Electricity Reform in Practice:
The Case of Thailand, Malaysia, Indonesia and the Philippines

By

Deunden Nikomborirak
And
Wanwiphang Manachotphong

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1. Background

Throughout the past decades, the Thai electricity sector has been through various stages of development. Dated back in 1960, the country formed three government-owned enterprises in order to deliver electricity throughout the country. The Electricity Generation Authority of Thailand (EGAT) responsible for power generation and transmission. The Metropolitan Electricity Authority (MEA) responsible for distribution in Bangkok and vicinity and the Provincial Electricity Authority (PEA) responsible for distribution to the rest of Thailand. By 1970's the three entities were self-regulated, but were obliged to some financial requirements from the Ministry of Finance (Greacen and Greacen, 2004). EGAT took the sole responsibility on electrification in Thailand and drew funds from various sources including the World Bank and bilateral lenders from various countries (Greacen and Greacen, 2004). In 1992, Prim Minister Anand Panyarachun’s government legalized private participation by allowing Independent Power Producers (IPPs). In 1999, EGAT suffered from the Asian financial crisis and had to divest one of its most profitable plants in the Stock Market of Thailand (SET). In 2000, the country started the idea of full restructuring of the electricity supply industry along the lines of the UK power pool model but the plan was drop in 2001 when Prim Minister Thaksin came into power. The Thaksin's government aimed to create national champions in all sectors. This involves so-called “privatization without liberalization” of state-own enterprises including EGAT, MEA and PEA. The privatization was strongly opposed by the employees’ labor union. They claimed that privatization would lead to higher price, nontransparent allocation of shares to cronies and take over by foreigners (Thomas, 2006). After a series of protests and strikes, the government called a halt to the privatization plan. As in 2007, the government still has no explicit plan on what to do with the electricity industry development.

Electricity is one of the most important facilitating modern activities and country’s development. Through time, the importance of electricity to people’s life has only increase. On this ground, more efficient and reliable provision of electricity is desirable for the society. This paper first examines past and present development of the electricity sector in four Southeast Asian countries—Thailand, Malaysia, Indonesia and the Philippines. It then, discusses lessons learned from the past experiences and provides policy recommendations for the four countries.
2. Development of the Electricity Sector – from past to present

In developing countries, the surge of high demand for electricity began after the World War II. Electricity was one of the most crucial infrastructures facilitating modern development and industrialization. With advices and supports from the cold-war superpowers and multilateral development agencies, especially the World Bank, many developing countries adopted the state-led model and established their state-owned electricity enterprise (Williams and Ghanada, 2006). Thailand, Malaysia, Indonesia and the Philippines were among them. Prior to the late 1980’s, electricity production and transmission was owned by a state-own monopoly: EGAT in Thailand, National Electricity Board (NEB) in 11 peninsula states of Malaysia, Sabah Electricity Board (SEB) and Sawawak Electricity Supply (SESCO) in Borneo states of Malaysia, Perusahaan Umum Lishtrik Negara (PLN) in Indonesia and National Power Corporation (NAPOCOR) or (NPC) in the Philippines.

In these countries, development of electricity sector varied by speed and direction. The fact that Indonesia and the Philippines contain several small islands makes electricity distribution difficult. In 1990, electrification rate was 37.3 percent in Indonesia, 54.6 percent in the Philippines and 92.7 percent in Thailand (World Bank Publication, 1994). High electricity demand due to rapid economic growth in the cities also caused electricity blackouts during the peak hours (Sharma et al., 2004).

Facing financial constraint, the government of Indonesia and the Philippines had to legalize IPPs to produce additional electricity supply. In 1989, the Philippines was the first of the four countries to allow independent power producers (IPPs). By the end of 1993, more than 25 IPPs were producing electricity in the Philippines and the power shortage problem was resolved (Abrenica, 2004). Similarly, the Indonesia granted the first IPP contract in 1990 and allowed 25 additional IPP projects by 1997 (Seymour and Sari, 2002). Power shortage in Java-Bali area was resolved but the country still needed more electrification in the rural area. In 2004, the World Bank estimated that only 67 percent of Indonesian households had electricity (World Bank Publication, 2005).

