10 The public in Asia power

Nepomuceno Malaluan

Electricity provision by governments in Asia grew meteorically from post-World War II to the 1980s, only to be challenged by a strong push for privatisation from the late 1980s. This trajectory for electricity was underpinned by major shifts in the dominant development paradigm, particularly with respect to the role ascribed to the state in development.

The paradigm shifts were a product of complex issues. Financing, efficiency, equity, and sustainability have been key topics of the policy debates at the national and international levels. Less overt have been the various motive forces behind policy positions, including the foreign policies of world superpowers, often on behalf of the interests of their business and finance sectors. How a particular country responded depended on the power relations obtained in the country. But even as Asian countries introduced privatisation in the 1990s and early 2000s, it would be wrong to conclude that public provision of electricity has been decimated. While private sector participation increased in scope, the transformation of the sector into systems fully in private hands is far from seeing fruition.

This chapter locates the "public" in historical and present electricity provision in selected countries from East, Southeast, and South Asia. By "public" we mean primarily entities that are owned, managed, and financed by the state and subject to political control and oversight. However, we also consider as public those arrangements whereby non-state, non-commercial organisations operating on a non-profit basis play a role in one or more aspects of the service delivery.

The first section of the chapter provides a description of the electricity sector in Asia, with an overview of its development and present state. This is followed by a description of the research approach used to explore "alternatives to privatisation" in the sector, including the limitations met in the process. The third section enumerates the alternatives found in selected countries, while section four provides insights on how the identified typologies measure up to our predetermined "criteria for success". The final section provides the author's perspective in imagining an alternative for an electricity sector in Asia, drawing lessons from the research output

and identifying other factors that need to be considered in constructing alternatives.

ELECTRICITY IN EAST, SOUTHEAST, AND SOUTH ASIA

In the late 1800s a number of practical uses of electricity, such as for lighting and communications, were invented. Thus, technologies for generating electric power and for transporting it to the intended site of use (transmission and distribution) were also developed. The reality of being able to provide electricity in large and continuous supply spurred the development of more applications, such as electric motors, heating, refrigeration, electronics, and computing. Electricity became the backbone of modern industrialisation and of multiplying household conveniences.

From its seat in the US and Europe in the early 1900s, electricity technology and its various uses were introduced to the rest of the world, including Asia, through colonial policy as well as through investments. Still, electricity generation in Asia grew little in the first half of the 20th century, except for industrialising Japan. It was from 1950 onwards that electricity provision in Asia took off (see Table 10.1).

At the centre of power sector growth in Asia was the state. From private origins, most electricity provision in Asia came under state consolidation after the end of World War II. But by the late 1980s, and intensifying in the 1990s, power sector provisioning came under very strong pressure to restructure, particularly from the World Bank and the Asian Development Bank (ADB) in their role as lenders and gatekeepers of foreign capital.

Table 10.1 Electricity generation in selected Asian countries in 1929, 1950, 1980, and 1990 (billion kilowatt-hours)

Country	*1929*	*1950*	*1980*	*1990*
China	2.1	4.3	285	590
India	1.2	5.1	119	275
Korea	1.5	0.4	34	98
Thailand	0.0	0.1	14	44
Japan	13.3	44.9	547	813
Malaysia	0.2	0.9	10	24
Indonesia	0.2	0.4	13	43
Philippines	0.1	0.6	17	24

Source: Williams and Dubash (2004), US Energy Information Administration. www.tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=2&pid=2&aid=12.

In January 1993, the World Bank released a policy paper entitled "The World Bank's Role in the Electric Power Sector: Policies for Effective Institutional, Regulatory, and Financial Reform". It spelled out key elements of the country policy reforms that the Bank required for its intervention in the electricity sector. These included:

- Regulatory change – The bank will require countries to set up transparent regulatory processes that are independent of power suppliers and that avoid government interference in day-to-day power company operations.
- Importation of services – The bank will push twinning arrangements or contracting out selected sector services to foreign entities.
- Commercialisation and corporatisation – Power utilities must begin to operate as commercial businesses, earning commercial rates of return on equity capital, and being responsible for their own budgets.
- Private investment – The policies and institutions will be aimed at attracting greater private sector participation in electricity provision. The bank also committed to deploying a wide range of private sector financing tools and techniques to assist the process (World Bank 1993).

Following this lead, the ADB released its own policy paper, "The Bank's Policy Initiatives for the Energy Sector" (ADB 1995). Its policy on sector intervention did not depart much from that of the World Bank. Concretely, it advocated power sector restructuring in the medium term involving unbundling of generation, transmission, and distribution to enable greater private sector participation and introduce elements of competition. In the short term, it called for the corporatisation and commercialisation of government-owned utilities as a prelude to their privatisation and the entry of the private sector through various private build-operate options.

To amplify their influence, World Bank and ADB policies both required commitment lending. The World Bank resolved to focus lending to countries that showed commitment to its policy prescriptions, denying finance to utility projects in countries in which the government was unwilling to carry out fundamental structural reforms. When a country, with the Bank's analytical support, decided to step up privatisation, it would put together a comprehensive sector work programme to put in place the necessary legal and regulatory frameworks. Like the World Bank, the ADB also conditioned its lending and technical assistance on government willingness to restructure their power sector towards its preferred direction.

From 1990 to 2001, the World Bank approved US$22.2 billion in lending to electric power projects throughout the world. Of this, 65.4% related to private sector development. Of the 154 total electric power projects from 1990 to 1999, East Asia and Pacific countries accounted for 35, while South Asia accounted for 20, or 55 projects in all (Manibog et al., 2003). For its part, the ADB, from 1995 to 1999, approved US$4.83 billion in lending

to 40 energy projects. It also approved US$74.1 million in technical assistance for the same period. These projects included six rural electrification projects in Bangladesh, Bhutan, Lao People's Democratic Republic (Lao PDR), Nepal, and Thailand; two programme loans and a technical assistance loan supporting power subsector restructuring in Indonesia and the Philippines, including consulting services; a renewable energy loan to India; six loans financing thermal and hydropower projects in China, Lao PDR, Nepal, and Pakistan; and four loans for power transmission and distribution. In addition, the Private Sector Group provided direct assistance to four energy sector projects developed by the private sector in China, India, Nepal, and Pakistan with ADB assistance and complementary loans (ADB 2000).

In total, World Bank- and ADB-sponsored restructuring initiatives in the electricity sector led to 552 private sector participation projects in Asia from 1990 to 2008, of which 381 were in East Asia and Pacific countries and the remaining in South Asia. This mobilised a total of US$153.9 billion in private investments to the electricity sector for the same period, of which East Asia and Pacific countries accounted for US$98.26 billion and South Asia countries accounted for US$55.67 billion (data generated from World Bank Private Participation in Infrastructure Database at www.ppi.worldbank.org).

One common experience in private sector participation was contracting with independent power producers (IPPs). Typically, an IPP contract involves the contracting by a government electricity utility with a project sponsor under a build-operate-transfer, or variant, arrangement. The project sponsor is often a company created specifically for the project, generally by a private company or consortium of private companies, local or foreign. For the consideration of a long-term power purchase agreement (15 to 25 years) by the government electricity utility, the project sponsor agrees to put up a power plant and operate it for the duration of the contract term. Building the power plant means mobilising finance through a combination of equity and borrowing and procuring its construction. The project sponsor retains ownership of the asset until the end of the contract term, at which time ownership of the asset, assuming it has not exhausted its useful life, is transferred to the government utility. IPP contracts make up the bulk of the growth in private investment in electricity from 1991 and up to its peaking levels in 1996 and 1997.

