

Infrastructure in Thailand Privatisation and Increasing Private Sector Participation

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Introduction

During the past two decades, Thailand experienced economic growth averaging more than 8% per annum (roughly four times as rapid as the growth in the United States over the same period). Huge amounts of foreign capital flowed into the region, and financial regulation was weak. Financial institutions engaged in astonishingly unsound investments, and currency speculators were buying massive quantities of Thai currency (the baht). In the summer of 1997, the major source of Thailand's GDP, its exports to its Asian neighbors, began to fall, and the Thai government was forced to devalue its currency. Currency speculators began dumping their stores of Thai currency, and the baht's value plummeted. In July 1997, Thailand's bubble economy burst, and the economic downturn has affected everyone from low-income workers to the affluent businessmen and government. The current situation is, in fact, so dire that it leaves nothing but gloom for the future of Thailand.

Thailand initiated a recovery plan with the acceptance of a \$17.2 billion bailout from the International Monetary Fund. As part of the agreement, the IMF has designated that state utility enterprises should be privatized¹ in order to help generate credibility, reliability, and efficiency of the nation's utility services.

During Thailand's peak economic growth, utility and infrastructure development unsurprisingly lingered behind the private sector. Private participation in the utility provisions was underway in the field of electric power, telecommunications and water, but most utilities remained government-owned. The current picture of utility regulation in Thailand is therefore a transitional one, reflecting the old economic order with an overlay of privatisation. As a result of the loan conditions from the IMF, eventually all of Thailand's utilities will become privatized.

In addition to economic recovery, Thailand aims to become a business hub for the Greater Mekong Subregion (including Thailand, Vietnam, Southern China, Cambodia, Lao PDR, and Myanmar). To follow the IMF recovery plan and return to rapid economic growth requires the removal of bottlenecks and the building of a more efficient infrastructure. The Thai government and the IMF recognize that to achieve these they must support business demands for electricity and telecommunications by improving Thailand's infrastructure. The private sector will play a key role in this process.

This paper provides general information about the electricity, gas, water and telecommunications sectors in Thailand, and describes the state enterprises' plans for privatization. In addition, in order to provide the readers with a better understanding of the public utility systems in Thailand, this paper will introduce some of the direct investment opportunities for private sector in public utility developments of the electricity, telecommunications, water, gas sector.

¹ The IMF conditions require their shares be offered to foreign investors before local ones mainly due to the financial stability in the long run.

Thailand : Industry Structure and Regulation

| | Electricity | Gas | Telecommunications | Water |
|------------------------|---|-------------------------------------|---|--|
| Industry Structure | Regional monopolies, vertically integrated ; IPP/SPP programme | Monopoly | 2 dominant firms | State enterprises Royal Irrigation Department of the Ministry of Agriculture And Cooperative |
| Companies involved | EGAT Electricity Generating Authority Of Thailand ; MEA Metropolitan Electricity Authority ; PEA Provincial Electricity Authority | PTT Petroleum Authority of Thailand | TOT Telephone Organization of Thailand ; CAT Communications Authority of Thailand ; Private providers on BTO basis | East Water ; municipal enterprises ; Metropolitan (MWA) And Provincial (PWA) Waterworks Authorities |
| Main legal documents | EGAT Act 1968 ; PEA Act 1960 ; MEA Act 1968 ; Cabinet Resolution 1992 (NEPO restructuring plan) | PTT Act 1978 | Telegraph and Telephone Act BE 2477 (1934) ; Telephone Organization Act BE 2497 (1954) ; Radio Communications Act BE 2498 (1955) ; Communications Authority Act | MWA Act 1967 ; PWA Act 1979 |
| Regulatory bodies | NEPO National Energy Policy Office ; EGAT ; MEA ; PEA (self-regulation) | PTT is state Agency | PTD Post and Telegraph Department | Public Works Department of the Interior Ministry, Industrial Estates Authority ; Royal Irrigation Department |
| Competition regulation | IPP tenders | No competition | Exists in an attenuated form | East Water with Relatively more Autonomy ; tenders for Private participation |
| Price regulation | Administrative setting By Cabinet upon Recommendations of National Energy Policy Council | Administrative price setting | | Administrative price setting. Cost based. |

Gas

Thailand's commercial energy consumption is predicted to grow approximately 55% between 1996 and 2001. Gas demand is expected to rise rapidly due to its widespread use for power generation since the early 1990s.