Around the same time frame, the state-owned electricity authority in Thailand and Malaysia managed to provide electricity to nearly 100 percent of their rural communities (Smith, 2003). The introduction of IPPs in these two countries, was thus, not urgently needed. In Malaysia, IPPs were first allowed to augment the country’s electricity reserve in cases of unprecedented blackouts and peak-load power shortage (Smiths, 2003). In Thailand, EGAT managed to guarantee adequate power supply in the country. Thus, IPPs were introduced as the first step towards liberalization and privatization of the electricity sector.

Other than the introduction of IPPs, privatization through corporatizing of the state-owned electricity enterprise took place in Malaysia. Following a Privatization document in 1985 and a Privatization Masterplan (MPM) in 1991, the government reestablished NEB as Tenaga
Nasional Berhad (Tenaga). In 1992, the company sold 30 percent of its shares in the Kuala Lumpur Stock Market. The remaining shares are owned by the government who has control over many policy areas (Smith, 2003).

As in 2007, the electricity industry in Thailand, Malaysia, Indonesia and the Philippines is still highly vertically and horizontally integrated. The generation is still operated by either a state-owned monopoly (Thailand, Indonesia and the Philippines) or a corporation heavily controlled by the government (Malaysia). At the wholesale level, there is very little to no competition. Transmission is generally monopolized. Distribution is monopolized in Malaysia and locally monopolized in Thailand, Indonesia and the Philippines. Next, we evaluate privatization and reform policies adopted by the four countries.

3. Electricity Reform in Practice

When we abstract away from market imperfection—i.e. political influences and transaction costs—competitive conduct and higher efficiency could be achieved. To promote competition in the wholesale market, the government could privatize the state-owned enterprise, split it into smaller companies and let those companies compete in a competitive manner with all other IPPs. As for the retail market, the government could allow more companies to serve this function. Competition is believed to result in higher efficiency and lower price.

In reality, the electricity industry is very complex. First of all, the monopoly state-owned enterprise is subject to much control from the government. The rational behind many policies adopted in the past could be explained by pure politics. Second of all, electricity production requires high initial investment and takes a long time to break even. In developing countries, where the government still wants to attract private investors into the production field, rigorous competition could discourage them. Third of all, restructuring, unbundling and break-up of companies are often time irreversible. It takes time and has to be well-planned because unsuccessful outcome could result in great and unnecessary lost.

Taking into account the above complexities, we will evaluate market liberalization and electricity reform policies adopted by Thailand, Malaysia, Indonesia and the Philippines. Following Thomas(2006) this paper analyze the five following aspects:

1) Privatization
2) Wholesale competition
3) Retail competition
4) Unbundling
5) Introduction of independent regulation
3.1. Privatization

In theory, privatization could lead to the following achievements: 1) private companies are subject to less counterproductive interference by the government, 2) if the government is financially constrained, privatization is a means to raise money and 3) foreign private investors could bring skills and technology to the country (Thomas, 2006). In practice, however, those achievements are not always realized. Factors such as politics and inefficient contracts can lead to anti-competitive and efficient conducts.

In Thailand, Malaysia, Indonesia and the Philippines, privatization took two forms. One is through allowing IPPs and another is through privatizing the state-owned enterprise. We next discuss each of these issues in detail.

3.1.1. IPPs

During the late 1980’s to early 1990’s, the government of Thailand, Malaysia, Indonesia and the Philippines legalized IPP to allow private participation in the electricity sector. The Philippines was the first among the four countries to allow IPPs. During the late 1980's and early 1990's, the country's rapid economic growth led to high electricity demand. Blackouts of up to 10 hours were common and their economic cost was substantial (Sharma et. al., 2004). In 1989, the first IPP contract was signed. By the end of 1993, more than 25 IPPs were producing electricity in the Philippines and the power shortage problem was resolved (Abrenica, 2004). However, inequitable contracts and brought about large financial burden to the government (Abrenica, 2004). In 2001, about 41 percent of electricity is produced by IPPs and the rest by NAPOCOR (Woodhouse, 2005).

In 1992, lightning struck a transmission facility in Malaysia and caused a severe blackout. Fearing that this would hurt the country’s reliability and reduce investors’ confidence, the government allowed IPP to enter the market in order to increase reserved capacity (Smith, 2003). IPP contracts were granted without any bidding process to family and friends of Dr. Mahathir, the Prime Minister (Smith, 2003). This led to agreements that greatly favored the IPPs, leaving big financial burden to the government. In 2006, about 43.3 percent of electricity is produced by IPPs and 56.7 percent by Tenaga (Tenaga annual report, 2006).