The 1997 Asian financial crisis, however, exposed the risks associated with IPP contracting. IPPs demand generous protection from market risk (guaranteed capacity off-take), financial risk (exchange rate guarantee), and operational risk (fuel price guarantees). This reduced risk for the private sector, sometimes coupled with corruption in the contracting process, provides incentives to overcontract/overbuild. When the financial crisis struck, therefore, government utilities were faced with overcapacity and huge power purchase escalation that put even greater pressure on their

financial bottom line. Many utilities were forced to increase electricity rates or to book greater losses and indebtedness. Some IPP contracts became the subject of disputes. Overall, IPP contracting significantly lost its lustre after the Asian financial crisis.

Alongside contracting with IPPs was the introduction of deeper sectoral restructuring in many Asian countries. No doubt the restructuring model pushed by the ADB and World Bank heavily influenced the restructuring design. This model involved the vertical unbundling of the system, with an unambiguous objective of transferring the system into private hands. Unbundling, under the World Bank and ADB model, is a means to separate the parts that in their analysis can accommodate competition – particularly electricity generation – and the parts that remain a natural monopoly, particularly transmission and distribution. Generation is broken into a number of generation companies that compete in a power market. Transmission and distribution utilities are obliged to allow the transport of electricity to end users for a fee. While distribution utilities are allowed to retail electricity, they are subjected to competition by allowing high-capacity consumers and small consumer aggregators to buy power directly from generation companies. In addition to competition, the concentration of market power is sought to be prevented by a legal framework that limits cross-ownership. It also involves the creation of an independent regulatory agency to regulate pricing and service of the natural monopoly segments of transmission and distribution. Under this model, except for the regulator, all segments are envisioned to be sold off or contracted out to the private sector.

However, the World Bank's and ADB's strategic objectives of transforming the sector into an unbundled system, fully in private hands, is far from being realised. Still, given the intrusion of IPPs and restructuring, in many countries involving divestments, the sector can be best described as mixed from a public-private standpoint. Nevertheless, given the resilience of state roles in many countries, the ultimate trajectory of each system remains uncertain.

RESEARCH APPROACH

In attempting to locate the "public" within electricity provision in Asia, we confined the initial target coverage to the subregions of East (China, Japan, North Korea, South Korea), Southeast (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam), and South Asia (Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka). Owing to an absence of resources for country visits, we proceeded mainly with online data gathering and secondary literature on country electricity provision, focusing on the present state of service delivery, historical development, and sector reforms, while looking for information on the various "criteria for success" being used to evaluate the performance of these "public" electricity entities (see Chapter 2, this volume, for a fuller discussion of the research methodologies employed).

The websites of many utilities were helpful in providing technical data, while secondary literature from academics, industry experts, researchers, and consultants were useful in providing narratives on historical development and reform. The online library services of the International Development Research Centre provided valuable assistance in making available a number of titles not otherwise retrievable from open sources.

Certain countries in the original target scope yielded very little online information and had to be omitted from closer study. These are Brunei, Cambodia, Laos, Myanmar, North Korea, Afghanistan, and Maldives. Other countries, while yielding appreciable data and literature, have gaps that make it difficult to construct a full picture. They are Pakistan, Bangladesh, Nepal, Sri Lanka, Japan, Singapore, and Vietnam.

The study delved deeper into the remaining countries with substantial available information. These are China, India, Indonesia, Malaysia, Philippines, South Korea, and Thailand. These countries provided a good mix of cases. South Korea is an industrialised country. China and India are two countries with very large populations (each with more than 1 billion people) and fast-growing economies. Indonesia, Malaysia, Thailand, and the Philippines are middle-income countries with diverse histories, cultures, and development strategies.

For "alternatives" outside the main electricity system, we looked at Thailand and the Philippines for examples. The choice was based on resource availability, as the primary researcher is based in the Philippines and has a strong working partnership with an industry expert in Thailand.

What was particularly challenging was to find consistent, comparable, and substantial information on the various criteria for success. These often required in-depth study not supported by the resources of the research and also involved areas not traditionally studied by sector analysts. Also, where information may be available, it might not match the time element for the alternative. Thus, we were confined to evaluating each identified typology against selected criteria as they may be applicable.

The research was also informed by a research methodology workshop and a regional validation workshop on alternatives for Asia, both in Bangkok, Thailand, which included participation by Asia sector researchers and selected experts who provided comments and insights on methodology and preliminary findings.

TYPOLOGY AND OBJECTIVES OF IDENTIFIED ALTERNATIVES

Single public sector – historical models

As mentioned above, most electricity provision in Asia began under state consolidation after World War II. One variant of such consolidation is through a *vertically integrated monopoly under a state agency or a state-owned corporate body*. Vertically integrated means that a single entity owns and operates the generation, transmission, and distribution aspects of the system.

In terms of organisation of the operator, it can be through a state agency that forms part of the bureaucracy. Others are organised as a state-owned corporate body; that is, the operator is given a legal personality independent from the central or local government. It must be noted, however, that such corporate organisation does not necessarily mean losing state control and oversight. Strategic planning, budgeting, and other major decisions are often still done through the relevant line agency (such as a department or ministry of energy). What this set-up does, however, is to provide the operator an independent legal personality enjoying corporate powers, including the capacity to own property, to enter into contracts, and to sue and be sued. This gives the operator flexibility in dealing with operational transactions, such as procurement, without the more tedious administrative requirements of a state agency set-up.

Falling under this category are the following:

- China – In 1949, the Chinese Communist Party confiscated electricity assets and placed them under central planning through the State Planning Committee, Ministry of Electric Power and Bureau of Electric Power, with the operations implemented through state-owned enterprises at both central and provincial levels (Yang 2006).
- South Korea – In 1961, the military government of General Park Chung-Hee, installed by a coup, grouped together three existing regional electric companies to form a single nationally operating electric power entity. The resulting structure was a vertically integrated monopoly under the Korea Electric Company (KECO), later renamed Korean Electric Power Corporation (KEPCO; Funding Universe 2009b).
- India – The Constituent Assembly (after independence in 1947), passed the Electricity (Supply) Act of 1948, providing for the creation of State Electricity Boards as well as of a Central Electricity Authority. The State Electricity Boards operated vertically integrated systems within states, alongside various national generation corporations and grid corporations, under combined central and state planning. Whereas at the start, there was flexibility to honour existing private licences, in 1956 an Industrial Policy Resolution was adopted reserving production of power to the public sector (Kale 2004).
- Indonesia – In 1950, after Indonesia gained independence, the Indonesian government established the National Electric Power Company or the *Perusahaan Umum Listrik Negara* (PLN). PLN operated a vertically integrated system under oversight by the Ministry of State-Owned Enterprises, Ministry of Energy and Mineral Resources, and Ministry of Finance (Seymour and Sari 2002).
- Malaysia – Public consolidation started in 1949 when the British authority, after the Japanese occupation, established state-owned enterprises for development in an effort to foil communist insurgency. The Central Electricity Board of the Federation of Malaya was formed. The consolidation intensified after independence in 1957,

with the *Malayanisation* policy. The Central Electricity Board of the Federation of Malaya became the National Electricity Board of the States of Malaya in 1965, operating a vertically integrated monopoly in peninsular Malaysia. Two other state monopolies provide the service in Sarawak and Sabah (Jomo and Tan 2003, TNB[1]).