Petroleum Authority of Thailand (PTT), a state agency sanctioned by PTT Act 1978, has a complete monopoly over the industry. PTT's operation complies with its mission of creating a fully integrated petroleum business for energy and economic stability. Additionally, PTT develops downstream industries and submits a substantial amount of state remittance, while shouldering massive investment costs.

PTT procures adequate crude and oil products to meet the increasing energy demand. Currently, 73% of natural gas procured is used as fuel to generate power; approximately 17% is used as feedstock in gas separation plants; and the remainder is used by industry. PTT has tried to serve the incremental demand by contracting for gas supplies within the country and neighboring areas including gas fields in the Gulf of Thailand (Pailin and Bongkot), the Gulf of Martaban off the Myanmar coast (Yadana and Yetagun fields) and in Thai-Malaysia Joint Development Area. Other sources are in preparation stages in the upcoming future including setting up a joint venture, Thai LNG Power Co. to import Liquefied Natural Gas (LNG) from Oman.²

PTT has sustainably improved the quality of oil products to facilitate environmental preservation and air pollution reduction. The first to decrease the lead content in gasoline, PTT imported high speed diesel with lower than 357c distillation point and fuel oil with sulfur lower than 3.5% in 1988, prior to the government regulations.

As a major agency responsible for replacing imported oil with natural gas, PTT will construct the Natural Gas Separation Plant Unit III in Rayong Province, and Unit IV in Khanom district of Nakhon Si Thammarat province. These plants are expected to cover the increasing demand of LPG.

After penetrating the oil market in Indochina (i.e. Laos, Cambodia, and Vietnam), PTT plans to develop an organization for international trade, emphasizing direct trade with producers and crude processors overseas. This internationalization can increase managerial flexibility and organization income. PTT plans to include leasing tanks and oil reserve storage abroad, as well as establishing overseas representative offices. At the same time, PTT plans to supply natural gas from neighboring countries and import liquefied natural gas from Brunei.

PTT, as monopoly supplier, has had an impact on utility regulation in the field of independent power production. PTT refused to provide fuel supply guarantees to private consortia that were themselves obliged to give such guarantees to the state power off-taker. After a stand-off period, a compromise was reached, allowing the plans for a privately financed gas-fired generating plant to proceed.

² LPG (Liquefied Petroleum Gas) is used extensively by retail customers for cooking. PTT sells LPG at a set price to a number of companies including Caltex, Esso, Shell, Siam Gas, Unique Gas, and World Gas who distribute the gas sale in canisters under their brand names at a government-determined price.

Water

In the past, the water industry in Thailand was generally managed and controlled by state enterprises. The central bodies are the Royal Irrigation Department of the Ministry of Agriculture and Co-operatives, the Public Works Department of the Interior Ministry, the Industrial Estates Authority of Thailand, and the Metropolitan and Provincial Waterworks Authorities.

Since 1992 the government has been trying to stimulate private sector involvement in the water industry. So far, the most significant development has been the creation of East Water (Eastern Water Resources Development and Management Co., Ltd.). East Water is licensed to undertake raw water distribution in the fast growing industrial areas of the Eastern Seaboard.

The wastewater treatment sector remains in its beginning stages with metropolitan authorities responsible for treatment and disposal.

