

# Lessons in Liberalisation



Photo: Bloomberg

The characteristics of the United States' restructuring of its power sector may be different from the restructuring in Asia. But there are lessons to be learned. **Robert W. Gee**, President of energy and utilities consulting firm, Gee Strategies Group, looks at some pointers that China, India and the Philippines can pick up from the US experience.

The governments of China, the Philippines, and India have each made critical decisions to deregulate and ultimately privatise much of the assets currently owned and operated by their state-owned electric enterprises. Because the United States' restructuring experience has not involved such a dramatic asset-ownership conversion, focusing instead on achieving operational efficiencies, its recent history may be deemed limited for drawing any insights. Despite this

noteworthy difference, some important lessons can be gleaned, providing guidance to decision makers in these three countries that are becoming increasingly important to the global economy.

## Overview

### China

China is experiencing a surge in demand for electricity, a trend that shows no abatement in the foreseeable future. Consumption ratcheted

up at 15% last year, and is anticipated to increase an average of 4.3% annually through 2025. From a fuel resource standpoint, demand is expected to be met by increased coal use, but natural gas is expected to provide a larger resource share. Foreign direct investment is currently allowed only for power generation, but loan financing has been obtained for some transmission projects. Because China plans to develop a competitive power market eventually, steps are being taken to open up the generation market to private investments.

Specifically, the State Council approved the Plan for the Reform of the Electric Power System, calling for: (1) the privatisation of the State Power Corporation's generation assets into the five national generation companies; (2) the formation of two grid corporations; (3) the establishment of four auxiliary groups for construction, maintenance and design; and (4) the creation of a power pool to promote competition. Electricity prices will remain regulated (for the time being), and the regulatory process and tariffs are expected to be dramatically overhauled. Many details remain unresolved.

### **The Philippines**

Like China, the Philippines' electric power needs are expected to grow in the foreseeable future, at a rate estimated at 9% annually through the decade. Looking to the private sector to meet these considerable needs, the government made a significant stride toward sector reform when it enacted the Electric Power Industry Reform Act of 2001. The Reform Act calls for the unbundling of transmission from generation and distribution, and transmission ultimately privatised and operated by an independent National Transmission Corporation (TransCo). The Act also provides for the division of generation assets currently owned by the state-owned utility, National Power Corporation, into separate generating companies (or *gencos*) and sold to private bidders. The government's aim is to establish a structure whereby private generators would sell to privatised distribution companies, with transmission access provided on a non-discriminatory basis.

### **India**

Although originally at the vanguard of developing

countries privatising its power generation assets through encouragement of independent power projects, India has suffered most recently from a lack of investor confidence owing to the government's failure to enforce bellwether power purchase agreements and the financial problems of its State Electricity Boards (SEBs). Because of this setback, the government enacted legislation aimed at revitalising the sector. The Electricity Act of 2003 is designed to remedy many of these problems, and to attract capital to large-scale power generation projects. The Act calls for unbundling SEBs assets into generation, transmission, and distribution companies, and the eventual privatisation of these assets. Access to the SEBs transmission grids is to be opened up, allowing power producers to sell directly to large industrial consumers.

### **The US Experience**

The US electric power industry has seen dramatic changes over the last decade since efforts to liberalise its markets first began. What had been principally a localised service provided by an integrated, monopoly enterprise has evolved, in many parts of the country, into a more competitive business spanning a much broader geographic reach. Services have been unbundled, with substantial generation now priced on the basis of the spot market, and the distribution sector is faced with the challenge of recasting its role in the provision of service. Owner/operators of the transmission grid are also re-evaluating their businesses to discern the optimal deployment of these assets. These events have infused the industry with a need for closer management, financial discipline, and a keener sense of business opportunity. Many of these changes have made utilities more efficient. Customers have benefited from utility operational efficiencies, and retail competition has introduced heightened attention to customer needs.

However, much of this transformation remains unfinished. Although generation is still being sold in a competitive wholesale market, the merchant power sector has been seriously damaged, and liquidity has been severely eroded by the collapse of the power trading business, following the Enron debacle and the California power crisis. Balance sheets have been further

debilitated by overbuilding in certain markets, resulting in a near-term generation glut. Although 24 states opted to open their markets to retail competition, it is widely anticipated that no others will pursue that course, fearful of exposing their customers to an uncertain future of spiking prices and inadequate supply.