Another variant is a *partially integrated system*, where there is integrated generation and transmission but separate distribution. Falling under this set-up were the following:

- Philippines – Public sector participation in generation started in 1936 through the creation of the National Power Corporation (NPC) with the obligation to develop hydro power. In 1972, at the onset of Martial Law, President Ferdinand Marcos issued Presidential Decree 40, instituting an NPC monopoly over transmission and on-grid new generation. From then on, it progressively took over private plants and operated a monopoly over generation and transmission. Distribution was given to regulated private distribution utilities, cooperatives, local government units, and other authorised entities over a specific franchise area (Malaluan 2003).
- Thailand – In 1969, generation previously undertaken by three generation authorities was combined into the Electricity Generating Authority of Thailand (EGAT). EGAT operates as a state-owned company involved in generation and transmission throughout Thailand, selling wholesale power to the state-owned Metropolitan Electricity Authority for distribution in Bangkok and Provincial Electricity Authority for distribution throughout the country (Greacen and Greacen 2004, Funding Universe 2009a).

Public/non-profit partnership

We found examples of partnerships between the state and non-state entities operating on a non-profit basis that helped secure public objectives in electricity provision. As the first two examples below illustrate, participation by the non-state, non-profit sector are confined to small initiatives but can be embedded in the overall structure. The other form of partnership extends beyond the physical provisioning and goes into other important aspects of the sector, particularly planning. In many countries, the people's drive to make the sector accountable results in institutional mechanisms for people's participation, as our third set of examples shows:

- Rayong City Biogas project – In Rayong City, Thailand, there is a 1-megawatt biogas plant that supplies electricity to the grid. There are plans to increase its capacity to 4 megawatts. It is a project of the Rayong local government, with cooperation from a non-profit organisation, the Energy for Environment Foundation (HPPF 2010).

- Electric cooperatives in the Philippines – As mentioned earlier, in the historical public consolidation of electricity provisioning in the Philippines, distribution was not integrated with generation and transmission. Among the entities allowed to perform the distribution function are electric cooperatives. The formation of electric cooperatives is governed by a 1969 law (Republic Act 6038) declaring total electrification of the country a state policy and identifying electric cooperatives as a central mechanism for such. These cooperatives are non-stock, non-profit membership corporations, with membership open to consumers served. Knowing the start-up cost required for a distribution utility to be able to operate, the same law created the National Electrification Administration tasked with assisting cooperatives through lending and technical assistance. The number of electric cooperatives has grown to 119.
- Initiatives for public participation in state planning and regulation – Outside of the physical provisioning of electricity, there has also been a push in certain areas for stronger public participation in electricity planning to protect community interests. In Thailand, some environmental groups are advocating the adoption of an Integrated Resources Planning framework. In contrast to conventional power supply planning by government, this approach integrates demand-side management into the demand and supply determination and also expands the cost considerations to include environmental and social costs. One key element in the process is greater transparency and public participation in the planning process (Bijoor et al., 2007). In the Philippines, the Regional Development Council (a government mechanism for participatory planning) in one of its regions passed a resolution in 2004 calling for a Multi-Stakeholder Power Development Planning (MSPDP) for Panay, a Philippine island comprising four provinces. The initiative was a response to the clamour of local organisations for greater understanding of the planning and decision-making process in local electricity, to questions over the power rates and power demand forecasts, and to concerns over the environmental impact of power plants. The local organisations see the initiative as a way to give people a voice in the setting of local priorities, the identification of problems, and the search for solutions. The organisations are looking to the challenge of bringing the initiative into the mainstream of the planning process of the Department of Energy, and replicated in other provinces and regions (FDC 2008). In India, the non-governmental, non-profit organisation *Prayas* is actively intervening in electricity regulation in the state of Maharashtra. Since 1999, it has been nominated by the Maharashtra Electricity Regulatory Commission (MERC) as a Consumer Representative. Prayas is also recognised as a member of the Advisory Committee of MERC. In these capacities, Prayas participates in all key regulatory initiatives.

It has also initiated regulatory cases and intervened significantly in all major regulatory cases (Prayas, n.d.).

Non-profit/non-profit partnership

In off-grid areas in which there are significant barriers to linking with the grid, the need for electricity coupled with the absence of private commercial interest drives communities, non-profit organisations, and governments to find non-commercial alternatives to providing electricity:

- Microsystems – An illustrative initiative is one led by *Sibol ng Agham at Teknolohiya* or SIBAT (translated, Sprout of Science and Technology) in the Philippines. SIBAT is a network of non-governmental organisations and people's organisations promoting appropriate technology through its core programmes in sustainable agriculture and renewable energy development. Since 1994, it has facilitated the setting up of community-based, small power supply systems in remote, upland, and marginal communities. From 1994 to 2007, it has either installed or is in the process of installing Microhydro Power Facilities (capacity ranges between 5 and 40 kW) in 20 localities, benefiting more than 1 000 households (SIBAT, 2005).

Single public sector – Defending/revising the status quo

Amidst strong pressure to adopt the unbundling/privatisation model of restructuring, a number of state entities have worked to fend off privatisation, either by selling the merits of what they provide (defending the status quo) or through internal restructuring to improve public service delivery. In other instances, even as the governments have already made a policy shift towards privatisation, implementation is halted or prevented by public opposition, including through judicial action. We provide several illustrative examples below. More often, the adjustments and transitions still result in the introduction of private elements, making the identification of these cases as "public alternatives" perhaps controversial. This matter will be addressed in the succeeding section as we discuss the identified cases in relation to the predetermined "criteria for success".

- China: taking unbundling towards a different route – In 1997, the State Council of China (its highest administrative organ) created the State Power Company of China. It took over most electricity assets and operation from the Ministry of Electric Power. Parallel corporatisation was also done for generation assets controlled by provinces (Zhang and Parsons 2008). In 2002 the State Council launched deeper reforms intended to prepare the sector for the introduction of competition through regional wholesale power markets and exchange of power

among regions. Part of the reform process was the setting up of an independent regulatory agency, the State Electricity Regulatory Commission. The State Power Company was split into several corporate entities. Transmission was assigned to two companies, the State Grid Corporation of China and the China Southern Power Grid Corporation. The State Grid Corporation is further broken down into five regional grid companies of North China, Northeast China, East China, Central China, and Northwest China. Generation assets, in turn, were assigned to five generation corporations: the China Huaneng Group, the China Datang Group, the China Huadian Corporation, the China GuoDian Corporation, and the China Power Investment Corporation. The corporatised enterprises remain under state ownership (CSP, n.d.). Beginning in 2004, a number of pilot trials were done in several regional wholesale electricity markets, particularly in Northeast China, the East Region, and the South Region. However, it does not appear that such power markets have continued.

