for an upheaval ending in private ownership of much of the generation, transmission, and distribution sectors of utilities.

Such top-to-bottom restructuring is now under way in a number of countries, some of which were among the first to use IPPs, including Argentina, Australia, Bolivia, New Zealand, the United Kingdom, and the United States. In the United States, restructuring is well under way even though most generation was not government owned when IPPs were introduced.

The process of change

At first sight, IPPs seem innocuous and desirable in reasonable doses. Properly done, they generally are. But during their development, they raise nagging questions about the efficiency and competitiveness of the integrated, government-owned utility and the means by which it is regulated. Once IPPs are introduced into the mix, these questions tend to ferment, leading the more progressive forces within and outside the country to seek answers, explore alternatives, and set about to change the existing industry's structure. The phasing of the restructuring process revolves around three main sets of questions that IPPs raise—about whether the existing utility is efficient in generation and what the proper level of prices should be, about

the regulatory framework, and about the structure of the entire industry.

The pace of these phases, their overlap, the resistance they meet, and their outcomes differ from country to country, depending on the initial structure of the industry and the relative strength of the stakeholders. Regardless of the country, however, the questions *do* get asked, and the very asking leads to incremental—and sometimes wholesale—change.

Phase 1: Generation and project development

Assume, for example, that an IPP is introduced, through negotiation, into a national, government-owned, vertically integrated utility that is largely or wholly unregulated. If this IPP represents a substantial amount of capacity (a small, inside-the-fence cogeneration plant, for example, might not be noticed), it will raise a set of issues relating to developing, constructing, financing, operating, and maintaining a generation unit that is not part of the government-owned utility system. This is a plant that can allow more foreign control in the power industry than ever before, and that takes much of the decisionmaking for a power plant out of the utility's hands. And it raises questions that not only require negotiation with the IPP, but also reveal underlying issues about how IPPs compare with the utility, how the process of adding generation capacity should be changed, and whether there are inadequacies in the current utility system.

- **Does the IPP deliver power at a lower price than the utility?** If the costs of production are not broken out and tariffs are highly subsidized, as is true in many countries, how can the country know? Underlying questions: At what price should the utility buy power? Should retail rates be restructured?
- **Is the way the IPP was selected—through negotiation—the best way?** Underlying question: Should there be a competitive bidding process that gives IPPs the right to compete for all future generation?
- **Can the power generated by the IPP be smoothly integrated into the transmission system?** Underlying question: Is the government-owned utility's transmission system adequate and well planned?
- **Did the regulatory, permitting, and political approval process work well for the IPP?** Underlying question: What decisionmaking and approval process for procuring capacity should be in place for the long haul?
- **Was the IPP's contract financeable—given the guarantees, if any, that the utility provided—and did it bring in new capital?** Underlying questions: Is the utility creditworthy? Does the country need model contracts? Do IPPs really leverage domestic capital? Will guarantees be required in the long term?
- **Was the project financed using primarily foreign capital and multilateral loans?** Underlying question: Can the country improve its domestic capital market? A number of countries are trying to determine how to emulate Malaysia's success in raising all the debt and equity capital domestically for its 1,300-MW Lumut project.
- **Was the IPP efficient in construction, and does it operate efficiently?** Underlying questions: Should the utility modify the operation of its existing generation? Should the government consider private sector operation while retaining ownership, or set up incentives for the utility to be more efficient? Does the country have the capability to produce the equipment for its own modern power plants?
- **How should the IPP procure fuel—on the open market or from a state-owned monopoly? Which is most efficient for the IPP?** Underlying question: Is the way the government oversees fuel procurement for all power stations efficient and conducive to private sector investment?
- **Was the IPP developed by a company from an industrial country?** Underlying question: Are there local firms that could do the job just as well, keeping the revenues in the country, or that could establish a regional presence? The initial wave of IPP projects were carried out by developers from such countries as the United Kingdom, the United States, and other Western countries, but current IPP projects include many with strong

lead participation from companies headquartered in such countries as China, India, Malaysia, and Thailand.

The IPP negotiation process can reveal weaknesses in the government-owned utility system—including in the way power plants are authorized, financed, granted permits, constructed, operated, and priced. The first IPPs can plant the seeds of change, as one question leads to another. Even an initial failure with IPPs does not necessarily lead to a reactionary return to the traditional government-owned utility. In the Philippines, for example, the failure of contract negotiations with a U.S. developer in the early 1990s forced questions about why the process did not work, and made it easier to consider IPPs when the country was in the midst of a power crisis in 1992.

Phase 2: The regulatory framework

In many countries, government-owned utilities are largely self-regulating monopolies. No independent regulator charged with protecting the public interest reviews their rates, and the utility itself oversees the quality of service. There is little input by public interest groups or others into decisions affecting tariffs or service. Financing comes from the public treasury or, for the more efficient utilities, from internally generated cash, not from capital markets. After one IPP has come to financial closure, country officials may be tempted to put off any changes in regulatory structures and financing arrangements until they see what happens. But at this point, the underlying questions become explicit.

