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Energy Act: Implications for the Energy Sector in Thailand

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Abstract

For many years Thailand has attempted to conduct industry structural reform, ownership reform and regulatory reform in its electricity and natural gas sector. Although there have been some ownership reform in PTT, a public enterprise in oil and gas sector, progress in industry structural reform and regulatory reform in the gas sector has been slow. Moreover attempts to privatize EGAT, an electricity state-owned enterprise, have failed for several times due to inconsistent government policies and protests from various interest groups.

One of the factors, to which slow and unsuccessful reform in electricity and gas industries in Thailand are attributed, is the lack of energy legislation. To take steps to expedite the reforms, the government drafted an “Energy Industry Act” which was enacted in 2007. This law consolidates the laws relating to electricity and gas sector with the objectives of promotion of competition and private participation in energy sector, and establishment of an independent, transparent, and accountable energy regulator as well as new regulatory framework.

The question arises whether this law could generate a new hope in energy sector. To answer this question, first this study details the key features of the Energy Industry Act, particularly in the areas of industry restructuring, promotion of competition, establishment and governance of regulatory body and regulatory framework.

Then this paper will review energy laws of some countries such as United Kingdom, Malaysia, India, Singapore, the Philippines, South Africa and Ghana, in order to assess the implications of these laws on changes in their electricity and gas industries and regulatory environments. Due to distinct characteristics of each country’s energy industries and diverse paces of reforms, the implications of the laws on progress of reforms could be different from one country to another.

This paper also analyzes the likely implications of the Energy industry Act on Thailand’s electricity and natural gas business. The key features of the Act that provide significant changes in the energy sector are the establishment of the regulatory body and framework, the introduction of a new regulatory instrument called Power Development Fund and a new system for consumer protection. However the Act does not stipulate a clear design for energy structural reform. This paper also discusses the possibility of achieving regulatory governance and of promoting competition, consumer protection and environment.

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1. INTRODUCTION

Thailand started to reform its energy sector before the financial crisis in 1997. The plans for energy structural, regulatory and ownership reforms were drawn up and included in the Master Plan for State Enterprise Sector Reform (the Master Plan) in 1997 with the main objectives of separating the roles of policymaker, regulator and operators and of privatizing state-owned enterprises (SOEs). Targeted to be privatized at that time were such energy-related SOEs as Petroleum Authority of Thailand (PTT), Electricity Generating Authority of Thailand (EGAT), Metropolitan Electricity Authority (MEA), and Provincial Electricity Authority (PEA).

Following the Master Plan, the government succeeded in partially privatizing PTT in 2001 but could not privatize EGAT due to the strong protests from various groups such as labor unions and consumer groups whereas the other SOEs' privatization plans were put on hold. The ownership reform was again retarded whereas energy structural and regulatory reforms have been proposed, planned and widely debated, but progress in these reforms has been very slow as well.

The most recent attempt to restructure electricity supply industry (ESI) is to employ an enhanced single buyer model. In this model, EGAT is a major power producer, a single buyer or monopsonist purchasing electricity from private power producers and a natural monopolist in transmission business. Since 1992 the private sector participation in electricity generation business has been in the form of Independent Power Producers (IPPs) and Small Power Producers (SPPs) to promote competition. Under power purchase agreements, both IPPs and SPPs sell electricity to EGAT only.

MEA and PEA are responsible for distributing and retailing activities in the areas under their jurisdiction. Hence, in the current ESI model, the majority of consumers nationwide have to depend on the services of the three utilities: EGAT, MEA and PEA.

Another major energy SOE is PTT --- a major operator in the country's oil and natural gas sector. Since more than half of natural gas consumption has always been for electricity generation, PTT, the sole gas transmission, distribution and supply operator, together with its subsidiary, PTT Exploration and Production Co., Ltd., the gas producer, has played a major role in determining the price of natural gas, which subsequently affects the cost of electricity generation.

Before the partial privatization of PTT, there were plans for structural as well as regulatory reform in the natural gas sector to promote competition and ensure nondiscriminatory treatment in the use of natural gas pipeline services. However, these plans have yet to be implemented.

In addition, no independent regulator existed and some state-owned operators still perform some regulatory functions in energy sector.

There have been debates on how to pursue these reforms process more effectively. The experiences of other developing countries show that clear legal basis and steps such as restructuring, private participation, and the establishment of regulatory bodies are necessary conditions for successful reforms (Jamashb, 2006).

In Thailand, there have been several endeavors to push for an energy law. The recent attempt was eventually successful in December 2007 when the Energy Industry Act --- called the Act in this paper --- was passed by the National Legislative Assembly.

This law consolidates the laws relating to "ESI and natural gas transmission network" with the objectives of promoting competition and private participation and providing fair and transparent electricity and gas network access in the energy sector,

and establishing an independent, transparent, and accountable energy regulator as well as providing a new regulatory framework. The principal rationale to enact this Act is to identify and separate the tasks to be appropriately performed by the policymaker, the regulator and the operators.

The question arises whether the Energy Industry Act can move the energy industry towards the main goals of this Act. This paper will analyze and evaluate key implications of the Act for the energy sector.

It starts with the political economy of energy law enactment in Thailand, followed by a survey of the Act's salient features. Then energy laws of various countries will be reviewed. A sample of countries from various continents with diverse paces of reforms was chosen in order to draw up implications of their energy laws on various issues.

Implications of the Act for industry restructuring, promoting competition and regulatory governance will be discussed. Next, a new regulatory policy tool, Power Development Fund, will be evaluated. Before concluding this paper, issues on environmental concern and consumer protection required by the Act will also be discussed.

2. POLITICAL ECONOMY OF ENERGY LAW

The Energy Industry Act of 2007 is not the first attempt to reform the industry. Back in 1998 during the Chuan government, under the State Enterprise Reform Master Plan which included the energy sector, a law was drafted for the first time to restructure the ESI and to establish an independent regulator overseeing the electricity industry and natural gas transmission. Clear separation of policy making, regulation and operation was an essential component of the reform and competitive markets were to be developed. EGAT was set to be corporatized and its new power plants were to be privatized, while PTT would also be privatized as a holding company owning natural gas, oil and other related businesses. These actions were expected to lead to more competition in electricity and natural gas. However, they were strongly opposed by workers unions in EGAT, and to some extent by unions in MEA, PEA, and other state enterprises. These unions are among the strongest, well-organized and most vocal labor groups in the country. Their protests against the Master Plan, and particularly against privatization created significant political pressure on the government and contributed to the delay and eventually the failure in moving the law beyond its drafting stage.

The Thaksin government took over in 2001 as a strong single-party administration, with a clear intention to privatize state enterprises by corporatizing and selling their shares in the stock market. The initial public offering of PTT was promptly implemented in 2001 and, though financially successful, was criticized as being politically manipulated with initial lots of shares unfairly allocated to government party supporters. Later on, the Energy Ministry again saw a need for an independent energy regulator and even set up an interim regulator for the electricity sector in 2005-6. In the meantime, it revived a plan to legislate the restructuring of the electricity industry and its independent regulatory framework. The original law drafted during the previous government was revised, and natural gas transmission was specifically taken out of the text, leaving electricity the only activity to be regulated.¹ The revised version was sent to the Minister for his approval, but for some reason it

¹ The fact that the Energy Minister during the law drafting was former President of PTT may explain why natural gas was omitted from this version of the law. But this can only be footnoted and cannot be confirmed by the authors.

was not submitted to the Cabinet before the government was toppled by a military coup on 19 September 2006.

While it is unclear why the second draft was delayed, there have always been some factors, other than workers unions' opposition, which tend to obstruct the move towards having an energy law. It has never been settled on the type of market arrangement which is suited to the Thai situation. The Master Plan suggested a competitive wholesale power pool previously adopted in England and Wales. Later when England switched to the New Electricity Trading Arrangement, policymakers in Thailand started to have second thoughts on the power pool model. Some experts also proposed a Nordic model as another alternative. Critics were quick to point to an example of market failure in California where an electricity crisis in 2000, with rolling blackouts and sky-high tariffs, was said to be caused by its 1996 electricity deregulation law and poor market design. A study commissioned by EGAT predictably recommended an "enhanced single buyer" model in which EGAT would remain the only wholesale buyer of electricity from all power plants. With different market models to be selected, and with some degree of uncertainty in the outcome of this politically sensitive reform, those politicians who had to decide chose to play it safe by maintaining the status quo, in as far as legislative changes are concerned. Only necessary changes were made within the existing laws and regulations.