- South Korea: retreat from privatisation – In South Korea, the Korean Electric Power Corporation (KEPCO) was listed on the Korea Stock Exchange in 1989, and 21% of its shares were offered by government to the public. In 1994, KEPCO shares were also listed on the New York Stock Exchange, where American Depositary Receipts (ADRs) amounting to US$300 million were issued. These partial privatisation initiatives were intended to raise capital for the corporation, but the listing also brought the company into commercial scrutiny. When the country was hit by the Asian financial crisis in 1997, and in the face of strong pressure to privatise coming from the International Monetary Fund, the government initiated planning for deeper restructuring. This culminated in the release of the Basic Plan for Restructuring the Electric Power Industry in 1999. The restructuring was to be phased from 2001 to 2009. Phase one involves spinning off KEPCO's generation assets into six subsidiaries. Competition in generation will be introduced by setting up a power pool, with KEPCO remaining a single buyer. The generation companies will be privatised through a combination of negotiated sale and initial public offering in the stock market. Phase two involves spinning off the distribution assets into several companies and privatisation similar to the generation companies. Large consumers will be allowed to purchase in the power pool. The transmission sector shall remain with KEPCO. It will allow open access to all market participants under regulated transmission charges. The final phase involves full retail competition, with generation companies, consumers, and other market participants having open access to transmission and distribution. Implementation of the plan began in 2000, with the passage of a law authorising the separation of KEPCO's generation assets into several companies. In 2001, six generation subsidiaries were established. Another legislation mandated the setting up of the

Korea Power Exchange and a regulatory body called the Korea Electricity Commission. The privatisation component, however, met strong opposition from the public. Privatisation was suspended following a change in government in 2003, and more definitely halted in 2004. Today KEPCO remains owned by government in majority (51.07%) and retains full ownership of the spun-off generation subsidiaries. It also has considerable investment interests in related businesses in the country and overseas (Mun 2002; KEPCO[2]).

- Judicial challenge in Thailand and Indonesia – In Indonesia, the seeds of restructuring started with Law No. 15/1985 allowing private sector participation in electricity generation. But for this law to be implemented it requires corresponding executive instruments. This came during the inception of the IPP wave, with the issuance of Presidential Decree No. 37/1992, or the Private Power Decree, coupled with the corporatisation of PLN in 1994 through Decree No. 23/1994. These implementing decrees facilitated PLN's contracting with IPPs (Sari 2001). Sections of generation were also spun off into two subsidiary companies, the PLN *Pembangkitan Java-Bali I*, and *Pembangkitan Java-Bali II*. Hit hard by the Asian financial crisis in 1997, the government committed to multilateral agencies for even deeper restructuring of the power sector. This culminated in the Parliament passing Electricity Law No. 20/2002. This law called for the establishment of an electricity regulatory commission within one year from passage of the law and the designation of at least one area for free competition in generation. Government will retain ownership and control of transmission and distribution. Licensing of generation companies will be decentralised, allowing local governments to issue licences to private companies within their jurisdiction (Tumiwa 2002). Opposition to the restructuring challenged the law before the Constitutional Court. In December 2004, the said court declared Electricity Law 20/2002 to be contrary to the constitution. The court held in part that as electricity is a commodity vital to the people, it should remain under the full control of the state and only allowing partnerships with private companies. The industry should also remain an integrated business.

  Thailand experimented with a different mode of involving the private sector in the 1990s and early 2000. In May 1992 it formed the Electricity Generating Company (EGCO) to which it assigned two power plants (120-mW Rayong Power Plant and 750-mW Khanom Power Plant). EGCO then sold 60% of its shares through an initial public offering (IPO) in the Stock Exchange of Thailand in November 1994. In 1997 it sold more shares to strategic investors, bringing its interest down further to 25.8%. The same strategy was pursued in EGAT's Ratchaburi Power Plant Complex, by forming the Ratchaburi Electricity Generating Holding Co. Ltd. in March 2000. It retained 45% interest, offered 40% to the public through the stock market, and assigned 15%

to EGAT employees and the EGAT Provident Fund. These initiatives were intended to be part of a comprehensive sector restructuring along the unbundling and privatisation model, as approved by the Cabinet in July 2000. The plan called for the further spinning off of the generation assets of EGAT into more generation companies for privatisation and retaining with EGAT mainly the transmission assets. A power pool operated by an independent system operator will be established, where the spun-off generation companies and other private generation companies will compete for the sale and dispatch of their generated electricity. The distribution business of the Metropolitan Electricity Authority (MEA) and the Provincial Electricity Authority (PEA) will be subject to competition by allowing private unregulated retail companies to operate and compete for electricity consumers. There were also proposals to break MEA and PEA up into several distribution companies. Finally, an independent regulator will be set up to regulate the natural monopoly businesses of transmission and distribution (NEPO 2000). The plan, however, was abandoned by the government of Thaksin Shinawatra, who won the elections in 2001. Instead, Thaksin proposed to reform Thailand's biggest state-owned enterprises by corporatising and publicly listing them and offering minority shares to the public. The idea was to increase stock market capitalisation and raise funds for the enterprises, while retaining state majority ownership (Greacen and Greacen 2004). Following this shift, EGAT was corporatised in June 2005 into EGAT PLC. Preparations were made for the offer of 25% interest in the company to the public for US$753 million. However, members of the Confederation of Consumer Organizations in Thailand filed a case before the Supreme Administrative Court questioning the validity of the planned sale. On 23 March 2006, the court declared the privatisation illegal. Among the grounds were the lack of consultation and the illegality of allowing private ownership of an entity that retains a right to expropriate, which is reserved for the state.

- Malaysia corporatisation – In Malaysia, the Electricity Supply Act of 1990 corporatised the National Electricity Board into *Tenaga Nasional Berhad*. Although it was publicly listed, there was no intention to let go of controlling interest by government. The government retains majority interest through its investment holding arm as well as the Employees Provident Fund under the Ministry of Finance.

ASSESSING PUBLIC ALTERNATIVES AGAINST "CRITERIA FOR SUCCESS"

How do these public electricity service providers stand up to performance scrutiny? We have evaluated them using a predetermined set of "criteria for success" (see Chapter 2, this volume, for an extended discussion), as follows.

Equity

One indicator of equity in electricity is access rates in urban versus rural areas. Access is particularly challenging in rural areas that are often characterised by lower levels of consumer capacity to pay and wide geographic dispersion, making cost of provision high and relative demand low. It is thus an accomplishment for developing countries to be able to provide high access rates for rural areas or at least to be able to provide relatively close access levels between rural and urban areas.

Among the countries identified as having strong historical state provision of electricity, China, South Korea, Malaysia, and Thailand have near-universal access rates. Of the lower performers, the Philippines has relatively high total access, with respectable urban to rural comparisons. The poor performers were India and Indonesia (see Table 10.2).

Table 10.2 Electricity access in Southeast, East, and South Asia (2008)

	Electrification rate (%)			
Country	*Total*	*Urban*	*Rural*	*Population without electricity (millions)*
Southeast Asia				
Brunei	99.7	100.0	98.6	>0.1
Cambodia	24.0	66.0	12.5	11.2
Indonesia	64.5	94.0	32.0	81.1
Laos	55.0	84.0	42.0	2.7
Malaysia	99.4	100.0	98.0	0.2
Myanmar (Burma)	13.0	19.0	10.0	42.8
Philippines	86.0	97.0	65.0	12.5
Singapore	100.0	100.0	100.0	0.0
Thailand	99.3	100.0	99.0	0.4
Vietnam	89.0	99.6	85.0	9.5
East Asia				
China	99.4	100.0	99.0	8.0
Japan	100.0	100.0	100.0	0.0
North Korea	26.0	36.0	10.0	17.7
South Korea	100.0	100.0	100.0	0.0
South Asia				
Afghanistan	14.4	22.0	12.0	23.3
Bangladesh	41.0	76.0	28.0	94.9
India	64.5	93.1	52.5	404.5
Nepal	43.6	89.7	34.0	16.1
Pakistan	57.6	78.0	46.0	70.4
Sri Lanka	76.6	85.8	75.0	4.7

Source: IEA (2010).