Although power markets have now clearly assumed a decidedly regional character, regional independent transmission system oversight and spot market coordination remain a work-in-progress. Some states have successfully adopted a nodal transmission pricing schemes to enable market participants to receive proper price signals reflecting locational congestion, such as in the region served by the PJM system. In the Midwest, work still remains in fashioning a day-ahead market by early 2005, overseen by the Midwest Independent System Operator. Efforts to fashion an independent system operator in other parts of the country have been stymied, owing to fierce resistance by some utilities (as in the South), or opposition by state authorities to share jurisdictional prerogatives with the Federal government (as in California).

Moreover, transmission infrastructure adequacy still remains in doubt. The Edison Electric Institute has estimated that over the last 25 years, transmission investment in real dollar terms declined US\$103 million annually. Although much of this deferral of investment can be attributed to heightened operational efficiencies, unfortunately this also has been accompanied by a steep rise in transmission congestion owing to the growing volume of wholesale power transactions. Despite a power outage in the summer of 2003 affecting 80 million Americans in the Northeastern and Midwestern portions of the country, no significant changes in transmission investment are anticipated for the near future. Because of the lack of regulatory certainty regarding control and use of transmission, utilities owning transmission assets are disincentivised from making any meaningful investments.

Further, not all states have enthusiastically welcomed the growing regional character of power markets. Natural gas-producing states are concerned that they may become the site of choice for more plants whose purpose is to serve

other states, with the former required to pay for upgrades to interconnect such generation. Other states seeking to avoid retail competition are concerned that they may be adversely affected by retail competition states, where both are served by a common independent system operator.

The US electric utility industry is no longer a declining cost business, and the investor-owned sector is charged with finding ways to maximise returns. In the aftermath of the erosion of credit quality left by Enron, the California power crisis, and failed diversifications, many utilities are being encouraged by the financial community to focus on business basics. This means placing attention, strategic aims, and resources on the core business of providing electricity to customers.

### Lessons for Three Asian Nations

What lessons can the US experience teach the three Asian nations now girding for reform? There are four:

- 1. A national commitment to reform and liberalisation has value in providing a platform to blunt efforts that slow or thwart reform**

Although this lesson may seem one of the most obvious, one of the most remarkable aspects of the US experience has been the absence of any clear legislative direction at the Federal level for all of the reforms adopted to date. Rather, all Federal guidance has been grounded on generic rulemakings and case-specific decisions by the Federal Energy Regulatory Commission (FERC), based on constructions of its statutory authority under legislation most recently enacted 12 years ago. Similarly, retail market reform has transpired solely under the direction of either state legislatures or public utility commissions. Efforts by the US Congress to enact necessary legislation to modernise regulatory law, policy, and practices have been repeatedly forestalled by opposition to extending the Federal reach to compel market reform for transmission, or sidetracked by non-electricity energy issues dealing with energy supply, among other matters.

Current market reform efforts in the US can best be characterised as stalled, with no clearly discernible trend line in legislative or

regulatory direction. For now, the US market is Balkanised, with some regions supporting competitive wholesale and retail sectors, others possessing competitive wholesale markets in the absence of retail competition, and others having no inclination to depart from the traditional integrated utility model. While some have said that this bottom-up approach has been beneficial in giving the US an opportunity to use the states as “laboratories of change”, others have lamented that this lingering uncertainty has resulted in chilling investment decisions.

By contrast, all three Asian countries have taken the optimal approach by enacting national legislation calling for market reform. This is significant not only as an expression of the entire country’s aspiration, but also in laying down a marker for the future, as the more difficult task of developing plans, timelines, and implementation details are debated and deliberated. Efforts may be undertaken by some to thwart or undermine the statutory intent. So long as the legislation remains intact, and a market-oriented model remains the vision, a firm basis exists to stay the course.

## **2. Expect market reforms to be embraced at an evolutionary – not revolutionary – pace**

Reform will not occur overnight, despite language in a statute setting target dates. The process of pushing reforms into the market – and disseminating knowledge and acceptance – will require intensive education, capacity building, and consensus building.

Moreover, no country will adopt the perfect market structure in its initial iteration. Modifications can and should occur. In the US, the process of developing the proper market design for independent system operators to oversee grid operations has been glacial, requiring enormous time and resources by market participants, transmission-owning utilities, and state commissioners. Even so, not every design decision has been found to be workable, and some operators have had to overhaul the design of their systems. For instance, the PJM system originally utilised a zonal transmission pricing system that necessitated numerous market interventions to “fix” problems. It later adopted a nodal pricing system that identifies locational congestion accompanied by a day-ahead market. In addition, the Electric

Reliability Council of Texas (ERCOT) Independent System Operation (ISO) has adopted a zonal pricing system, but is now considering whether to adopt a nodal pricing arrangement.