Geographical location determines which agency is in charge of a water district. MWA (Metropolitan Waterworks Authority) handles Bangkok and two neighboring provinces (Nonthaburi and Samutprakan) situated on each side of the Chao Phraya River (the main river of Bangkok) while PWA (Provincial Waterworks Authority) looks after the rest of the country.

PWA and MWA supply the majority of residential and industrial customers. In some provincial areas, municipal authorities or local communities have also provided water supplies. PWA will take over these responsibilities according to the agreement with local bodies. Water supply for agriculture is obtained directly from the Royal Irrigation Department, not by the Waterworks Authorities. The two waterworks are autonomous; however, the Cabinet approves important decisions before they are implemented.

The calculation for determining the price of water is based on a combination of operating cost and depreciation. Thailand is a flat country, so water in many areas must be pumped up using electric pumps, which substantially increases the operating cost. Water pricing is a politically sensitive issue; therefore, price increases must first pass the Panel of Economic Ministers and then receive Cabinet approval.

The Thai water industry is being privatized in two ways. First, East Water will handle the development of water resources for and the supply to the industrial estates of the Eastern Seaboard. Recently, the company transformed into a public company, and increased its paid up capital in anticipation of a floatation and stock exchange listing in mid 1997. East Water also plans to diversify into the related areas of wastewater treatment, steel pipe manufacturing, and water constancy. Second, the private sector will finance, build and operate new facilities for PWA. PWA has already privatised two substantial water-supply projects and is planning further partial or full privatisation of new and existing water treatment/water supply plants. Other activities such as maintenance maybe opened to specialized private sector companies in the future. In addition to the MWA, there are plans to set up a new company to develop and operate the Mahasawat water treatment plants. It also plans to outsource more of its activities.

Public wastewater treatment in Thailand is undeveloped. In fact, the only municipality to have treatment capacity is the seaside resort of Pattaya. New wastewater treatment facilities initially come under the authority of the Public Works Department, which deals with planning and development. After sewers or other facilities have been constructed, responsibility for operation and maintenance belongs to the relevant municipality. Once a plant is completed, disposal of waste becomes a more important issue. The Pollution Control Department of the Ministry of Science, Technology and Environment has invested in researching several waste treatment projects. It is anticipated that the private sector will be involved in these projects.

Telecommunications

Telecommunications, a critical component of an effective infrastructure, should promote business communications and lead to economic development in regions. In 1881, Thailand installed its first telephone; five years later, the Post and Telegraph (PTD) was founded. In 1912, a royal decree founded the Ministry of Communications; this ministry (since 1941: the Ministry of Transport and Communications “MOTC”) retains overall authority for telecommunications.

The overall objectives of the Ministry of Transport and Communications (MOTC) are to :

- Increase private sector participation
- Increase technology transfer
- Increase local R&D and manufacturing capabilities
- Increase the level of investment in the rural areas
- Meet market demand

Two state enterprises now hold the main operational and regulatory responsibilities:

- 1) *The Telephone Organization of Thailand (TOT)* operates all national telecommunications and also provides communications services to countries immediately bordering Thailand, including Laos, Cambodia, Myanmar, and Malaysia; and
- 2) *The Communication Authority of Thailand (CAT)* handles the postal services and operates all international telecommunications services outside of the countries covered by the TOT.

In addition to their primary roles, the two organizations compete in value-added networks and cellular telephones. A third organization, the Posts and Telegraph Department (PTD) was the government department responsible for all telecommunications in Thailand prior to the TOT. This organization now manages all of Thailand’s radio frequencies.

Typically, the total number of telephone lines to be installed is set by the TOT, the Ministry of Communications, and the National Economic and Social Development Board (NESDB). A national plan includes the targeted number of new lines.

In order to stimulate telecommunications investment, which has been minimal in the last decade, the MOTC has allowed TOT and CAT to issue licenses for private sector companies to participate in telecommunications industry on a Build Transfer Operate (BTO) basis. Under BTO, the private company finances, installs and operates the service for a fixed term of years. The state enterprise owns assets upon construction and also benefits from a revenue sharing arrangement.