It is interesting to compare the performance of the two poor performers with similarly situated high performers. India compares to China in terms of its large population and vast geographical territory, but China far outstrips India in terms of providing access for the rural sector. Indonesia compares to the Philippines in terms of its archipelagic territory, but the Philippines far outstrips Indonesia in terms of providing access for the rural sector.

One explanation is the effective combination of central and decentralised approaches in China and the Philippines to achieve more equitable access. In China, Yeh and Lewis (2004) describe the electricity development approach during the Maoist period of 1949 to 1977 as "walking on two legs". One leg was the construction of large-scale, centralised projects, and the other was decentralised rural electrification. China promoted self-reliance and learning by doing, with assistance through small subsidies and technical support. The result was significant small-scale, decentralised systems (especially in hydropower) with high domestic technology content. In the Philippines, there was centralisation and integration of generation and transmission, but the rural electrification drive was decentralised through the promotion and support for electric cooperatives as described in the previous section.

Participation

The Prayas intervention in electricity regulation in the state of Maharashtra in India is already showing very positive and sustained results. Their intervention in tariff and generation and power purchase regulatory issues and disputes, either as principal party or as intervener by way of comments and submissions, has articulated public interest perspectives and also won concrete decisions (see documentation of Prayas Maharashtra intervention at www.prayaspune.org). Part of the success stems from the institutionalisation of the regulatory participation of Prayas. As mentioned earlier, Prayas has been nominated by MERC as a Consumer Representative since 1999 and is also recognised as a member of the Advisory Committee of MERC. No doubt such institutionalisation was something Prayas itself worked for, partly through building credibility and expertise in dealing with regulatory issues.

The off-grid microsystem initiative of SIBAT also shows high levels of participation. Over the course of its experience, SIBAT has developed an approach or methodology for its projects, one aspect of which is a participatory project development process. It begins with planning that evolves together with community members. In contrast to commercial activities that simply regard the community as a market, the project schedule incorporates community participation in all phases, such as civil works and determination of technology appropriateness.

Of the initiatives for public participation in state planning and regulation identified, the examples from Thailand (Integrated Resources Planning framework) and the Philippines (MSPDP) are still new initiatives, and there is as yet no clear indication of their effectiveness in practice.

Efficiency

Table 10.3 gives some indicators of sector performance that show public systems can achieve high levels of efficiency. This is very clear from Korea, China, and Thailand, with strong performance in bringing down system losses. Philippines and Malaysia also show respectable control of system losses. South Korea achieved very high levels of labour productivity as shown by its consumers-to-worker ratio. China also did very well, while Malaysia and Thailand should benefit from improvements. All these were accomplished while maintaining good rates of return, except for China.

The poor performer was India (along with Bangladesh), with very high system losses and poor rates of return. Although these figures are stark, care should still be exercised in cross-referring these indicators with other possible explanatory variables, such as high subsidy rates. In other words, there could be trade-offs with equity objectives.

Table 10.3 Electricity sector performance indicators in selected Asian countries, 1987

Country	*Generation per capita (kWh)*	*Total system losses (%)*	*End users per employee*	*Rate of return on investment (%)*
Korea	1 906	6	292	15
Malaysia	983	16	84	10
Thailand	567	10	92	11
China	465	9	118	6
Philippines	408	17	NA	10
India	273	24	NA	4
Pakistan	227	25	38	12
Sri Lanka	165	16	51	8
Bangladesh	56	37	39	2

Source: Williams and Dubash (2004), citing Jose R. Escay, Summary Data Sheet of 1987 Power and Commercial Energy Statistics for 100 Developing Countries (Washington, DC: World Bank, March 1990).

Accountability and transparency

It was difficult to find literature on these aspects of the electricity sector for many countries. There is, however, a study led by the World Resources Institute and Prayas that analysed the electricity governance in India, Indonesia, Philippines, and Thailand in terms of transparency, public participation, and accountability (Nakhooda et al., 2007). One limitation of using this study for the purpose of this chapter is that the data were gathered at the point in which structural reforms in the sector were ongoing and therefore difficult to apply to the time element of our identified typologies. Still, the summary of key findings of the study is worth sharing:

- In terms of electricity policy and planning, in general little information about the basis for new policy initiatives is shared with the public.
- Opportunities for public participation in policy processes remain quite limited, and when consultations are conducted, input received is not always recorded or seriously considered by policy makers.
- The integrity and capabilities of executive agencies need to be improved, particularly in terms of addressing conflicts of interest and political interference.
- Planning processes can help mainstream environmental and social considerations. It was noted that independent planning agencies such as the Energy Policy and Planning Office in Thailand and the Central Electricity Authority in India, have significant technical capacity but lack credibility and resources, although in Thailand there are efforts to conduct strategic environmental impact assessments for electricity.
- There are significant legal provisions for transparency, public participation, and accountability in independent regulatory bodies in India and the Philippines, but these rules need to be effectively operationalised.
- Public interests such as environmental sustainability and social equity are seldom included in the mandates of electricity regulators, even as civil society organisations in the countries studied showed interest in engaging in electricity governance although constrained by financial, human resource, and technical expertise limitations.

Quality of the workplace

This is another understudied area in the electricity sector in Asia. We can only make inferences on unionism as a facet of quality of the workplace from the countries studied. Particularly in the cases of South Korea, Indonesia, and Thailand, we can deduce the presence of a strong public sector union in the electricity sector of these countries, where the unions played a considerable role in the opposition to restructuring and privatisation

initiatives. Such strong unionism is possible not just through union organising success but no doubt also thrives in a work environment that is open to such union activities.

Sustainability

The illustrative example for microsystems in off-grid areas – SIBAT – shows high levels of environmental and social sustainability. In addition to the participatory methods discussed earlier, project sustainability is made greater by requiring a people's organisation to represent the community, with organisational track record in being able to mobilise the community to contribute materials and labour, with willingness to seek the necessary outside help (such as from the local government), and with capacity to manage the project after installation. SIBAT provides technology assistance and helps in the social preparation of the community. It also sources grants to provide a one-time subsidy, after which the people's organisation takes over to ensure the operation, maintenance, and replacement of parts. The technologies used are also environment-friendly.

The Rayong City Biogas project provides an example of an on-grid environmentally sustainable initiative. The plant is addressed not only to electricity needs but also to waste management. It responds to the challenge of dealing with the ever-increasing quantity of municipal waste. Rayong City was among the first local governments to implement the biogas system using organic waste to generate electricity. The use of organic waste for biogas electricity generation is environmentally cleaner than alternative disposal, such as incineration (HPPF 2010).

Solidarity

In terms of the big systems, the decentralised components of the electricity development strategy of China and the Philippines showed strong elements of solidarity. These combined state support with local community power in developing smaller local systems for China and the decentralised electricity distribution through cooperatives in the Philippines.