China plans to create a nationwide transmission system, incorporating the grids of its various provinces. India similarly endeavours to adopt an open access transmission regime in the service territories of its SEBs. The Philippines aims to have its TransCo provide non-discriminatory access through the interconnected parts of its country. Toward those ends, all have taken the proper first step by unbundling transmission from generation and distribution. If the US experience is any guide, however, the more difficult task of executing (and in some instances developing) a detailed implementation scheme with the cooperation of all of the provincial and local authorities remains ahead. Integrating the power systems of various local grids will require adoption of common technology standards, commercial practices, and necessitate increased knowledge among all market participants and local authorities.

Impatience can become the enemy of reform if market reform implementation delays are extensive. Expect delays, but don’t let them defeat the reform process.

## **3. Governments should avoid establishing rates based on political expediency. Customer charges should be aligned with properly allocated costs and subsidies, if any, should be made explicit**

State-owned utilities are extensions of the government whose purpose is to serve political constituents, leading to rate setting based on political factors. Genuine market reform will require phasing out this practice, a difficult task given public expectations from the past. One remedy is to create an independent regulatory authority, separate from an energy ministry, comprising decision makers holding a term of office for an established number of years, with sufficiently budgeted resources. This is the norm for US style regulation. Investors will watch closely how well – or not – the three Asian countries endeavour to allow rates to reflect actual cost responsibility. Capital commitments will hinge on how the rate setting process is perceived.

Additionally, politically driven ratemaking can have impacts that run counter to policy aims, or limit policy options. For example, because of political factors, customer tariffs were lowered in May 2001 in Guangdong Province, China, when it faced a power shortage. In a supply-constraint situation, the response in a market environment would be to increase price to discourage consumption. Although this approach would no doubt be difficult in the real world, its results have validated in instances such as the California power crisis where high prices prompted unprecedented power conservation levels.

China is experiencing an unprecedented demand for electricity such that blackouts are now required. This demand will need to be met through a combination of greater generation capacity and rational consumption assisted through some form of demand response. However, to achieve any meaningful demand response, customer tariffs will have to reflect market costs.

As reforms are introduced, market-oriented ratemaking should seek to shed existing subsidies and generally avoid creating new ones. This does not mean that a subsidy is impermissible in all instances. However, it should be explicit, specifically targeted to achieve a defensible public purpose, and tailored so that its intended beneficiaries are the only recipients (such as low-income customers in the US).

#### **4. Finally, properly balancing market freedom with government oversight will always be difficult – but necessary**

Although a market-oriented electric power system is significantly different from a state-owned system, it does not operate outside of government oversight. The key is to craft a careful balance between private sector opportunity and government rules and enforcement.

To illustrate, concern is growing in the US over the degree to which regions should rely on the spot market to provide reliable, affordable supply. Questions are being raised over how the exposure of independent power producers to supply and demand market forces affects their financial ability to provide a stable, long-term source of reliable power. Attention is focused on how to avoid the price volatility and gaps in

supply availability caused by a “boom-bust” cycle.

Some proponents argue that an optimal portfolio from a supply security standpoint should include a mixture of power acquired from the spot market, power committed under long-term contracts, and utility-owned power priced under traditional cost-of-service regulation. A more critical question is who decides what should be the optimal mix: the government, the private sector, or both collaboratively? These issues are being currently examined. At this juncture, there is no major movement advocating significant resumption of traditional utility-owned power to displace independent power. However, there is a growing awareness that perhaps the delicate balance between market freedom and government oversight needs to be recalibrated.

This issue will not likely emerge in the immediate future in China, India, and the Philippines because surging demand is creating such huge gaps in supply that the most immediate goal is for the private sector to build the greatest number of plants within the most feasible timeframe. However, over time, each country may be required to determine (without unsettling investors) how best the government can ensure a sufficient source of affordable, reliable power should spot market power assume a growing share of that country’s supply portfolio.

### **Conclusion**

Expectedly, the industry market structures ultimately adopted by China, the Philippines, and India will differ in varying respects. But there should be no difference in their common commitment to embrace a market-oriented electricity future for their respective countries. This future is identical to that chosen by both the US and other developed countries. The lesson for all countries should be the realisation that this path best assures the certainty of a thriving, reliable electric industry.

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