For Indonesia, the first IPPs contract was signed in 1990. Between 1994 and 1997, about 25 additional contracts were granted (Seymour and Sari, 2002). The introduction of IPPs changed the situation in Java-Bali area from shortage to overcapacity, but electrification in the rural area was still only 51 percent in 1996 (Seymour and Sari, 2002). The majority of the IPP biddings were nontransparent. Contracts were usually granted to those who had connections to the President’s family and greatly favor the project investors (Seymour and Sari, 2002). In 2002, about 8.6 percent of electricity is produced by IPPs, about 33.4 percent is captive power by manufacturers (World Bank publication 2005), and about 58 percent was produced by PLN (Seymour and Sari, 2002).
In Thailand, IPPs were allowed in response to the country’s policy to promote privatization (Greacer and Greacer, 2004). IPP contracts were granted through competitive bidding process. Nevertheless, terms of contracts still contain similar clauses that greatly favor the IPPs. After the Asian financial crisis in 1997, EGAT was unable to meet the obligations to guarantee payment to IPPs. In 1999, it had to divest the Ratchaburi plant, one of its most profitable plants, through the Stock Market of Thailand (Greacen and Greacen, 2004).

3.1.2. Inequitable Contracts

Inequitable IPP contracts cause great financial burden to the government of four countries. The take-or-pay clause, which forces the government to buy all the unutilized energy, caused the state-owned enterprise to shutdown its plants and buy electricity at higher prices from some IPPs when demand was low. Moreover, it has put the government into large debt during the 1997 Asian financial crisis. The situation worsened when countries faced currency devaluation but payment is dollar-pegged. In Indonesia, PLN went bankrupt (Seymour and Sari, 2002). In Thailand, Malaysia and the Philippines, their state-owned enterprises had to bear great financial burden.

The cause of inequitable contract is both technical and political. As Abrenica (2004) points out, inequitable contracts could be results of time pressure and lack of experience. Thus, more rigorous analysis should be adopted to improve equitability. The government should use past experience to estimate more appropriate contract terms. The take-or-pay clause should be used with some capacity limit. Payment should be less depended on foreign exchange rates. Contracts should be renegotiable.

In many cases, however, the problem is rather political than technical. In Indonesia and Malaysia, IPP permits were usually granted to those who had connections to the country’s leader and cronies (Smith, 2003) (Seymour and Sari, 2002). In Indonesia, most bidding processes for IPP permits were unsolicited and nontransparent (Seymour and Sari, 2002). In Malaysia, there was no bidding and contracts were negotiated after permits were granted (Smith, 2003). Here, efficient and equitable contracts may not have been the objective in the first place.

3.1.3. Privatization of the State-owned Enterprise

As in 2007, Malaysia is the only country who privatized its state-owned enterprise. In 1990, the NEB was reestablished as Tenaga. In 1992, the government sold 30 percent of the company in the Kuala Lumpur Stock Exchange. The rest of the stake was still owned by the government who has control over many policy areas including management, pricing and development activities (Smith, 2003). The privatized shares were distributed to those with connections to the government and cronies, while opposition parties did not receive any (Smith, 2003). Tenaga’s initial public offering (IPO) price was highly undervalued. The price was RM 4.50 when it was first listed and went up to about RM 8.75 on the next day. The amount of
money which could have been realized by the government was estimated to be about RM 2.5 billion (US$ 1 billion) (Smith, 2003).

Thailand has not privatized EGAT, but the urgent need of financial resource during the Asian financial crises forced the authority to sell off one of its most profitable plants—the Ratchaburi plant. Although the share distribution was more transparent than in the case of Malaysia, Greacer and Greacer (2004) points out that the IPO price was also underestimated. The price started off at 13 THB per share on the first day and went up to 38 THB in two years.

In comparison to Malaysia, the divestment of EGAT’s plant provides a better means to stimulate competition in the industry. If the wholesale market becomes contestable, the divestment in Thailand has created a potential competitor as well as lessened the dominant power of EGAT. In the case of Malaysia, Tenaga would still be as big as before. Without any regulation, a private monopoly company may abuse its dominant power to maximize its shareholders’ benefit. This could result in restriction of electricity supply and higher electricity price.

Privatization of EGAT was actually planned to take place in early 2000. However, it was strongly opposed by the powerful EGAT’s employees union. They claim that privatization could result in higher electricity prices, nontransparent allocation of shares to cronies and risk of foreign takeover (Thomas, 2006). In early 2004, the union’s protests and strikes caused the government to surrender (Greacer and Greacer, 2004).