Strong community solidarity was also shown in the retreat of privatisation in Korea and the judicial interventions in Thailand and Indonesia. In South Korea, the labour unions were the first to oppose the restructuring agenda. The Korean National Electrical Workers Union opposed restructuring primarily from a job security perspective and reached compromise with KEPCO management on the first stage of the restructuring, which was to separate generation. This caused a split in the union, with the workers in the generation sector still opposed to the restructuring and forming the Korean Power Plant Industry Union. It was this latter formation that evolved from opposition based only on job security to broader policy concerns including the stability in electricity supply, pricing, and foreign

ownership (Mun 2004). On the part of the environmentalists, they were initially more open to the unbundling model. Coming from an anti-nuclear advocacy, many environmentalists saw some opening in the unbundling model to break up the monopoly of KEPCO, which they hoped would facilitate the reduction in reliance on nuclear power. As the restructuring plan unfolded, however, the environmentalists realised that the unbundling model never sought to address their environmental concerns. This precipitated an interest in dialogue with the labour unions and other civil society groups, which in March 2002 resulted in a joint declaration calling for the suspension of the restructuring programme and to undertake deeper consultation to forge social consensus. This proved instrumental in the eventual government decision to halt the implementation of the restructuring plan in 2004 (Byrne et al., 2004, Mun 2004).

The evolution of sector union-civil society solidarity in Thailand and Indonesia followed a pattern similar to that of South Korea. In Thailand, the first main opposition to the restructuring agenda came from the EGAT labour union, which put up a determined campaign alongside unions in other government-owned enterprises. While the unions were able to strongly engage the privatisation proponents, they were seen by other organised sectors as only promoting their vested interests. The environmental and consumer movements instead focused their campaigns on electricity pricing as well as opposition to the construction of some power plants for environmental and social concerns (Nuntavorakarn 2002).

After Thai Prime Minister Thaksin Shinawatra changed enterprise reform from one of full privatisation to a strategy in which state enterprises would be listed and partially privatised, the EGAT union members still continued their opposition. They staged protests in 2004 at the time when the new privatisation plan was being finalised. The union achieved stronger alliance with other movements, particularly the environmental and consumer groups that were calling for the establishment of an independent regulator, a reform aspect present in the former unbundling model but absent in the Thaksin approach. Still, the plan proceeded but was finally stopped in March 2006 through court action by the Confederation of Consumer Organisations. No doubt the strong opposition added pressure to the decision of the court.

In Indonesia, the main opposition to the restructuring and privatisation agenda came from the PLN Labour Union, again principally on job security concerns. But as the reform legislation was being taken up by Parliament in 2001, a broader formation, the NGO Working Group on Power Sector Restructuring (WG-PSR) was convened. This even expanded its reach by initiating a broad coalition of NGOs, academics, labour unions, and ex-PLN employees into the Civil Society Coalition for Electricity Crisis. Alongside mass campaigning, it undertook research and analysis and intervened in the legislative process (Tumiwa 2004). After the passage of the act, it shifted its focus to the judicial review of the act before the Constitutional

Court, which culminated in striking down of the said act in December 2004 for being contrary to the constitution.

Public ethos

A government's public ethos in terms of how it views the role of the state in securing social or public objectives comes into play in determining how its electricity sector is organised. This was very clear in the historical public consolidation of electricity provision in Asia. For countries that suffered destruction from World War II, reconstruction was a major objective. For other countries there was the dimension of gaining independence from a colonial power, of winning a communist revolution, or of the coming into power of governments characterised by strong leaders with developmental orientation. These countries all imposed upon the state a central role in developing infrastructure, with critical emphasis on providing for the electricity needs of nascent industry, of growing urban centres, and of the marginalised countryside.

At the present juncture, how a government's public ethos has evolved determines how it reacts to the pressure to undertake deep restructuring in the direction of full privatisation of electricity provisioning. The two sample countries where restructuring took an independent path, China and Malaysia, both have a history of independent national and foreign policy and strong state intervention in the economy. While Communist China introduced market reforms in the 1990s, it did not mean blanket privatisation. A closer look at the progression of China restructuring reveals that privatisation was not the ultimate objective. Rather, corporatisation was intended to separate governmental administrative function from government commercial or business activity or enterprise. Even the introduction of competition was not intended to facilitate the shift to private provision but rather was part of the internal reform in state enterprises to subject them to market forces.

The socialist market economy model of China emphasised the role of public ownership in corporatised state-owned enterprises. More specifically, in its programme of industrial structural adjustment of November 2001, enterprises were categorised into the following: (i) core sectors of national defence and military industries, where government retains absolute control; (ii) strategic enterprises supplying critical public goods and services, and sectors of natural monopoly, such as electricity, water services, and energy industries, along with enterprises of national economic strength, such as petrochemical and automobile, where state capital retains a controlling position; and (iii) key high-tech industries where government provides funding for basic and applied research (Nakaya 2006). It was on this basis that the electricity restructuring of China modified the unbundling model of the World Bank and the ADB to remain consistent with its public ownership and public goals perspective.

For Malaysia, it was proceeding from a historical strategy of a developmental state framework. As mentioned earlier, while its power utility was publicly listed, there was no intention to let go of controlling interest by government. The listing and partial divestment were intended to expand the capitalisation of its stock market as well as to continue the redistribution of wealth to increase indigenous Malay (*Bumiputera*) ownership and entrepreneurship (Gomez 2009).

South Korea comes from the tradition of a developmental state, with the government working in close coordination with business conglomerates in pursuit of its industrial policy. The initial push for the privatisation of Korea's electricity sector came from the conglomerates, with the Federation of Korean Industry proposing to the government's Regulatory Reform Committee the opening of the sector to accommodate independent power producers and self-generators into the system (Mun 2004). The stronger pressure, however, came in the wake of the 1997 financial crisis. The International Monetary Fund (IMF) conditioned its bailout package on deep market reforms in the economy. KEPCO was a principal target for privatisation, being the state-owned enterprise with the highest level of international debt. At that time, the Korean government was also in transition politically, with Kim Dae-Jung winning the December 1997 elections. Kim came from a background of opposition to the former military governments and a platform of political democratisation. One could speculate that Kim's acceptance of the IMF economic reform conditionalities also proceeds from a rejection of the developmental state model of the military governments. Strong public opposition had indeed precipitated the retreat in the full implementation of the Korea electricity restructuring. But the Korean National Electrical Workers Union (KNEWU, n.d.) itself recognised that the election of Rho Mu-hyun, who was regarded as having a more progressive standpoint, helped provide a new foundation for the review of the restructuring and privatisation plan.

In Thailand, Greacen and Greacen (2004) observe that business-friendly prime ministers in power from 1980 to the 1990s facilitated the growing clout of pro-market reformers in the Thai bureaucracy. For the energy sector, they identify Dr Piyasvasti Amranand, an economist trained at the London School of Economics and appointed director of the National Energy Policy Office in 1986, as having played a key role, with technical assistance from the World Bank and foreign consulting firms, in planning the restructuring of the Thai power sector. But the election in January 2001, when the Thai Rak Thai party won majority seats in Parliament and its leader Thaksin Shinawatra became prime minister, signalled a change in state ideology. With the experience of the Asian financial crisis still fresh in the people's mind, Thaksin took a critical stance against the IMF stabilisation programme and postponed sector reforms. This included changing enterprise reform from one of full privatisation, to a strategy in which state enterprises will be listed and partially privatised, but remain state-owned and controlled to achieve strategic economic objectives, and called

"national champions". Piyasvasti was stripped of his erstwhile pre-eminent role in the reform process.

Transferability

Elements of the alternatives identified in the electricity sector in Asia can be argued to be replicable in other areas with compatible conditions. In Asian countries with low rural electricity access rates (or even low access rates overall for some) such as Cambodia, Indonesia, Laos, Myanmar, North Korea, Afghanistan, Bangladesh, India, Nepal, and Pakistan, the centralised/decentralised approaches of China and the Philippines are worth considering. For urban centres, environmentally sustainable approaches such as the Rayong City, Thailand, biogas project would be a good project to follow. For off-grid areas, sustainable microsystems such as the SIBAT initiative should be easy to replicate. In fact, developing microsystems even in areas linked to the grid should be considered.