Another voice against privatization comes from a group of consumer protection non-government organizations (NGO's) which campaigned against the way in which the Thaksin government handled state enterprise privatization. Citing the case of PTT share selling as an example, they argued that the government's real motive of privatization was for politicians in power to pocket huge profits from floating state enterprises on the stock market. In 2005, they succeeded in obtaining a court verdict to nullify the corporatization process of EGAT on the grounds that it was not in full compliance with the Corporatization Law. This represents a serious setback for the government in pushing for a reform with legal backing.

The Act being examined in this study is in fact the result of the third attempt to legislate energy reform. Dr. Piyaswat Amaranand, Energy Minister in the Surayut government and former Director-General of the Energy Policy and Planning Office, wasted no time in carrying out a pro-reform mandate, with an energy reform law being high on his agenda. A drafting committee, appointed in December 2006, was headed by a senior official from the Energy Ministry, and included representatives from relating government agencies (Energy Policy and Planning Office (EPPO), Finance Ministry, Industry Ministry, National Economic and Social Development Board, and the Council of State), state enterprises (EGAT, MEA, PEA, and PTT), the Federation of Thai Industries, Thai Chamber of Commerce, NGO's, and some academic experts in economics, law, and engineering. Four public hearings on the final draft were held in Bangkok, Surattanee, Chiangmai, and Khonkaen, before it was submitted to the Minister and the Cabinet. Despite a strong protest by the labor unions against the draft, the government approved and forwarded it to the National Legislative Assembly, which passed the bill in December 2007. Being an appointed and not elected government probably explains why such a politically sensitive law can be pushed through within a relatively short time period.

3. SALIENT FEATURES OF ENERGY INDUSTRY ACT 2007

As discussed in the previous section, there have been some attempts to draft the Act since 1998. Some have failed due to various reasons. This paper will focus only on the recent attempt to draft the Act in 2007.

The key rationale for energy legislation follows the government's energy industry restructuring policy to separate the roles of policymakers, regulators and operators in the energy industry from each other. This legislation has been designed to provide the paradigm shift for regulatory reform. The major aims are to establish a regulatory organization, and a regulatory framework and to centralize regulatory tasks under one body.

With the belief that when a regulatory institution and a regulatory framework are in place, competition, efficiency and private participation will be enhanced. Therefore, this Act does not explicitly provide any sections on vertical or horizontal unbundling and designing of electricity and natural gas markets. The policy on industry restructuring reform is left to the government's discretion.

Most countries have legislation covering establishment of regulatory body and framework. Only few countries such as India and the Philippines specify functions of each electricity activities, namely generation, transmission, distribution and supply, and its market design in their laws. As shown in Table 1, most countries prefer to establish multi-sectoral regulatory body regulating both electricity and gas sector under a single legislation. However when it comes to the area of regulation, competition and market design, most countries have separate laws for each sector, as in South Africa, Singapore, Belgium, and Denmark. On the other hand, some countries do not have any provisions related to market design at all, for example Croatia and Thailand.

The key objectives and policy guidelines, as stated in Sections 7 and 8 of Thailand's Energy Industry Act, are summarized in Table 2. The main objectives of the Act are to promote supply-side efficiency and energy security, to promote competition and to protect consumers' benefits and environment. Policy guidelines are set to achieve these objectives accordingly.

Key features of the Act

As shown in Table 3, the Act attempts to separate the authority and duties of policymaker from the newly established regulator, called "Energy Regulatory Board" (the Regulator). The main duties of the Energy Minister are to recommend a policy on energy industry structure to the Cabinet and to consider power development plan, investment and operational plans of the Regulator and the budget of the Regulatory Office for submission to the Cabinet for approval; and to propose various policies on energy industry operation and Power Development Fund to the National Energy Policy Council (NEPC). According to the Act, a policymaking task in this industry is undertaken by the multiple government agencies including the Cabinet, the Minister and the NEPC.

The key feature of the Act is to establish the Regulator and to centralize regulatory tasks under one agency. The authority and duties of the Regulator cover most of regulatory tasks including supply-side regulatory tasks such as licensing, maintaining energy security and reliability, monitoring of energy business operation, issuing regulation on energy industry operation and equipment standards and quality, promoting knowledge and awareness in relation to energy among public and promoting energy efficiency and use of renewable energy.

However, the authority and duties of the Regulator do not include direct tariff determination and regulation of energy network systems. The regulatory tasks in these areas are limited to approval of tariff set by licensees. As for energy network system, the tasks are limited to monitoring the codes and conditions to utilize the network stipulated by the Energy Network System licensee. The Regulator will not have an

authority to establish these codes and conditions whereas Energy Network System licensees are entitled to do so.

Another key feature of the Act is consumer-side regulatory tasks, particularly consumer protection via energy service standard establishment and enforcement, as well as consumer protection through the use of the Power Development Fund. The effectiveness of these tasks will be enhanced by having a Regional Energy Consumer Committee representing energy consumers in each area.

4. IMPLICATIONS FOR INDUSTRY RESTRUCTURING AND PROMOTING COMPETITION

Few countries directly and clearly stipulate in their energy legislation the ESI structure employed after enacting the legislation. For example, as shown in Table 4, in the case of Mexico, a single buyer model is established by law in 1992.

Although some countries such as India, the Philippines and New Zealand, do not specify the ESI model to be employed after enactment of the law, they separate and specify functions of generation, transmission, distribution and supply licensees, while establishing the electricity wholesale market and setting market rule and third party access. These imply that these countries intend to gear their electricity sector toward more a competitive structure. However, it should be noted that the intention of the law is not always achieved within a short period of time, especially in the area of ESI restructuring. India and the Philippines enacted the law in 2003 and 2001, respectively. They have gradually reformed the structure of electricity supply industry by increasing private participation but are still operating under a single buyer model.

For those countries which have fully liberalized their electricity supply industry such as UK, Argentina, Brazil, Chile, Columbia and Peru, regulation on the natural-monopoly transmission and distribution activities through a regulated third party access is employed.

The ownership reform is rarely stipulated in the energy law. As shown in Table 4, the only country in the sample, The Philippines, has Chapter V in Republic Act No. 9136 (2000) on privatization of the energy state enterprise. As for the other countries, state enterprises in this industry were mostly partially privatized, particularly in upstream and downstream businesses. These countries usually have privatization laws applicable to state enterprises to be privatized. In most countries, network activities were publicly owned due to its natural monopoly characteristics. To promote competition in such countries as Argentina and Brazil, cross ownership between generation, transmission and distribution activities are precluded.

As for Thailand, according to the Act, the energy industry structure is a policy issue and will be determined and considered by the Cabinet. The Act does not clearly stipulate the energy industry restructuring policy toward a market-based regime. It does not contain explicit measures conducive to promote competition and to change from the enhanced single buyer model to a multi-buyer model. One of the reasons for pushing the Act through without any feature of energy structural reform is an urgent need to establish a regulatory framework in this sector. To avoid creating protests against the Act, this feature is left for the Cabinet's consideration in the future. However, it should be noted that it somehow creates uncertainty on implementing energy structural reform since it is not clearly stipulated in the Act.

Although the policy on energy structural reform is out of the regulator's hand, competition in this industry can in practice be promoted through new entry and nondiscriminatory access to energy network systems.

To allow new entry, the Regulator has the authority and duty to issue licenses for different types of energy industry operation as shown in Table 5. However, the Act does not separate the types of business into competitive and natural monopoly business to apply for different types of licensing but leave it for the Regulator's discretion. Also, the Act does not disallow multiple licenses. Hence it would be possible for some state-owned energy incumbents which presently own a competitive energy business and an energy network system, and are already endowed with monopoly and monopsony power, to retain and exercise these powers over other licensees.