In 1988, TOT, CAT and PTD entered into a public-private cable & wireless venture with two of Thailand’s most affluent families (the Sophonpanich and Srifeungfung groups) to offer a VSAT service. Since this agreement was signed, the PTD, the TOT, CAT and several other private sector groups finalized Build/Transfer/Operate agreements to provide services including wireline, cellular phones, public pay phones, long distance fiber optic lines, cordless phones, satellite, data transmission, video, paging, trunk radio, and telephone directory publishing.

The more prominent of these agreements is the TOT concession for two million lines in Bangkok with Telecom Asia – a joint venture between Chorine Pokphand Group and Nynex

Corporation – and the concession for 1 million lines in the provinces with Thai Telephone and Telecommunications – a joint venture between Jasmine, Loxley and NTT of Japan. Other high profile concessions include the NMT 900 and GSM 900 concession between the TOT and AIS (a Shinawatra Computers and Communications Subsidiary) and the AMPS 800 and DCS 1800 concession between the CAT and Total Access Communications (TAC; a joint venture between United Communications and Motorola). These concessions have been granted through the formation of joint ventures within the legal framework governing telecommunications.

Thailand plans to install 7.1 million additional telephone lines before 2001. The development of technology in Thailand's basic infrastructure will also increase opportunities to provide advanced, value-added services. The existing mobile phone networks are rapidly expanding, including the one provided by the CAT. Nevertheless, a third and perhaps a fourth operator will commence operations in the near future. Additionally, several Thai companies have formed joint ventures to provide satellite mobile phone services in the future.

The Thai government adopted a liberalization process of telecommunications sector in 1994. Although the impact of this process has yet to filter down to the operating level, the Ministry of Transport and Communications recommended changes to the main acts governing the telecom sector. The critical act changes are in the TOT Act, the CAT Act, the Posts and Telegraph Act, and the Telephone and Telecommunications Act. These Acts have been improved to allow greater participation from the private sector on a more level playing field.

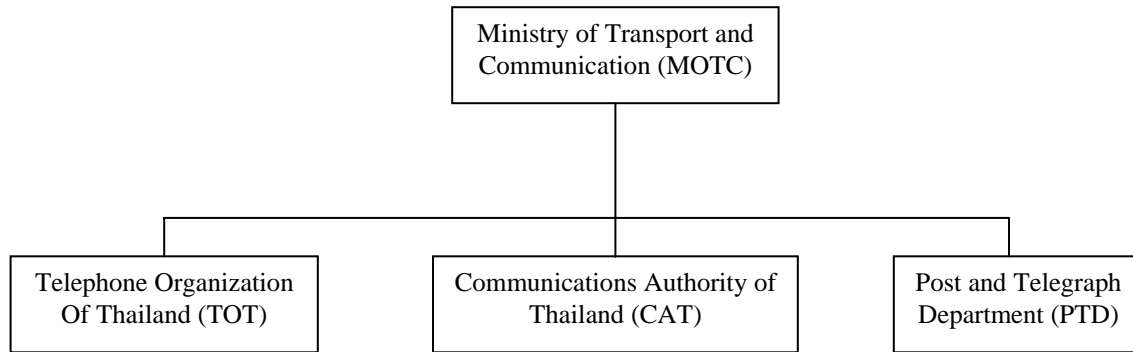
In addition to business activities, both TOT and CAT also exercise regulatory functions. When they are both privatized, some changes in the regulatory structure will occur allowing for their change in status. A common feature of all privatization plans is the creation of a new regulatory body, provisionally called the National Telecommunications Committee to be chaired by the MOTC. It has also been suggested that CAT and TOT be merged prior to privatization. If this occurs, the new company would be so powerful that it would require a very strong regulatory authority to enforce fair competition.