The solidarity approaches for galvanising public opposition to privatisation and restructuring is instructive for countries in the process of considering or in the process of implementing reforms. In Indonesia, for example, after the court case invalidating the electricity restructuring was won in 2004, the Parliament again passed a new law in September 2009 (Electricity Act 30/2009). This law introduces adjusted restructuring initiatives in the electricity sector. Avoiding the constitutional questions, the new law does not introduce unbundling and competitive market in generation. However, it relaxes the monopoly (with allowable partnership with the private sector) of the state in engaging in electricity supply business. Private enterprises will be allowed to engage in power supply business, provided only that state enterprises are given first priority to provide the power supply business, and subject to regulation. It remains to be seen how the government will implement the law. The public sector union has again questioned the law before the Constitutional Court. It will be a setback if the coalition of forces that characterised previous advocacy is not united in their position on the current law.

IMAGINING AN ALTERNATIVE ELECTRICITY SECTOR

From the results of the study, we draw general lessons that we believe can inform the construction of holistic alternatives to privatisation in the electricity sector in Asia (and beyond).

Public electricity systems work

The fact that public electricity systems work has clearly been shown by the historical state consolidation of electricity provision in Asia. The experiences of South Korea, China, Thailand, Malaysia, and even the Philippines

show that efficiency and equity objectives are achievable, and lessons can be emulated by poorer performers. After all, the viability of public electricity provision is inherent in the nature of this service. For one, mass electricity provision, from power generation to its delivery to end consumers, is a large, complex, and interdependent system that is compatible with centralised day-to-day operations and strategic planning. The interrelated decision and planning areas include forecasting demand, deciding the optimal generation mix based on plant construction costs, operating costs, and fuel availability and security, the optimal use/dispatch of the available generation mix at any given time, the response to unforeseen system failures, and the level of interconnectedness of the system. In addition to efficiencies from centralisation, the state is also better suited to address important objectives in electricity provision that competing private firms can be expected to ignore. These include social objectives (such as equity), national security, and environmental sustainability, among others.

The "public ethos" of government is crucial to securing public electricity systems

As discussed earlier, public ethos was a key determinant in the historical consolidation of the sector, as well as in the defence of public-oriented restructuring. On the other hand, the erosion of public ethos results in a privatisation trajectory for the sector. The latter is what happened in the Philippines, which adopted the unbundling/full privatisation model. While the external influence from the ADB and the World Bank was at work, there was at the same time a progression of a hegemonic shift in government ideology that came with the overthrow of the Marcos dictatorship. At that point of transition, the popular mandate for political democratisation was clear, but this was not the case for what economic agenda would be implemented. This provided an opening for an informal coalition of academics, government bureaucrats, and the private sector to push for a programme of radical market reforms. In a way, this reform agenda provided the incoming government with an economic perspective and concrete programme that contrasted with the Marcos regime. Since the growth of government enterprises and the heavy government regulations during the Marcos period were demonised as having fostered corruption and consolidation of political power, the programme of privatisation, deregulation, and scaling back of government gained legitimacy.

The Philippines went full steam with industry restructuring by passing into law in June 2001 the Republic Act 9136, or the Electric Power Industry Reform Act (EPIRA). This law unbundled the electric power industry into generation, transmission, distribution, and supply. It declared that generation is not a public utility operation, thereby carving it out from the constitutional requirements of franchise and nationality limitations on ownership. It required that all of the National Power Corporation's generation assets and

contracts with independent power producers be privatised and stripped the National Power Corporation of authority to build new capacity or enter into new supply contracts. EPIRA also created the National Transmission Company (TRANSCO) also expressly required by the law to be privatised. The implication of the importance of public ethos in government is that this is a major arena for political battle in the fight for public alternatives.

Unions should strive for solidarity with the community

The experience of electricity unions in Thailand, South Korea, and Indonesia was that their opposition to restructuring and privatisation was met with distrust from other groups. Eventually, however, it was demonstrated that a unified position can be forged. It would be best for electricity unions to develop solidarity with different sectors of the community at the onset (and not only during critical moments of crisis), for the union to internalise broader-based public objectives in addition to their private interests.

Financing is a major constraint

Electricity projects, particularly in generation and transmission, are characterised by very large start-up costs, with returns coming in over a long period of useful asset life. This makes project financing an inherently challenging characteristic of electricity projects. As borrowing is not always ideal, other alternatives introduce dilemmas to a public system. For example, while an IPP contract erodes the public in electricity provision, it can be a tempting option for a government utility facing power shortages, depressed financial capacity, pressure from international institutions, and willing project sponsors. It is easy for a government utility to regard IPP contracting as a no-other-option financing choice, especially if there is asset transfer from the IPP to the government utility at the end of the contract term. Here it is the contracting terms (allocation of market, exchange rate, and fuel price risks) that become crucial.

Another approach is the conversion to a stock corporation for partial privatisation to raise funds. Such corporatisation with divestment dilutes government ownership. Furthermore, the introduction of private ownership increases the need to conform to commercial standards, thereby limiting management flexibility to promote non-commercial objectives. However, by retaining majority interest, the government can retain control over management and keep a measure of political control and oversight. Also, partial divestment can be a strategy to in fact strengthen government electricity provision by facilitating financing, new investment, and strategic partnership. Clearly, however, a vote for public ownership necessitates developing more public-friendly modes of financing. Possible strategies are through strategic partnerships/cooperation with like-minded countries and reasonable use of government financial institutions.

Radical demand-side management and energy planning is a must

In the face of urgent environmental concerns and the financial burdens of ever-growing electricity systems, there needs to be aggressive regulation of the use of electricity by households and businesses. We should face the collective challenge of drawing the line between reasonable needs and excess, and between productive and wasteful use.

The role of an independent regulator needs to be re-examined

India represents an interesting case. With traditionally strong left-wing political parties and social movements, it makes one wonder how the ADB and World Bank unbundling models were carried forward, beginning in 1995, and sustained until it culminated in the national-level electricity law in 2003. Kale (2004) explains the turn of events as having to do with the severe macroeconomic crisis that India had to deal with in the early 1990s, along with a growing section of economists and policy makers inspired by the global market reforms and questioning the Nehru-era policies of centralisation and state ownership. Industrialists were also beginning to demand less state intervention in the sector.

But perhaps a facet of the unbundling model that has cushioned opposition of the privatisation aspect was the element of introducing an independent regulatory agency. Similar to the dilemma faced by the environmentalists in South Korea and Thailand (where unbundling was envisioned to emasculate an environmentally destructive monopoly by allowing entry of decentralised non-renewable systems), the setting up of an independent regulatory agency was seen by some public interest advocates as an improvement in the system of governance by allowing greater transparency, participation by the public, and accountability. The problem, however, is that an independent regulator has been designed mainly to meet the requirements of a privatised system. For public models, public participation, transparency, and accountability mechanisms can take the place of an independent regulator.

Alternatives must be able to deal with trade-offs

As we seek alternatives, we will not always be faced with neat answers. The forces opposing public alternatives often raise the reality of trade-offs with other public interest objectives to question their feasibility or reasonability. These questions must be met squarely, rather than avoided or overlooked. For example, if we propose a radical change to demand-side management in electricity, we have to spell out how we will deal with the possible loss of employment this could entail. If we push for decentralisation in certain aspects of electricity provision, we should be able to show how we address

possible losses in economies of scale and their resulting impact on the cost of electricity. If we advocate price subsidies, we need to explain how we can secure financial viability or fiscal capacity.