To promote fair competition, the Act emphasizes as one of the main objectives the concept of nondiscriminatory and transparent practices to utilize the energy network systems, currently owned and operated by EGAT, PEA and MEA in electricity sector and PTT in natural gas sector. According to the Act, the regulator is entitled to issue license to Energy Network System Operators but its authorities over operation of energy network system are limited to monitoring any codes and conditions regarding the network systems set by the licensees and establishing the criteria and procedures for the licensees to disclose some information as shown in Table 5.

As stipulated in a section on Energy Network Systems and Energy Network System Operators in the Act, Energy Network System Licensees are empowered to control over energy network systems. As long as the Energy Network System Licensees are state agencies, they are allowed to develop their energy network system expansion plans and present them directly to Minister of Energy for further submission to the Cabinet for approval. Thus, the licensees will be given excessive powers by the Act.

Non-discriminatory open access to the network is a prerequisite to fair competition and enables other licensees to reach consumers through a network. The rules regarding open access should be set by the regulator and be decided before issuing licensing.

5. ESTABLISHMENT OF REGULATORY BODY AND ITS FUNCTIONS

As shown in Table 6, most of regulatory authorities, including Thai regulatory body, are multi-sectoral, regulating electricity, gas and/or other energy such as oil, hydrocarbons and heat sectors. Regulators from Lithuania and Uruguay also regulate non-energy sector such as water and sewage. India, Pakistan, the Philippines, New Zealand, Argentina, Brazil, Ecuador and Venezuela are countries with a single-sector regulatory body regulating only electricity sector.

The regulatory authorities have explicitly stated objectives in energy legislations which they must pursue. With regard to the regulatory objectives, economic efficiency and security of supply are core objectives of the energy regulators. Almost all of them are engaged in the promotion of competition and an environment friendly industry. India and the Philippines are specifically meant to promote socially responsible price policies and their regulators are fully authorized in regulating tariffs.

The regulators from such countries as India and the Philippines have a wide range of objectives to pursue whereas the regulators from countries such as New Zealand, Spain and Croatia have the limited number of explicitly stated objectives.

In order to pursue the objectives, regulators should have competencies to conduct the regulatory functions at least in the six most important regulatory issues: approval or determination of tariff, network access, licensing, laying down rules, dispute settlement and enforcement of their decision. As shown in Table 7, according

to their legislations some regulators are entitled and empowered to conduct all of regulatory functions such as South Africa, India, the Philippines, UK, Canada, and USA.

In some countries, the regulators lack decision-making powers and play only consultative role in certain functions. For example, Spanish regulator has limited powers and functions and plays only consultative roles to 'propose' tariff, network access regulations and rules to the Minister of Industry and does not have any decision-making power over these regulatory issues. Regulators in South American countries such as Chilean and Uruguayan have no power in relation to tariff and licensing.

The majority of regulators are empowered to decide on approval or determination of tariff, laying down rules, and dispute settlement, but some of them are fully empowered in matters of licensing and network access. Although they are not empowered to perform all functions, they are given powers to enforce their decisions, with the exception of the Spanish regulator.

6. REGULATORY GOVERNANCE

As shown in Table 8, the most common way to organize the regulatory authorities is the commission-type regulator. These regulators are headed by a board of commissioners working full time with the authority. A board is composed of persons with technical, environmental, legal, finance and/or economics skills. Some commissioners have a professional background in business, environmental affair and academia. In Chile all members of the board are Ministers of State whereas three out of eight Colombian commissioners are Ministers.

These commissioners are appointed for a fixed term of at least 4 years. Most of terms are renewable. Only Thai, Indian and Italian commissioners' term is non-renewable. Commissioners in some countries can renew their terms only once such as Spain whereas commissioners in Belgium and Argentina have no limit on the number of terms.

Some of commissioners enjoy some measure of protection against dismissal before the end of their term such as regulators in Denmark. However, in most countries members of the board can be dismissed or revoked for reasons not related to policy, for example if they or their families have conflict of interests in energy sector, or if they seriously neglect their duties.

As for the appointment procedure, Table 9 shows that in most countries the regulators are appointed by the head of the state/government: President and Prime Minister, based on recommendation and/or nomination of a selection or screening committee and/or government. Some requires approval by government or parliamentary commission. As shown in Table 10, in countries such as France, Argentina, Ecuador and Peru, regulatory commissioners are appointed by different administrative and legislative branches of the government. In most countries, the commissioner can be removed from the office for infringement of his duties, mental or physical disability, and conflict of interest by the appointing authority or by official court.

Table 6 shows that the regulatory authorities rely on either fee and charges or government budget as their main sources of funding. Only few regulators in such countries as Netherlands, Spain, and Thailand rely on both sources and other kinds of funding such as donation and tax. An external source of funding is somehow more stable than government budget because regulatory authorities are not affected by or

less vulnerable to politically motivated budget cuts and fight for resources among other governmental agencies.

The regulator's decisions might be challenged through certain forms of appeal mechanisms. In most countries, decisions made by the regulatory authorities can be appealed and overturned by specialized bodies. For example, the decisions can be overturned by the Appellate Tribunal for Electricity in India and by the Trade and Industry Appeals Tribunal in Netherlands. In New Zealand, the decisions can only be overturned by courts. Spain is the country in which the decisions can be overturned by the Ministry of Industry and Energy.

Implications for Thailand

The regulatory structures and instruments employed in each country are different. Regulatory mechanisms should be devised corresponding with its institutional endowment of each country. Undoubtedly the legislation is the key attributes of institutional endowment. The regulatory governance is an important institutional means that leads to the end to ensure that all objectives set in the Act are accomplished.

Following Stern and Holder (1999), the six aspects of regulatory frameworks which characterize the governance elements of regulation will be employed to evaluate possibility that the Act in Thailand would enhance regulatory governance in the future. It consists of three aspects that relate to institutional design: clarity of roles and objectives; autonomy and independence; and accountability. Another three aspects relate to regulatory processes and practices: participation, transparency and predictability.

Institutional design

The "roles and objectives" of the Minister and the Regulator are clearly stipulated in Thailand's Energy Industry Act. It is expected that the Act would help to reduce any possible confusion about which functions and policies are carried out by Minister and by regulator. That would make regulation more effective.

The Act provides certain degree of "autonomy and independence" to the regulator through some features.

Firstly, the Act clearly defines the qualifications, disqualifications and removal criteria of the Board members; selection and appointment process and procedure; and qualification of the Screening Committee and screening criteria. The Act also specifies a fixed term (six years) and discharge of Board members. The Board members are barred from taking any energy-related career or practice during and two years after the end of their terms to prevent a conflict of interest.

Next, the Screening Committee comprises of seven members, four of which are former bureaucrats and three of which are representatives of the Federation of Thai Industries, the Council of Engineers and a Non-profit organization. The mixture of these members raises concern with political influence of the screening and selection process.

In addition, after screening and selection process, the Screening Committee shall propose the names of the selected persons to the Minister in order to submit them to the cabinet for approval. Moreover, the Cabinet can pass a resolution to dismiss the Board member from his office. Through these procedures, independence and autonomy of ministerial regulatory agency might be weakened due to political interference in appointment process and unfair dismissal. The regulator may not be

able to exercise regulatory power without being undermined by short-term political interest. All in all, this could affect the credibility of regulatory system.

Financial autonomy and independence of regulator can be promoted if regulator has secure sources of funding. The Act allow the Office to earn revenue from the execution of authority and duties as assigned to the Regulator and the Office, from subsidy allocated by the government, from donation and from revenue from assets of the Office. However, any operational plan, expenditure budget, revenue estimation, and determination of fee rates and other benefits must be presented to the Minister for approval. Any requested subsidy must be presented by the Minister to the Cabinet for approval. Although the government does not have direct control over the regulator's budget through the consolidated fund of the government, it can control and/or punish the non-conforming regulator by disapproval of the proposed budget, plan and fee.