Under the new policy of liberalization, any organization that can perform both financial and technical capabilities will be able to bid for permission to operate telecommunications networks and services on a zone basis. These companies will then compete with the TOT. This leaves the TOT predominantly responsible for long distance interconnection facilities between each zone.

Besides the adoption of this liberalized process, it is expected that Thai Government will call bids for a total of 6 million lines to be installed by the 2001 to meet the requirements of the 8th National Plan, which has set the total of 12 million lines.

The growth of the telecommunications industry will be strong, since Thailand is a central hub of the Greater Mekong Subregion. This adds to the demand for not only basic telecommunications services, but also for sophisticated value-added services.

Areas of Responsibility in Thai Telecoms Industry



TOT Act (1954)

- Domestic Telephone Service
- Land Line Network
- Trunk Radio
- Public International Calls to countries with common borders
- Mobile Phone Network (ADVANC)

CAT Act (1977)

- International Long Distance (excluding neighboring countries)
- Postal Service
- Telex and Fax Services
- Monetary Services
- Mobile Phone Network (TAC)

Telephone and Telegraph Act 1934

- Radio Frequencies and Licenses
- Satellite Communications
- Represents Thailand in International Organizations-

Electricity

The electricity industry in Thailand is in a process of transition and the existing regulatory system will be subject to amendment during the 8th National Plan (1997-2001).

Three major state enterprises manage the electricity industry in Thailand. The Electricity Generating Authority of Thailand, "EGAT", is responsible for generation and transmission. Other two distribution enterprises are the Metropolitan Electricity Authority (MEA) and the

Provincial Electricity Authority (PEA), the latter having responsibility for the whole country except Bangkok, Nonthaburi and Samutprakan.

EGAT, established under the EGAT Act 1968, operates under the Office of the Prime Minister to nationalize and consolidate the functions and responsibilities of three independent state enterprises – the Yanhee Electricity Authority (YEA), the Lignite Authority (LA), and the North-East Electricity Authority (NEEA). EGAT is now solely responsible for all electric power production as well as keeping pace with the growing demand for electric power. EGAT's main responsibility is to provide electric energy for the whole kingdom by generating, transmitting and selling the mass energy to distributing entities (the MEA and the PEA), other energy consumers as prescribed by the Royal Decree, and neighboring countries. It also undertakes businesses related to the production of electric energy or that contribute to EGAT's operation.

To comply with the above objectives, EGAT's activities encompass the development, construction, and operation of dams, reservoirs, and power plants of various types. It also oversees transmission systems and substations, the production of lignite and its by-products, formulating policies concerning the production and sales of electricity, lignite and lignite by-products.

Prior to 1992, all major power generating facilities in Thailand belonged to EGAT. In May 1992, the Electricity Generating Company (EGCO) incorporated, and in November 1994 acquired the Rayong Power Station from EGAT. The sale of Rayong Power Station to EGCO's subsidiary, REGCO, and the floatation of 51% of EGCO's ordinary shares in a combined domestic and international public offering, constituted the first step of privatisation of electricity in Thailand. Following a successful capital increase in May 1996 and a bond issue by its subsidiary KEGCO, the latter purchased Khanom Power Station from EGAT.

Thailand expects more private participation in the electric power industry, but only one aspect of the restructuring plan was approved in 1992. In that year, the government announced its intentions to encourage more private sector participation in power development due to the capital requirement, technology transfer, know-how management, operational ingenuity and efficiency of private sector. At the same time, private sector participation can also stimulate more competition in technology and plant location, and thus, reducing construction costs which will benefit consumers.