To conclude, electricity provision can be made to work under public ownership in an efficient, socially responsible, equitable, and environmentally sustainable manner. There is a choice. The challenge is to build social movements that will defend the public in everyday government policy and ultimately defend or reclaim the public ethos in government. This becomes plausible if labour groups, consumer groups, environmental advocates, progressive academics and scientists, and other public interest forces are able to work together to evolve a credible and politically powerful agenda for public electricity provision.

NOTES

1. TNB. www.tnb.com.my.
2. KEPCO. www.kepco.co.kr/eng.

REFERENCES

ADB (Asian Development Bank). 1995. *The bank's policy initiatives for the energy sector.* Manila: ADB.

———. 2000. *Energy 2000: Review of the energy sector policy of the Asian Development Bank*. Manila: ADB.

Bijoor, S., Greacen, C. and Greacen, C.S. 2007. Citizen-oriented power sector reform in Thailand. In *Integrated Environmental Policy Packages in the GMS Workshop*, pp.1–22. Bangkok, Thailand, 11–13 July, www.palangthai.org/docs/PowerSectorReformThailand-BlueMoon-Palang-Thai.pdf.

Byrne, J., Glover, L., Lee, H., Wang, Y. and Yu, J. 2004. Electricity reform at a crossroads: Problems in South Korea's power liberalization strategy. *Pacific Affairs* 77(3): 493–516.

CSP (China State Power). n.d. Power reform – Brief information. www.sp-china.com/powerReform/bi.html (accessed 21 April 2010).

FDC (Freedom from Debt Coalition). 2008. National study session: The quest for an alternative power industry reform programme in the Philippines. Quezon City, Philippines: FDC.

Funding Universe. 2009a. Company history: Electricity generating authority of Thailand. www.fundinguniverse.com/company-histories/Electricity-Generating-Authority-of-Thailand-EGAT-Company-History.html (accessed 21 April 2010).

———. 2009b. Company history: Korea Electric Power Corporation. www.fundinguniverse.com/company-histories/Korea-Electric-Power-Corporation-Kepco-Company-History.html (accessed 21 April 2010).

Gomez, E.T. 2009. The rise and fall of capital: Corporate Malaysia in historical perspective. *Journal of Contemporary Asia* 39(3): 345–381.

Greacen, C.S. and Greacen, C. 2004. Thailand's electricity reforms: Privatization of benefits and socialization of costs and risks. *Pacific Affairs* 77(3): 517–541.

HPPF (Healthy Public Policy Foundation). 2010. MSP survey data on electricity alternatives in Thailand. Mimeo.

IEA (International Energy Agency). 2010. Electricity access database. www.iea.org/weo/database_electricity/electricity_access_database.htm (accessed 22 September 2010).

Jomo, K.S. and Tan, W.S. 2003. Privatization and re-nationalization in Malaysia: A survey. Working paper. Kuala Lumpur, Malaysia: University of Malaya. www.unpan1.un.org/intradoc/groups/public/documents/un/unpan021546.pdf.

Kale, S.S. 2004. Current reforms: The politics of policy change in India's electricity sector. *Pacific Affairs* 77(3): 467–491.

KNEWU (Korean National Electrical Workers Union). n.d. Special report of KNEWU. Mimeo.

Malaluan, N.A. 2003. *The Philippine electric power industry reform: A tragedy of ADB and World Bank private sector fundamentalism and unaccountable government*. Quezon City, Philippines: AER (Action for Economic Reforms).

Manibog, F., Dominguez, R. and Wegner, S. 2003. *Power for development: A review of the World Bank Group's experience with private participation in the electricity sector.* Washington, DC: World Bank.

Mun, Y. 2004. Power sector reform in South Korea. In *Asia Power Sector Reforms Workshop* 2002, pp. 96–112. Chulalongkorn University Campus, Bangkok, www.prayaspune.org/energy/41_07korea.pdf.

Nakaya, N. 2006. China's socialist market economy and the reconstitution of state-owned enterprises. In JACSM (Japan Association for Comparative Studies of Management) (Ed.), *Business and society: New perspective for comparative studies of management*, pp. 28–41. Kyoto, Japan: Bunrikaku.

Nakhooda, S., Dixit, S. and Dubash, N. K. 2007. *Empowering people: A governance analysis of electricity.* Washington, DC: WRI (World Resources Institute).

NEPO (National Energy Policy Office – Thailand). 2000. Electricity supply industry reform and Thailand power pool. www.eppo.go.th/power/FF-E/pw-reform-1-main-E.html (accessed 29 March 2010).

Nuntavorakarn, S. 2002. The reform of the electricity sector in Thailand: A civil society perspective. In *Electricity Sector Reforms in Asia Workshop: Experiences and Strategies*. World Social Forum, Mumbai, India, 19 January. www.prayaspune.org/energy/41_05thai.pdf.

Prayas. n.d. Maharashtra Intervention. www.prayaspune.org/peg/energy_pbl.php?cat_id=3&sub_cat_id=5&child_cat_id=1&#links (accessed 31 March 2010).

Sari, A.P. 2001. Power sector restructuring and public benefits. Word Resources Institute (WRI). www.pdf.wri.org/power_politics/indonesia.pdf.

Seymour, F. and Sari, A.P. 2002. Indonesia: Electricity reform under economic crisis. In Dubash, N.K. (Ed.), *Power politics: Equity and environment in electricity reform*, pp. 75–95. Washington, DC: WRI (World Resources Institute).

SIBAT (Sibol ng Agham at Teknolohiya). 2005. *Lessons from the field: An assessment of SIBAT experiences on community-based microhydro power systems*. Quezon City, Philippines: SIBAT.

TNB (Tenaga Nasional Berhad). n.d. About TNB: History. www.tnb.com.my/about-tnb/history.html (accessed 15 March 2010).

Tumiwa, F. 2004. Power sector restructuring in Indonesia: Viable solution or recipe for disaster? In *Asian Power Reform Workshops 2002*. www.prayaspune.org/energy/41_03indo.pdf (accessed 31 March 2010).

US Energy Information Administration. International energy statistics. www.tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=2&pid=2&aid=12 (accessed 8 September 2010).

Williams, J.H. and Dubash, N.K. 2004. Asian electricity reform in historical perspective. *Pacific Affairs* 77(3): 411–436.

World Bank. 1993. *The World Bank's role in the electric power sector: Policies for effective institutional, regulatory, and financial reform*. Washington, DC: World Bank.

———. Private participation in infrastructure database: Subsector data for Energy – Electricity. www.ppi.worldbank.org/explore/ppi_exploreSubSector.aspx?SubSectorID=3 (accessed 15 March 2010).

Yang, H. 2006. *Overview of the Chinese electricity industry and its current issues*. Cambridge Working Papers in Economics 0617. Cambridge, UK: Faculty of Economics, University of Cambridge. www.ideas.repec.org/p/cam/camdae/0617.html.

Yeh, E.T. and Lewis, J.I. 2004. State power and the logic of reform in China's electricity sector. *Pacific Affairs* 77(3): 437–465.

Zhang, X. and Parsons, J.E. 2008. *Market power and electricity market reform in Northeast China*. Cambridge, MA: CEEPR (Center for Energy and Environmental Policy Research).