“Accountability” of regulator will be challenged through appeal mechanism as stipulated in the Act. An energy consumer, a licensee or any stakeholder, who is dissatisfied with an order issued by the Regulator, has the right to lodge an appeal with the “Regulator itself”. The decision of the Regulator will be treated as final. However, the Regulator is accountable to the government. The Board member will be dismissed from his office on the ground of misconduct, negligence, dishonesty or incompetence. Hence, there are checks and balances to control regulator's misconduct.

Regulatory process and practices

The Act allows “participation” from any to-be-affected persons, a group of persons or licensees to make representations to the Regulator through the hearing process established by the Regulator before issuing any regulations, rules, announcements or codes that will affect them except for the case of emergency or exigency to maintain the energy security of country. However it is too early to conclude how much opinions expressed in the participatory process will be taken into account in the Regulator's final decision.

The Act emphasizes on “transparency” issue by stipulating that any issuance of regulations, rules, announcements or codes and reasoning behind decisions shall be recorded and summarized into annual report of the Office and shall be disseminated through a website of the Office. For example, the formula or the methodology used in the tariff calculation and even the variables used in the tariff calculation, except that they are confidential information of the licensees, shall be disclosed. However, the major concern is the scope of transparency and area of information disclosure. The information utilized in the process of reaching any decisions or issuance of regulations, rules, announcements or codes should be disclosed as well.

Transparency is an important basis for securing more effective participation from firms, consumers and affected community. It can ensure effective accountability and predictability.

“Predictability” is crucial for firms undertaking long-term investment. The Act attempts to set objective, guidelines, regulatory framework and regulation on licensing, tariff, energy network system, energy industry operation standards and equipment standards and energy consumer protection. However some of regulations do not provide the well grounded rules and empower the licensees to set rules such as energy network system and tariff determination. There is no promise that they might be subject to sudden change due to private interest of licensees.

7. CONSUMER PROTECTION

Since laws on energy regulation in all countries are designed to promote efficiency and competition, it is not surprising to see that most countries not only

specify “consumer protection” as one of the objectives of the laws, but some also give detailed guidelines for protecting consumer interests. Consumer complaints are handled by regulators in such countries as the Philippines, Denmark, Italy, Netherlands, the United States and Ecuador. The laws in India, Ghana and Spain require their regulators to set standards of performances/service quality for energy utilities. The Electricity Commission in New Zealand develops model contracts for consumers and even provides detailed guidelines on arrangements to assist low income and vulnerable consumers. The Utilities Act 2000 in the UK requires the gas and electricity regulator to have regard to the interests of low income consumers, the chronically sick, the disabled, pensioners and consumers in rural areas. It also establishes an independent Gas and Electricity Consumer Council with the task of seeking to resolve complaints, providing useful information to consumers, and advocating consumer interests to the regulator, the government, and utilities companies.

Compared with the laws of other countries, the Energy Industry Act of Thailand also provides relatively elaborate arrangements on consumer protection. It requires licensees to meet the technical, engineering, and service quality standards set by the regulator. In case they fail to meet the standards, they have to compensate the affected customers. Standard service contracts approved by the Regulator must be publicly displayed and used to ensure fair treatment for all energy consumers. The Act empowers the Regulator to appoint a consumer committee representing energy consumers in each region, the details of which will be determined by the Regulator. Similar to the UK’s Gas and Electricity Consumer Council, this 10-person committee receives and considers complaints from energy consumers, and co-ordinate with service providers to seek remedy for consumer problems. It also gives advice to consumers and the Regulator on consumer protection issues. Besides lodging complaints to their regional committees, consumers also have the right to directly request and receive information from their service providers in cases of billing errors or other unfair treatments. If they are not satisfied with their committee’s decision, they can forward their appeals to the regulator. At present, the National Energy Policy Council (NEPC) has set some technical standards, and customer service standards for MEA and PEA to follow. For instance, planned outages must be publicly announced at least 3 days in advance, and at least 90% of complaints/questions from MEA customers must be responded within 30 days by mail, and 10 minutes by phone. The effectiveness of enforcing these standards has yet to be evaluated, and it is unlikely that most customers have been informed of their rights in obtaining and demanding these service qualities. Therefore, if the consumer protection system outlined in the Act really works, we can expect that at least more consumers will be aware of these rights and some will start to exercise them.

8. RENEWABLE ENERGY AND ENERGY EFFICIENCY

It is interesting to note that the promotion of energy efficiency and renewable energy is one of the objectives stated in the energy regulatory laws of several countries, most of which are developed countries e.g. Netherlands, the UK, Canada, New Zealand and Spain. The Electricity Act 1998 of Netherlands requires electricity producers to promote the efficient and environmentally responsible production or use of electricity by their own companies and their customers. The Spanish Electric Power Act 1997 gives some details on how energy saving and efficiency plans should be implemented.

The laws of several countries expressly promote the use of renewable energy by providing some form of subsidy to electricity generation using renewable fuels. The

UK law establishes obligation schemes for producers to rely more on renewable energy. In Spain a premium price will be paid to electricity generation installations using non-consumable and non-hydraulic renewable energies, biomass, biofuels and agricultural waste. Other countries which mention the use of renewable energy as one of their objectives are Malaysia, France, Lithuania and Croatia.

In the Energy Industry Act of Thailand, one of the objectives of the law and the duties of the Regulator is to promote the use of renewable energy and other energy sources with minimal impact on the environment. As in most countries, environmental standards are also one of the criteria to be adopted by the regulator in granting a license to an operator. The law establishes a fund called “the Power Development Fund” (the Fund), which can finance the use of renewable energy and clean technologies in power generation. Other purposes of the Fund are to compensate for services to disadvantaged or rural consumers, and to finance development projects in areas affected by power generation. Contributions into the Fund are in the form of fees and fines collected from licensees, and some government subsidy. Ghana is another country which has a similar “energy fund” for the purpose of promoting energy efficiency, renewable energy, and human resource development in the energy sector.

Power development fund

The Act allows a fund to be set up to compensate those licensees who provide services to low-income consumers or remote areas at prices below actual costs. Apparently, this is to be used as a tool to support the social objective of uniform tariffs and rural electrification. The Regulator is empowered to assign licensees to extend their services into areas where supply is still insufficient. Currently, uniform tariffs are achieved through a cross-subsidy between MEA and PEA. Arrangements are made for PEA to pay for bulk power from EGAT at rates lower than those paid by MEA, so that PEA can provide power to their customers at the same prices as those paid by MEA customers in Bangkok, Samutprakarn and Nonthaburi. Below-cost life-line rates are charged for all small household power users (not more than 150 kWh per month). To continue the uniform tariff policy under the new law, this so-called Power Development Fund is likely to replace the existing cross-subsidization scheme among EGAT, PEA, and MEA. This means that a surcharge is to be collected from MEA customers into the Fund, and at the same time a subsidy is distributed out of the Fund to PEA consumers. If the cross-subsidy is to be made transparent, contributions (both positive and negative) to the Fund must be specifically identified in electricity bills.

The Fund can also be used in financing development projects in areas affected by power generation. This is apparently aimed at reducing tensions between power plants and nearby community, making it easier to locate power plants in the future. Another purpose of the Fund is to promote the use of renewable energy and environment-friendly technologies in electricity operation.

It is expected that most contribution into the Fund is collected from licensees, who most probably pass the burden over to their customers. The fines collected from the licensees who fail to comply with the Act are also to be added to the Fund. The Act specifies that a subsidy from the government is another source of revenue for the Fund. But based on past experience, this source has the least likelihood. In terms of administration, the Fund is to be managed by the Office as an account clearly separated from its regular budget. Decisions on the contribution and expenditure of the Fund will be made by the Regulator within the policy framework of NEPC.

9. CONCLUDING REMARKS

The attempt to reform Thai energy sector in three facets: ownership, structural and regulatory reforms has started for a decade. However, the progress of these reforms has been slow due to various factors such as protest on privatization of energy SOEs and lack of clear legal basis and steps for regulatory and industry structural reform.