Thailand's deregulation plans call for Independent Power Producers (IPP) and small power producers (SPPs) to invest in power generation projects, in the form of both IPPs and SPPs, and to sell electricity to EGAT. The IPP Program provides the largest investment opportunity for private participation. Under this program, private companies will be allowed to build power plants to supply 4,100 MW by 2002 and 8,100 MW by 2006. In addition to the IPP program, EGAT has also invited SPPs to sell it electricity, which attracts companies that already produce energy for their own use or those with access to nonconventional fuels such as waste or residential fuels. To date, EGAT is expected to purchase power from seven IPP projects, with a total capacity of 5,944 MW, and from approximately 55 SPP projects, with an estimated total capacity of 2,500 MW. Purchasing power from IPPs and SPPs will reduce the EGAT's required investment by about 300,000,000 baht (approximately US\$7m). The projects described respond to the government's policy on joint development of energy resources with neighboring countries and on encouraging the private sector to invest in the IPPs and SPPs programs.

The official Power Development Plan of EGAT (PDP 95-01) is formulated based on the 1994 Load Forecast report³ and applies 25% reserved capacity from 2002 onwards. The plan

³ Prepared by Thailand Load Forecast Subcommittee.

covers 16 year period starting from 1996 to 2011. Additional installed capacity during such period will total 31,731.9 MW almost doubling the present capacity of 15,731 MW. At the end of 2011, the grand capacity of the system will be 46,765 MW. EGAT's long-term plan anticipates an additional net capacity of more than 30,000 MW by 2011. The investment plans of the Metropolitan and Provincial Electricity Authorities (MEA and PEA) are also very substantial.

Objectives and Overall Privatisation Policy

The main objectives of the participation of the private sector are to :

1. **Increase** competition, convey more efficiency, and provide sufficient energy at reasonable prices for consumers.
2. **Reduce** the government's investment burden as well as the public sector debt.
3. **Promote** the more efficient use of energy - such as demonstrated by SPP projects using the cogeneration system.
4. **Ensure** power users are provided with the best possible services, price levels and safety standards.
5. **Encourage** the general public's participation in the energy industry development of the country through the development of the capital market.
6. **Develop** the capital market.

Under the present economic condition, one of the most important objectives of privatisation is to reduce the national debt. Since the electricity industry and the natural gas industry are still natural monopolies, increasing the role of the private sector must promote competition and avoid the transfer of public monopolies to private sector monopolies. However, a number of state enterprises could be immediately privatised without any change in law. In certain cases, the state enterprises need to be corporatised first by amending legislation. The government intends to push through the Corporatisation Act by the middle of 1998 in order to facilitate the privatisation process.

Current Policy on Privatisation of the Energy Sector

Privatizing government owned enterprises will increase competition and efficiency of energy-related industries, and therefore should be implemented in spite of facing a tough financial crisis. In fact, the current financial condition provides an even stronger rationale for increasing private sector participation, as this will reduce the debt burden of the country and attract investment. The government has therefore decided to speed up the privatisation scheme.

Taking in to account the current status of the industry, the government's role can be automatically reduced (by the end of 1998) for certain enterprises, especially those already listed on the Stock Exchange of Thailand (SET). For some enterprises, it will take around 1-2 years to complete the necessary preparation and deal with the [work force problem](#).

Privatisation of the energy sector has been gradually implemented over a number of years. Resolutions from the National Energy Policy Council (NEPC) and the Cabinet comprise

the current policy. The Cabinet's latest resolutions ⁴ speed up the privatization of the energy sector.

A letter of intent between the Thai government and the IMF also clearly outlines the specific measures related to the privatisation of the energy sector as follows:

- In the energy sector, [Thailand] will accelerate privatisation and competition. As part of the broader strategy of encouraging the entry of independent private generators to enhance competition, EGAT has initiated sales of its stakes in Electricity Generating (Public) Co.,Ltd. and Powergen 2 (Ratchaburi power plant) during 1998. Over the longer term, EGAT will be split into separate generation and transmission companies, which themselves will eventually be privatized.
- In the oil sector, [Thailand] will relinquish its stake in Bangchak Petroleum Company, commencing in June 1998. Also, part of PTT Exploration and Production (PTTEP) will be sold, with the aim of privatising PTT it by the end of 1999.

⁴ 16 September 1997