3.1.4. National Champions

During the Thaksin's administration, the country was put through many reforms in order to achieve rapid economic growth. The attempt to privatize state-owned enterprises and convert them into "National Champions" (or privatization without liberalization) was one of them. By selling those enterprises in the stock market, the economy can count the value of the companies towards GDP, thus rendering an easy way to boost the GDP growth rate. Privatization under the national champion scheme was by no means to enhance competition. According to Greacen and Greacen(2004) Thaksin "ruled out the idea of creating a competitive market for fear that foreigners would come to take stakes in power plants and electricity price [would] soar" (Greacen and Greacen, p.535).

Thaksin’s “privatization without liberalization” policy does not necessarily result in efficiency and higher social surplus. In fact, if the privatized company’s objective is to maximize shareholders’ profit, privatization could lead to higher electricity price and reduce social surplus.
3.2. Wholesale Competition

The legalization of IPPs in Thailand, Indonesia, Malaysia and the Philippines provides a good foundation to promote competition in the wholesale market. Currently, however, IPPs directly supply to the national electricity authority under inflexible long-term bilateral contracts. There is very little to no wholesale competition in the wholesale market.

In 2000, the Thai government approved the plan to restructure the electricity sector by following the UK power pool model (Greacer and Greacer, 2004). This would require all power producers to sell their electricity to a power pool, who then sell electricity to distributors. EGAT strongly opposed this plan unless it was allowed to split into no more than two companies. In 2001, when Prim Minister Thaksin was elected, the power pool plan was abandoned.

The abandonment of the power pool model does not necessarily mean that Thailand has forgone a good opportunity to achieve efficiency. In fact, it hasn’t been proven in any country that sustainable and efficient wholesale competition (in the electricity market) can be achieved (Thomas, 2006).

Encouraging competition in the wholesale market is risky when the market is not mature and there exist dominant sellers. Negotiation failure between sellers and buyers can lead to power shortage. Abuse of dominant power by big sellers can drive smaller firms out of the market. In the case of UK, Norway, Alberta and California, failure of market reform is resulted by “market power abuse of a few dominant sellers” (Woo et al., 2003). Thus, as long as the markets in Thailand, Malaysia, Indonesia and the Philippines are still dominated by a state-owned monopoly, competition in the wholesale market should not be enforced.

3.3. Retail Competition

Providing choices of retail services has not been taken seriously in Thailand, Malaysia, Indonesia and the Philippines. This is because the countries have been focusing on delivering electricity to rural communities and guaranteeing peak-load supply in the cities.

3.4. Unbundling

Unbundling of the four functions of the electricity sector–generation, transmission, distribution and retail–has been taken into consideration when countries make plans for privatization. In 2001, the Philippines government approved of a full privatization of the electricity sector through the Electricity Power Industry Reform Act (EPIRA) (Thomas, 2006). This includes unbundling generation, transmission, distribution, and retail services. As in 2007, the Philippines has already split the National Transmission Company (TRANSCO) from NAPOCOR. Both TRANSCO and NAPOCOR will be privatized, but the implementation has been delayed (Thomas, 2006).
For Thailand, the privatization strategy similar to the UK power pool model was approved in 2003. The government planned to split EGAT, PEA and MEA into separate companies (split generation from distribution). Transmission would be operated by EGAT’s subsidiary company called TRANSCO. In the retail market, competitive and non-discriminatory conducts will be promoted (Greacer and Greacer, 2004).

Though requires hard work and big organizational change, unbundling itself is unlikely to result in substantial efficiency gain if each function of the sector remains uncompetitive (Thomas, 2006). In the case of Thailand, Malaysia, Indonesia and the Philippines where competition in both wholesale and retail markets is still at the primary stage, it should be best for the government to first focus on developing sustainable competition and efficiency of those functions.

3.5. Introduction of Independent Regulator

Since competition in the electricity sector is far from perfect, a regulatory body is needed to mimic competitive market conducts, promote efficiency and ensure fair practices. To achieve such outcomes, a regulatory body should be independent from political influences and understand complex conditions and problems of the electricity sector in each market. So far, none of the four countries has established a regulatory body to serve such functions.