To pursue reforms more effectively, energy law is needed. In Thailand the energy law was drafted for few times since 1998 but was not yet successfully enacted for various social and political reasons. In 2006 the attempt to draft energy law was revived again. By the time of writing, the Energy Industry Act B.E. 2007 is enacted with the expectation that it could generate improvements in the energy sector.

The Act will consolidate the laws relating to ESI and natural gas transmission network with the objectives of promoting competition and private participation in the energy sector, and establishing an independent, transparent, and accountable energy regulator as well as new regulatory framework.

The Act has an almost complete set of necessary features to achieve the aforementioned objectives. It is drafted to centralize regulatory tasks under the newly established regulatory body and to create a certain degree of regulatory governance. Comparing with other countries, provisions on establishment of regulatory body and its functions together with its appointment and term revocation in Thai energy legislation provide relatively more transparent process, clearer functions and better opportunity to achieve regulatory governance than those in most countries' laws.

Moreover, this law also provides relatively good arrangements on consumer protection and introduces Power Development Fund as a new way to promote the use of renewable energy and other energy sources as well as assisting disadvantaged or rural consumers and people in areas adversely affected by the power business.

However, the Act does not stipulate a clear design for energy industry structural reform in the future. Therefore, the objective of promoting competition in the energy industry may not be fully achieved.

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Table 1 Scopes of Energy Legislations in Various Countries

Country	Provisions on regulatory body			Provisions on regulation			Provisions on competition and market design		
	Multisectoral body	Sectoral bodies		Multisectoral law	Sectoral laws		Multisectoral law	Sectoral laws	
		Electricity	Gas		Electricity	Gas		Electricity	Gas
Africa									
South Africa	✓	-	-	-	✓	✓	-	✓	✓
Asia									
India - Federal	-	✓	-	-	✓	-	-	✓	-
Mongolia	✓	-	-	-	-	-	-	-	-
Pakistan	-	✓	✓	-	✓	✓	-	-	-
The Philippines	-	✓	-	-	✓	-	-	✓	-
Singapore	✓	-	-	-	✓	✓	-	✓	✓
Thailand	✓	-	-	✓	-	-	-	-	-
Europe									
Belgium	✓	-	-	-	✓	✓	-	✓	✓
Croatia	✓	-	-	✓	-	-	-	-	-
Denmark	✓	-	-	-	✓	✓	-	✓	✓
France	-	✓	-	-	✓	✓	-	✓	✓
Italy	✓	-	-	-	✓	✓	-	✓	-
Lithuania	✓	-	-	-	✓	✓	-	✓	✓
Netherlands	-	-	-	-	✓	-	-	✓	-
Spain	✓	-	-	-	✓	-	-	✓	-
Great Britain UK	✓	-	-	-	✓	✓	-	✓	✓

Country	Provisions on regulatory body			Provisions on regulation			Provisions on competition and market design			
	Multisectoral body	Sectoral bodies		Multisectoral law	Sectoral laws		Multisectoral law	Sectoral laws		
		Electricity	Gas		Electricity	Gas		Electricity	Gas	
North and Central America										
Canada - Federal	✓	-	-	✓	-	-	-	-	-	-
Mexico	✓	-	-	✓	-	-	-	-	-	-
USA - Federal	✓	-	-	✓	-	-	-	✓	✓	✓
Oceania										
Australia -Federal	✓	-	-	-	✓	✓	-	✓	✓	✓
New Zealand	-	✓	-	-	✓	-	-	✓	-	-
South America										
Argentina	-	✓	-	-	✓	-	-	✓	-	-
Brazil - Federal	-	✓	-	-	✓	-	-	✓	-	-
Chile	✓	-	-	-	✓	✓	-	-	-	-
Colombia	✓	-	-	-	✓	-	-	✓	-	-
Ecuador	-	✓	-	-	✓	-	-	✓	-	-
Peru	-	✓	-	-	✓	-	-	✓	-	-
Uruguay	✓	-	-	-	-	-	-	-	-	-
Venezuela	-	✓	-	-	-	-	-	-	-	-

Note: Provisions on regulatory body, regulation and/or competition and market design in some countries might or might not be under the same legislation.

Table 2 Key objectives and policy guidelines of the Energy Industry Act of Thailand

Category	Description
Objective	<p>To promote energy supply security and adequacy</p> <p>To protect consumers' benefits in terms of both tariffs and service quality</p> <p>To promote competition and prevent abusive use of dominance</p> <p>To promote nondiscriminatory and transparent service provision of energy network systems</p> <p>To promote efficiency and fairness in energy industry operation</p> <p>To protect the right and liberty of the energy consumers, local communities, general public and licensees</p> <p>To promote efficient use of energy and natural resources</p> <p>To promote the use of renewable energy with less adverse impact on the environment</p>
Policy guideline	<p>To procure energy to adequately meet demand with good quality and security at fair and reasonable prices by employing and developing local renewable energy and indigenous energy resources for the economic, social and environmental sustainability and reducing energy import dependency</p> <p>To promote economical and efficient use of energy and application of efficient technologies as well as the distributed generation system in order to reduce investment, fuel costs and associated impact of energy production and consumption and to increase country's competitiveness</p> <p>To promote participation of the local communities and general public in energy management and monitoring to ensure that management and tariff determination are carried out with transparency under jurisdiction of regulatory body to protect consumer and to ensure fairness for all stakeholders</p> <p>To promote correct knowledge, awareness and behavior with relation to the economical, efficient and worthwhile use of energy among the general public</p> <p>To support energy operation as the basic infrastructure and to provide energy security and reliability by which state is in charge of energy network system, energy network system operator and hydro power plants and to maintain the appropriate level of fuel mix</p>

Table 3 Key features of the Energy Industry Act of Thailand

Category	Key features
Policy	<p>Policymaker (Minister) have the authority and duties:</p> <ul style="list-style-type: none"> Recommend to the <i>Cabinet</i> the policy on the energy industry structure Recommend to the <i>National Energy Policy Council</i> (NEPC) policy on energy procurement; policy on diversification of fuel sources and types for power generation Consider the power development plan, investment plans of the electricity industry, the natural gas procurement plan and the energy network system expansion plans for submission to the Cabinet for approval Propose to the NEPC the policy on the protection against and solution to energy shortages Propose to the NEPC the policy, targets and general strategies of the energy industry operation Set policy on customer service standards and energy industry operation standards; and policy on extensive provision of energy services and energy services for the underprivileged including the policy dealing with the energy consumers' petitions Consider the operational plan of the Energy Regulatory Board and the budget of the Energy Regulatory Office for submission to the Cabinet for approval Approve the rules and Codes of Conduct of the Board Members and the competent official
Regulator	<ul style="list-style-type: none"> Establishment of Energy Regulatory Board (the Regulator) and Energy Regulatory Office (the Office) Authority and duties of the Regulator Term of the Board Members Qualification and disqualification of the Board Members Screening of qualified persons to be nominated Board Members by a Screening Committee Composition and qualification of a Screening Committee Selection and appointment proceedings of the Board Members

Category	Key features
Regulation	<p>Centralization of regulatory tasks undertaken by the Regulator including of:</p> <ul style="list-style-type: none"> Licensing Regulating and approving tariffs set by the licensees Establishing measures energy security and reliability of the power system Establishing regulation of electricity procurement and power purchase rules and regulation Monitoring of energy business operation Issuing regulation on energy industry operation and equipment standards and quality Issuing regulation on the Power Development Fund Promoting and supporting research and development work and human resource capacity in energy sector Promoting knowledge and awareness in relation to energy in the society and among the public Promoting the use of renewable energy and energy that has less adverse impact on the environment
Energy network systems and energy network system operations	<p>Energy Network System Licensees have to:</p> <ul style="list-style-type: none"> Develop their energy network system expansion plan for submission to the Cabinet for approval, if they were state-owned. If the licensees were not state organization, the licensees shall submit the plan to the Regulator. Allow other licensees or energy industry operators to utilize the networks without unjust discrimination in accordance with the codes and conditions stipulated by themselves Disclose the contracts, agreements, conditions and tariffs for utilization of or connection to their network systems Be responsible for the control, management and regulation of the energy network systems to ensure the system balance, security, stability, efficiency and reliability
Consumer protection	<ul style="list-style-type: none"> Consumers are protected against failure to meet the service standards and energy demand especially in no energy service area. Power development fund will be set up for public service obligation, particularly in remote area, to develop a locality that is affected by the power plant construction and to promote the use of renewable energy. Establishment of the Regional Energy Consumer Committee, representing energy consumers in each region