- Shouldn't there be a permanent, independent regulator with sufficient authority to ensure that the utility delivers the best service the public has the right to expect? Should this regulator oversee both wholesale and retail prices?
- Rather than an ad hoc IPP negotiating team, shouldn't there be a standing, transparent approval process?
- What should the country's import and foreign exchange policies with respect to power generation be?
- Should generation, transmission, and distribution be regulated differently, depending on whether they are natural monopolies?
- Shouldn't the country standardize the provisions relating to country and commercial risk in its contracts with IPPs?
- What is the best bidding and approval process for IPPs? How should it be implemented? Should prices paid to IPPs be determined through bidding, or through some other method?
- Should foreign developers be required to work with local firms?

Phase 3: The structure of the industry

By the third phase, the introduction of IPPs has already affected the generation and regulatory framework, and the entire structure of the power industry is at stake. The overriding goal shifts to creating a competitive framework. The key questions become:

- Should *all* new generation be allocated to IPPs?
- Should the government utility continue to own existing generation, or sell it?
- Should there be a power pool into which all generation, by both IPPs and the utility, would be sold? How would this pool be administered?
- Can the country allow private sector ownership of transmission and distribution? Should parties be allowed to own shares in more than one sector of the industry?
- Should power generators be able to sell only to the utility and at wholesale? Should direct contracting between power users and suppliers be allowed?
- How should utilities streamline their operations to remain competitive, and should they diversify into related businesses (for example, third-party plant operation, or real estate)?
- How can the country provide equal access to the transmission system to private parties, yet still provide incentives to build new transmission when and where it is needed?
- How must the regulatory framework adapt to the new industry structure?

Phase 4: Competitive markets

In the final stage, the government-owned utility starts to operate more like a private sector firm, with regulatory controls in place to guard against business abuses and for oversight of the sectors that remain natural monopolies. Utility monopolies are broken up or prepared for sale, and regulatory frameworks are reformed. Some countries, most of them among the first to use IPPs, are at this stage.

- In the United Kingdom, distribution companies have been opened to private ownership. A power pool with open access to transmission has been set up. Existing generation has been sold to break up generating monopolies. And a new regulator was set up with sweeping powers to oversee the industry.
- In Argentina, existing generation, transmission, and distribution companies have been auctioned to the highest qualified bidders. Federal and provincial regulators oversee the setting of prices. End users can negotiate freely with power generators for supply.
- In Bolivia, all sectors of the formerly public power industry are being sold, building on the examples of Argentina and Chile. Colombia may soon follow suit.
- In Indonesia and the Philippines, private firms have successfully bid to develop and finance new plants. The breakup of the government-owned monopoly is scheduled to take place in the near future. Other reforms are being implemented, such as open access to transmission for private parties.
- In the United States, some utilities (for example, Consolidated Edison) have begun to sell existing generation. The Federal Energy Regulatory Commission (FERC) is promoting an agenda of open access to transmission, and a number of states and utilities are considering restructuring the industry to set up power pools, separate generation from other functions, and provide better customer service.

Winners and losers

Once this process of change has begun, it is hard to stop. Its spread depends largely on how powerful those who benefit from the current system are compared with those who stand to benefit from the new one. Who can expect to win under the new system? Consumers can be big winners if reliability increases and prices fall. But whether tariffs can be lowered depends on the subsidies built into rates and on how much utilities can improve their operations and pass on the savings. Politicians can position themselves to win if they support change as a way to make power cheaper and more reliable. Others may "win" by being initially opposed to IPPs and utility restructuring, or by driving a hard bargain. IPP developers win if their contract and the industry's new structure allow them to earn adequate returns at acceptable levels of risk. Commercial banks and foreign fuel and equipment suppliers are also usually winners.

Utility distribution companies are potential losers. Jobs and control by existing managers may be at risk from private ownership—though in the longer term the distribution entities and their employees should benefit if their ability to serve customers improves. Utility procurement officers could also lose influence. Still others could be winners or losers depending on how things play out. Ministry officials may gain new IPP review responsibilities in the short term, but in the medium term they could lose control to newly created regulators. Local workers and suppliers can learn new skills from IPPs, or they may lose out on business until new manufacturing capabilities are set up. And multilateral institutions, with fewer loans needed to build power plants, may have to redirect their focus.

The benefits of restructuring may sometimes be hard to prove and to quantify, and there is a risk of backlash against IPPs and industry reform if improvements are not realized and recognized. But there is nevertheless no return to the old system.

This Note is an abbreviated version of an article that appeared in *Electricity Journal* [9 (2): 21–27, March 1996].

Elliot Roseman, Resource Management International, Washington, D.C., and Anil Malhotra, Regional Energy Adviser, Asia Technical Department