4. Summary and Conclusion

In this paper, we first examine development towards liberalization and privatization of the electricity sector in four Southeast Asian countries-Thailand, Malaysia, Indonesia and the Philippines. During the late 1980’s to early 1990’s these four countries started to legalize IPPs to promote private participation in the electricity generation field. These IPPs alleviated the power shortage problem in Indonesia and the Philippines and served as an initial step towards market liberalization in all four countries. Since power plants are expensive, electricity demand is unpredictable and it could take a long time for the company to breakeven, the government had to provide them some insurance for healthy profit. This includes take-or-pay, dollar-pegged payment, and guaranteed rate of return clauses. Throughout the past decade, especially right after the Asian financial crisis in 1997, the governments have been struggling to meet these obligations.

It is, however, possible for the government to achieve more equitable contracts through renegotiation. Lessons learned from past experiences reveal that the take-or-pay and dollar-pegged clauses are very risky. When countries are hit by unforeseeable economic crisis and reduction in demand for electricity, the governments would have no choice but to pay for unutilized capacity. If the payment is in other currencies, currency devaluation would result in even greater loss. Here, contract renegotiation is a means to achieve equity. In the Philippines, the government renegotiated some of their IPP contracts and believed to have saved at least US$ 1 billion (Thomas, 2006).
In many cases, however, equity may not have been the objective in the first place. IPP permits in Malaysia and the Philippines are mostly granted through nontransparent processes to investors with connections and cronies (Smith, 2003) (Seymour and Sari, 2002). The permit winners usually received contract terms that greatly favor them. Here, although it is possible for the government to cut their loss through renegotiation, they may not choose to. Apart from the complexity of the electricity sector itself, politics is also an important cause of inefficiency.

Other than the legalization of IPPs, market liberalization through other means in the four countries has been limited. We analyzed the electricity sector liberalization in five aspects—privatization, wholesale competition, retail competition, unbundling and introduction of independent regulation. The idea to progress towards each of these aspects has long been discussed in all the countries. However, the implementation has been very slow. In Thailand, privatization of the state-owned enterprise has been strongly opposed by the EGAT’s employees union. They claimed that it could lead to higher electricity price, nontransparent allocation of shares and takeover by foreigners. In Malaysia, the government corporatized 30 percent of Tegana. The company is still mostly controlled by the government and the corporatized shares were allocated people with connections and cronies. In Indonesia and the Philippines, privatization of PNL and NAPOCOR has been planned, but not yet executed.

Privatization would be useless if it does not bring about any competition and efficiency gain. In Malaysia, liberalization of Tenaga did not increase competition in the wholesale market and did not necessarily promote efficiency. It seems that the only obvious result was wealth transfer from the public to shareholders. In the case of Thailand, Thaksin’s privatization without liberalization of EGAT is likely to yield a similar result. If competition and efficiency are not achieved, any form of privatization would be meaningless.

Wholesale and retail competitions are still not yet developed in the four countries. This might be because the current market structure does not facilitate wholesale competition. As long as the state-owned monopoly has not been privatized and divested into smaller companies, the monopoly will tend to abuse its dominant power (Woo et al., 2003). As for the retail market, competition and more choices could help increase consumer’s surplus. However, as long as privatization and wholesale competition has not been implemented, retail competition is unlikely to result in much gain. As for unbundling, without competition in the wholesale and retail markets, the process would not be meaningful.

An independent regulator is what all the countries need. However, the process of establishing one is not easy. First of all, the government of Thailand, Malaysia, Indonesia and the Philippines need to let the regulator be independent of all the political influences. In these countries where politics plays a very important role in the electricity sector, the process of establishing an independent regulator could be difficult if not impossible. Second of all, an effective regulator must have a comprehensive understanding of the electricity sector (both in
general and in its specific country). It takes a long time for the regulator to learn and acquire expertise to become effective (Thomas, 2006).

From the past experiences, we learned from Thailand, Malaysia, Indonesia and the Philippines that electricity reform is a very delicate issue. For most countries in the world, privatization and market liberalization are adopted as means to achieve the sole objective of reform—highest achievable efficiency. For the four countries discussed in this paper, efficiency was usually overlooked or used as an excuse to fulfill many political objectives. In Thailand, for example, the Thaksin administration almost privatized EGAT without liberalizing it (i.e. without splitting up the company). As discussed earlier, it is unlikely that this process would result in higher efficiency. Here, an independent regulatory body could help emphasizing the real objective of reform. Although the process of establishing one could be long and difficult, the gain from well-planned policies and higher efficiency is worth it.
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