Table 4 Ownership and Electricity Supply Industry (ESI) Structure in Various Countries

Country	Ownership structure			ESI Structure	Note
	Upstream	Network	Downstream		
Africa					
South Africa – Electricity	PP	PO	PP	2	
– Gas	FP	T- PO D- FP	-	-	
Asia					
India (Federal)– Electricity	PP	PO	PP	5	
– Gas	PP	PP	PP	-	
The Philippines – Electricity	PP	T- PO D- FP	PP	4	
Europe					
Croatia – Electricity	PO	PO	PO	1	
Denmark – Electricity	MO	T- PO D- MO	MO	5	
– Gas	P	PO	MO	-	
France – Electricity	PP	PO	PP	5	
– Gas	PP	MO	PP	-	
Italy – Electricity	FP	PO	FP	5	
Netherlands – Electricity	PP	PO	PP	5	
– Gas	MO	PO	P	-	
Spain – Electricity	PP	PP	MO	5	
– Gas	FP	MO	FP & P	-	

Country	Ownership structure			ESI Structure	Note
	Upstream	Network	Downstream		
UK (Great Britain) – Electricity	FP	FP	P	5	
– Gas	P	P	P	-	
North and Central America					
Canada (Federal) – Electricity	PP	PP	PP	5	
– Gas	P	PP	P	-	
Mexico – Electricity	PO	PO	PO	2	Single buyer model is established by law in 1992
– Gas	PP	PP	PP	-	
USA (Federal) – Electricity	MO	MO	MO	-	
Oceania					
Australia (Federal) – Electricity	PP	PP	PP	5	
– Gas	P	P	P	-	
New Zealand – Electricity	PP	T- PO D- PP	PP	5	
– Gas	P	P	PP	-	
South America					
Argentina – Electricity	PP	T- FP D- PP	PP	5	Cross-ownership restriction between upstream, transmission and distribution
– Gas	FP	FP	FP	-	

Country	Ownership structure			ESI Structure	Note
	Upstream	Network	Downstream		
Brazil (Federal) – Electricity	PO	T- PO D- PP	P	5	Cross-ownership restriction between upstream, transmission and distribution
– Gas	PP	T- PO D- PP	P	-	
Chile – Electricity	FP	FP	FP	5	
– Gas	PP	T- PP D- FP	MO	-	
Colombia – Electricity	PP	PP	PP	5	
– Gas	PP	PP	PP	-	
Ecuador – Electricity	PO	PO	PO	5	
Peru – Electricity	PP	PP	PP	5	
– Gas	MO	MO	P	-	
Uruguay – Electricity	PP	PO	PO	5	
– Gas	MO	MO	MO	-	
Venezuela – Electricity	PP	PP	PP	4	
– Gas	PP	PP	PO	-	

Note: P, PP, PO, MO and FP stands for private ownership, partial privatization, public ownership, mixed ownership and full privatization, respectively.

T and D stand for transmission and distribution networks, respectively.

ESI structures are classified as vertically integrated monopolist (1); vertically integrated monopolist and IPPs (2); regional DISCOs, IPPs, a GENCO-TRANSCO as single buyer (3); many DISCOs, GENCOs, IPPs, TRANCO as single buyer (4); and power market GENCOs, DISCOs, and large users, TRANSCO-SO (5).

Source: International Regulation Energy Network

Table 5 Authority and/or duties of Energy Regulatory Board in Thailand

Aspect	Authority and/or duties
Licensing	<p>Determining the criteria, term and fee for each license according to the size and characteristics of each energy industry category</p> <p>Announcing stipulations of the qualifications of a licensee, the procedures of the application for a license, the criteria, conditions and processing time of license issuance, including the license fees and the fees for the energy industry operation</p> <p>Granting and issuing a license</p> <p>Specifying duration and extension of a license</p> <p>Collecting licensing fee</p> <p>Stopping or suspending the energy industry operation who has not obtained any license</p> <p>Suspending or canceling the license who violates the provisions of the Act or lacks the qualification stipulated by the Regulator</p> <p>Issuing the regulations and establishing the criteria to prevent any acts that are monopolistic, reduce competition or limit competition in energy service operation</p>
Tariff approval	<p>Regulating tariffs in line with the policy and guidelines as set by Ministry of Energy with consent of National Energy Policy Council</p> <p>Establishing the criteria for determining the tariffs of licensees under each category</p> <p>Regulating tariffs which is set by licensees through transparent process with stakeholders' participation</p> <p>Adjusting tariff or ordering the licensees to adjust the tariffs if tariffs become inappropriate</p>
Energy network systems and energy network system operators	<p>Issuing license to Energy Network System Operator</p> <p>Monitoring the codes and conditions stipulated by the Energy Network System licensees to coincide with principles of non-discriminatory practices and energy security, safety and reliability and for consumers' benefits</p> <p>Establishing the criteria and procedures for the Energy Network System licensees to disclose their contracts, agreements, conditions and tariffs</p>

Aspect	Authority and/or duties
Consumer protection	<p>Stipulating energy service standard</p> <p>Establishing regulation to penalize the licensees who fail to meet the standards</p> <p>Assigning a licensee to provide energy services in no energy service area</p> <p>Having authority to announce the establishment of the standard criteria of contracts and conditions pertaining to energy service provision</p> <p>Managing the Power Development Fund</p> <p>Appointing the Regional Energy Consumer Committee and determining its qualification, terms of office, working procedures and remuneration</p>
Public hearing	<p>Prior to issuing any regulations, rules, announcements or codes of the Regulator, the Regulator shall disclose the essence of the regulations, rules, announcements or codes and shall provide public hearing except for the case of emergency or exigency to maintain energy security.</p>
Information disclosure/dissemination	<p>In issuing any regulations, rules, announcements, codes or orders, the resolution of the meeting together with the facts and rationale shall be recorded in the Minutes of the Regulator’s meeting. The office will summarize the Minutes in its Annual Report.</p> <p>The Regulator shall provide reasons, in writing, within sixty days, in respect of the issuance of any regulations, rules, announcements, codes or orders affecting any affected persons or stakeholders, if so requested by the affected persons.</p> <p>If the execution of the Regulator affects the general public, the reasons for such execution shall be made public via the website of the Office.</p>

Table 6 Regulator: Establishment, Sectoral Coverage and Financing in Various Countries

Country	Regulator	Legally established	Operation	Sector			Financing		Note
				Electricity	Gas	Other	Fee and Charge	Government Budget	
Africa									
South Africa	National Energy Regulator of South Africa	2004	May 2006	✓	✓	-	na.	na.	na.
Asia									
India - Federal	Central Electricity Regulatory Commission	1998	1999	✓	-	-	✓	-	-
Pakistan	Oil and Gas Regulatory Authority	March 2002	March 2002	-	✓	-	✓	-	-
	National Electric Power Regulatory Authority	1997	1997	✓	-	-	✓	-	-
The Philippines	Energy Regulatory Commission	2001	2001	✓	-	-	-	✓	-

Country	Regulator	Legally established	Operation	Sector			Financing		Note
				Electricity	Gas	Other	Fee and Charge	Government Budget	
Europe									
Belgium	Commission for Electricity and Gas Regulation	2000	2000	✓	✓	-	✓	-	-
Croatia	Croatian Energy Regulatory Agency	2005	2005	✓	✓	District Heating, Oil and Oil derivatives	✓	-	-
Denmark	Energy Regulatory Authority	2000	2000	✓	✓	District Heating	✓	-	-
France	Electricity Regulation Commission	2000 - authority extended to gas in 2003	2000	✓	-	-	-	✓	-
Italy	Regulatory Authority for Electricity and Gas	1995	1997	✓	✓	-	✓	-	-
Lithuania	National Control Commission for Prices and Energy	1997	1997	✓	✓	Heat, Water, Sewage, and Passenger Transportation	-	✓	-

Country	Regulator	Legally established	Operation	Sector			Financing		Note
				Electricity	Gas	Other	Fee and Charge	Government Budget	
Netherlands	Office of Energy Regulation	1999	1999	✓	✓	-	✓	✓	-
Spain	National Energy Commission	1999	2000	✓	✓	Oil	✓	✓	-
UK (Great Britain)	Office of Gas and Electricity Markets	2000	2000	✓	✓	-	✓	-	-
North and Central America									
Canada - Federal	National Energy Board	1959	-	✓	✓	Oil	✓	-	-
Mexico	Energy Regulatory Commission	1994 (as a consultative body)	1995	✓	✓	-	-	✓	-
USA - Federal	Federal Energy Regulatory Commission	1977	1977	✓	✓	Oil	✓	-	-
Oceania									
Australia - Federal	Australian Energy Regulator	2004	July 2005	✓	✓	-	-	✓	-

Country	Regulator	Legally established	Operation	Sector			Financing		Note
				Electricity	Gas	Other	Fee and Charge	Government Budget	
New Zealand	Electricity Commission	1992	2003	✓	-	-	✓	-	-
South America									
Argentina	National Electricity Regulatory Board	1992	1993	✓	-	-	✓	-	Donation Subsidy Tax
Brazil - Federal	Electricity Regulatory Agency	1996	1997	✓	-	-	-	✓	Tax
Chile	National Energy Commission	1978	1979	✓	✓	Hydrocarbon	-	✓	-
Colombia	Commission for the Regulation of Energy and Gas	1993	1993	✓	✓	-	✓	-	-
Ecuador	National Electricity Council	1996	1998	✓	-	-	-	✓	-

Country	Regulator	Legally established	Operation	Sector			Financing		Note
				Electricity	Gas	Other	Fee and Charge	Government Budget	
Peru	Energy Investment Supervisory Agency	December 30, 1996	in October 1997	✓	-	Hydrocarbon	✓	-	-
Uruguay	Regulatory Unit for Energy and Water Services	December 2002	January 2003	✓	✓	Liquid Fuels, Water and Sewage	-	-	Tax
Venezuela	Institute for Electric Service Development	1993	1999	✓	-	-	na.	na.	na.

Source: International Regulation Energy Network

Table 7 Regulatory Functions

Country	Tariff	Network Access	Licensing	Rules	Dispute Settlement	Enforcement	Note
Africa							
South Africa	✓	✓	✓	✓	✓	✓	-
Asia							
India - Federal	✓	✓	✓	✓	✓	✓	-
The Philippines	✓	✓	✓	✓	✓	✓	-
Thailand	✓	-	✓	✓	✓	✓	-
Europe							
Belgium	✓	- (give advice)	- (advise to Minister of Energy on granting of license)	-	✓	✓	-
Croatia	-	-	-	-	✓	✓	-
Denmark	✓ (Price cap)	✓	-	✓	✓	✓	-
France	✓	✓	-	✓	✓	✓	-
Italy	✓	✓	- (make proposal)	✓	✓	✓	-
Lithuania	✓ (Price cap)	-	✓	✓	✓	✓	-

Country	Tariff	Network Access	Licensing	Rules	Dispute Settlement	Enforcement	Note
Netherlands	✓	-	✓	✓	✓	✓	Price cap formula and regulatory period are established in law in 1998.
Spain	- (Propose)	- (Propose)	-	- (Propose)	✓	-	Propose to the Minister of Industry
UK (Great Britain)	✓	✓	✓	✓	✓	✓	-
North and Central America							
Canada - Federal	✓	✓	✓	✓	✓	✓	-
Mexico	✓	✓	✓	-	✓	✓	-
USA - Federal	✓	✓	✓	✓	✓	✓	-
Oceania							
Australia -Federal	✓	✓	-	✓	✓	✓	-
New Zealand	-	✓	-	✓	✓	✓	-
South America							
Argentina	✓	✓	-	✓	✓	✓	-

Country	Tariff	Network Access	Licensing	Rules	Dispute Settlement	Enforcement	Note
Brazil - Federal	-	✓	✓	✓	✓	✓	Only establish fair electricity rates to non-eligible end consumer
Chile	- (Ministry of Economy)	✓	-(Ministry of Economy)	✓	✓ (only license application dispute)	✓	-
Colombia	Regulate wholesale market Regulate network prices, capacity and quality Regulate supply tariffs						-
Ecuador	✓	✓	-	✓	-	✓	-
Peru	Regulate wholesale market Regulate network capacity and quality Regulate final tariffs						-
Uruguay	- (advice on tariffs)	-	-	-	-	✓	-
Venezuela	✓	✓	-	✓	✓	✓	-

Note: Tariff stands for approval or determination of the tariffs. Licensing includes of licensing and modifications of licenses. Rules stand for laying down rules regarding market rule, terms of delivery, quality and standards (within the limits of the legislation). Regulators settle dispute between operators and between operators and customers (Dispute settlement). Regulators are given power to enforce their decision (Enforcement).

Source: International Energy Regulation Network and Energy Industry Act of Thailand (2007)

Table 8 Composition of Board of Regulatory body in Various Countries

	Composition of Board	Term duration	Term characteristics	Term revocation
Africa				
South Africa	1 chairperson, 1 deputy chairperson, 1 CEO and 6 Members (5 are part-time and 4 are full-time member)	- 5 years for a full-time member - 4 years for a part-time member	Renewables	By the Minister of Energy and Minerals if members for infringement of its duties
Asia				
India - Federal	1 Chairman and 3 Members	5 years	Non-renewable	na.
Pakistan	1 Chairman, 1 Member (Gas), 1 Member (Oil) and 1 Member (Finance)	1. The Chairman shall be appointed for an initial term of four years and shall be eligible for reappointment for a similar term. 2. The Member Oil and Member gas shall be appointed for initial terms of three years and shall be eligible for reappointment for a term of four years. 3. The Member Finance shall be appointed for an initial term of two years and shall be eligible for reappointment for a term of four years. The Chairman and the other Members shall retire on attaining the age of sixty five years	Staggered	The Federal Government may remove a Member from his office if, on an inquiry by the Federal Public Service Commission, he is found unable, to perform the functions of his office due to mental or physical disability, or to have committed misconduct.
	1Chairman, 4 Members from each Province			-
The Philippines	1 Chairman and 4 Members	7 years	Staggered	By the President of the Philippines

	Composition of Board	Term duration	Term characteristics	Term revocation
Europe				
Belgium	1.Management Board (executive functions): 6 Members, amongst which one president 2. Council-General (supervision and consultative functions): 39 (non executive) Members representing federal and regional governments, utilities, system operator, traders, consumers, labour and environmental associations	1.Management Board: 6 years 2.General Council : 3 years	Renewable; no limit on the number of terms a regulator can serve	No provisions contained in the Electricity and Gas Acts
Croatia	1 Chairman, 1 Deputy Chairman, 3 Commissioners	5 years	Renewable, Not staggered	By Parliament in case of: 1.serious breach of statutory 2.duties criminal conviction 3.inability to conduct own duties for a period in excess of 6 months 4.conflict of interest
Denmark	1 chairman, 6 members	4 years	Renewable	not possible during the term of office
France	1 president and 6 members	6 years	Staggered (Commission initially renewed in thirds)	Dismissal of Commission Members not possible, except by forced resignation restricted to violation of incompatibility rules, to be confirmed by the minister in charge of energy

	Composition of Board	Term duration	Term characteristics	Term revocation
Italy	1 President and 4 Members	7 years	Non renewable and Non staggered	By Official Court, if regulator: 1. carries any professional or consultant activity 2. holds another public office of any kind whatsoever 3. retains interests in enterprises operating in the sector for which the Authority itself is responsible.
Lithuania	1 chairman, 4 commissioners	5 years	Renewable and Staggered	by President of Lithuania (apart from resignation or term expiry) because of: 1.election or appointment to another position; 2.effective conviction; 3.grave breach of the requirements for the position held; 4.violation of official ethics; 5.illness preventing commissioner to perform duties; 6.loss of the nationality of the Republic of Lithuania.
Netherlands	The management team consists of one director, and six members Formally the Board of the NMa (one chairman and two members) has the decisive power	6 years for the chairman and 4 years for other two members	Re-appointment possible for a maximum of 4 years	by Minister of economic affairs, for unsuitability of incompetence or other reasons with major cause

	Composition of Board	Term duration	Term characteristics	Term revocation
Spain	<p><i>CNE board</i>: chairman, vice chairman and seven members (ministry of economy representatives may attend board meetings but are not entitled to a vote)</p> <p>In addition to the Board, the regulator has two <i>Consultative boards</i>: 1. Electricity Consultative Board, 36 representatives 2. Hydrocarbons Consultative Board, 37 representatives</p>	6 years	Staggered and once-renewable	<p>by government at the proposal of the Minister on the following grounds:</p> <ol style="list-style-type: none"> 1. permanent disability for the performance of member's functions 2. legal conviction for a fraudulent offence following an inquiry by the Ministry

	Composition of Board	Term duration	Term characteristics	Term revocation
Great Britain UK	1 Chairman and currently 11 other Members of the Authority	<i>Chairperson</i> : normally 5 years <i>Non-Executive Directors</i> (External Members of the Authority): usually 3 years in the first instance, and may be re-appointed for a total period of service not exceeding 5 years <i>Chief Executive</i> and (currently three) <i>Managing Directors</i> are all permanent, executive appointments to the Ofgem. All four are Members of the Authority so long as they hold their Ofgem appointments in these positions	Staggered terms on re-appointment.	by the Secretary of State on the ground of incapacity or misbehaviour
North and Central America				
Canada - Federal	1 chairman, 1 vice-chairman, up to 7 members and up to 6 temporary members	7 years	Renewable (may be for others seven years or less until the age of seventy)	May be removed at any time by the Governor in Council on address of the Senate and House of Commons
Mexico	5 Commissioners, one of the which is the Commissioner President	5 years	Renewable and staggered	Commissioners may only be removed from office by causes established in the Federal Law of Public Servants Responsibility, or noncompliance of the provisions stated in the latter Law and its regulations
USA - Federal	1 chairman and up to 4 members	5-years	Staggered	Not available

	Composition of Board	Term duration	Term characteristics	Term revocation
Oceania				
Australia -Federal	1 Commonwealth member and 2 state/territory members	Up to 5 years	Renewable	By the Minister for misbehavior or physical or mental incapacity and if an associate member of the Commission: 1. becomes bankrupt, applies to take the benefit of any law for the relief of bankrupt or insolvent debtors, compounds with his or her creditors or makes an assignment of his or her remuneration for their benefit; 2. or fails to comply with his or her obligations under section 17 of the TPA
New Zealand	1 Chairman and from 4 to 8 members (currently 5)	5 years	Up to 3 years	na.
South America				
Argentina	5 members (including a Presidents and a Vice-President)	5 years	Staggered Renewable (indefinitely)	By the President of Argentina after review of decision by Parliamentary Commission
Brazil - Federal	5 Directors, including 1 Director General	4 years	Renewable, Staggered	na.
Chile	The board is presided by the Minister of Mining and Energy and its members are all Ministers of State: 1. Minister of Mining and Energy 2. Minister of Economy 3. Minister of Defense 4. Minister of Finance 5. Minister General, Presidential Secretariat 6. Minister of Planning and Cooperation.	The duration of the Executive Secretary's term is in relation to the confidence of the President	The executive secretary is in charge of those responsibilities delegated by the Board and those specified in Decree-Law 2224/1978	-

	Composition of Board	Term duration	Term characteristics	Term revocation
Colombia	8 members (5 commissioners, Ministry of Mines and Energy, Ministry of Treasury, National Planning Department – DNP)	4 years	Fixed term, Renewable	-
Ecuador	7 members	4 years	Renewable and staggered	Decision of represented authorities
Peru	5 members including the President	5 years	Renewable and staggered	Board members could be removed whenever a serious fault occurs as defined by law. The removal will be made through a Supreme Decree authenticated by the President of the Cabinet, the Finance Minister and the Minister of the Sector. In case of removal, the President of the Cabinet will inform Congress the reasons that motivated this decision.
Uruguay	3 members (1 president and two directors)	6 years	Renewable	By the same procedure as the appointment
Venezuela	FUNELEC is administered by the Executive Board (composed by one President, four commissioners and one substitute)	4 years	Renewable (once) and staggered	n.a.

Source: International Regulation Energy Network

Table 9 Appointment of the Board of Regulatory Body by Single Authority in Various Countries

Country	Parliament	President	Prime Minister	Minister	Government	Note
Africa						
South Africa	-	-	-	✓	-	-
Asia						
India - Federal	-	✓	-	-	-	Based on recommendation of a selection committee constituted by the central government
Mongolia	-	-	✓	-	-	Based on recommendation by the Minister of Fuel and Energy
Pakistan	-	-	-	-	✓	-
The Philippines	-	✓	-	-	-	-
Europe						
Belgium	-	-	-	-	✓	-
Croatia	✓	-	-	-	-	Upon proposal by government
Denmark	-	-	-	✓	-	-
Italy	-	✓	-	-	-	Upon nomination by the Minister Council at the proposal of the Minister of Industry. Nomination must be approved by Parliament before being ratified by the President.
Lithuania	-	✓	-	-	-	Upon proposal by government
Netherlands	-	-	-	✓	-	-
Spain	-	-	-	-	-	By Royal Decree at the proposal of the Minister of Industry following his appearance before parliamentary committee of economic affairs
UK Great Britain)	-	-	-	-	-	By Secretary of State for trade and industry

Country	Parliament	President	Prime Minister	Minister	Government	Note
North and Central America						
Canada - Federal	-	-	-	-	✓	-
Mexico	-	✓	-	-	-	With advice of Minister of Energy
USA - Federal	-	✓	-	-	-	With advice and consent of the Senate. No more than three commissioners may belong to the same political party
Oceania						
Australia -Federal	-	-	-	-	-	By Governor-General
New Zealand	-	-	-	✓	-	-
South America						
Brazil - Federal	-	✓	-	-	-	Nomination must be approved by the Senate.
Colombia	-	✓	-	-	-	3 members are Ministry of Mines and Energy, Ministry of Treasury, National Planning Department
Uruguay	-	✓	-	-	-	-

Source: International Regulation Energy Network

Table 10 Members and Appointment of the Board of Regulatory Body by Multiple Authorities

Country	Members/Appoinment
France	Chairman and 1 member are appointed by decree of the President of Republic. 2 members are nominated by the president of the national assembly. 2 members are appointed by the president of the senate. 1 member is appointed by the president of the economic and social council.
Argentina	3 of the 5 members are nominated by the President of Argentina(executive power) The remaining 2 members are nominated by the Federal Electric Energy Council The designation is subjected to the approval of a Parliamentary Commission (composed by 16-members)
Chile	The board is presided by the Minister of Mining and Energy and its members are all Ministers of State: 1. Minister of Mining and Energy 2. Minister of Economy 3. Minister of Defense 4. Minister of Finance 5. Minister General, Presidential Secretariat 6. Minister of Planning and Cooperation.
Ecuador	Members are nominated by the Authority they represent: 3 members by the President of Republic, 1 by planning national secretariat, 1 by army forces, 1 by production chambers and 1 by national electric workers
Peru	2 members are appointed by the Cabinet of Ministers, 1 by Ministry of Energy and Mines, 1 by the Competition Agency, and one by the Ministry of Finance

Source: International Regulation Energy Network