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**Risk, Regulation & Governance:  
Institutional Processes and Political Risk  
in the Thai Energy Sector\***

**Darryl S.L. Jarvis**

Associate Professor

Lee Kuan Yew School of Public Policy

National University of Singapore

Email: Darryl.Jarvis@nus.edu.sg

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**Abstract**

Infrastructure provision the world over has undergone a series of profound changes in the manner of its financing and governance over the last 30 years or so. While the role of the state has diminished as a direct provider, builder and operator of infrastructure, its role as regulator and overseer has undergone substantial growth, increasing the regulatory burden on the state. While this transition has occurred relatively smoothly in developed country contexts, in developing countries the diffusion of the regulatory state has produced manifestly different forms of governance, stressing the regulatory capacity of existing and newly formed regulatory bodies. This paper explores the impact and manifestations of regulatory diffusion in the context of the Thai energy sector and the governance mechanisms responsible for electricity generation, transmission and distribution.

**Keywords:** Thailand energy sector, institutions & regulation, regulatory risk, institutional design, institutional capacity

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## Introduction

In recent surveys of multinational firms, regulatory risk was rated ‘the greatest strategic challenge facing global business.’<sup>1</sup> Indeed, despite traditional risks associated with treasury operations, currency exposure, competition and operational risks, survey respondents overwhelmingly rated ‘political risk’ as the greatest recurrent challenge to business continuity and profitability. We should, perhaps, not be surprised by this. If the spate of theorizing, voluminous academic literatures and empirical investigations about ‘governance’ over the last two decades have taught us anything, it is this: institutions matter. Institutions frame the risk environment; institutional processes can generate, moderate and amplify risk, download compliance costs and otherwise define market extensity and the parameters that mediate economic, social and political interactions.

Beyond these observations, however, further insights are more difficult. Precisely what institutional features matter, what specific institutional variables are at play in risk generation, and in what magnitude and priority they relate to governance outcomes or regulatory systems, remains contested. This makes for a strange paradox; a near universal embrace of ‘good governance’ as a key ingredient for economic growth, social welfare and optimal state-market outcomes, yet an inability to operationalise the concept in ways that make it transparent or readily transferable. Policy diffusion might be all around us and the transplantation of regulatory frameworks a feature of an emergent ‘regulatory capitalism’ (Levi-Faur & Jordama, 2005:191), yet the sense in which such diffusion relates to the adoption, building and operation of institutions and the emergence of ‘good governance’ remains elusive. As the Nobel laureate Douglas North noted recently, we perhaps know more about the surface of the moon than we do the processes that lead to institutional formation, instantiation, institutional legitimacy, efficiency and probity, and their relationship to governance and regulatory systems.<sup>2</sup> Despite their importance, institutions remain enigmatic and with them, the quest for ‘good governance’ a highly prized but often unrealized goal.

These questions and the relationships that undergird them are increasingly important in an era that David Levi-Faur (2005) characterizes as ‘governance through regulation;’ where the expanding neo-liberal agenda does not diminish the state’s role

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<sup>1</sup> See surveys at [www.ev.com](http://www.ev.com); DLA Piper “European Regulatory Risk Awareness Survey 2007” assessable at [www.dlapiper.com](http://www.dlapiper.com)

<sup>2</sup> Douglas North, address to the Lee Kuan Yew School of Public Policy, National University of Singapore, March 11, 2008.

but transforms it, indeed increases its importance under the *modus operandi* of ‘regulatory capitalism.’ Increasing levels of private sector participation and an ever growing need to mobilize larger pools of private capital to fund infrastructure deployment from roads, railways, information communications technologies (ICT) to energy and educational capacity, for example, transforms the scope and role of government — often demanding more rather than less, or what Hood (*et al*, 1999) describes as an ‘explosive growth in investment in oversight.’ In developed economies this has produced contradictory tendencies; ‘leaner and meaner’ government which, in the case of the United Kingdom, for example, saw a 25% reduction in the number of civil servants between 1976 and 1996 but, for the same period, a relative explosion in staffing levels in regulatory bodies, growing by over 90% (Hood, *et al*, 1999: 29-31; Levi-Faur, 2005:20).

In the UK as in other advanced economies this transformation has been relatively well accommodated. Highly evolved institutional capacities, long established procedural norms and practices, and deeply instantiated institutional legitimacy, has allowed for effective governance adaptation. For theorists like Levi-Faur (2005), the conundrum that presents itself is thus little more than understanding the ubiquity of this process and how ‘regulatory diffusion’ and policy transfer transform the mode of governance in various juridical settings. Other theorists similarly approach the rise of regulatory capitalism in ubiquitous terms, but defined by the diffusion of global regulatory standards and codes that create overreaching structures of regulation. Braithwaite and Draos (2000:3), for example, note the extent to which states outside of Europe and the United States ‘have become rule-takers rather than rule-makers,’ where the regulatory standards and codes evolved by international organizations or consortia of public and private interests witness a diffusion of these standards into national contexts. In Australia, for example, many of the air safety standards ‘have been written by the Boeing corporation . . . or . . . the US Federal Aviation Administration. Australia’s ship safety laws have been written by the International Maritime Organization . . . its motor vehicle safety standards by Working Party 29 of the Economic Commission for Europe and its food safety standards by the Codex Alimentarius Commission in Rome ‘ (Braithwaite & Draos, 2000:3). For such literatures, the conundrum of regulatory capitalism resides in the technocratic imposition of rules and the implications for democratic participation in rule formation; how these may advantage the interests of rule-makers, disadvantage rule takers, and the costs and issues associated with technical implementation of global standards, regulatory codes and practices. For still other literatures the rise of the regulatory state is approached in more technical terms, focused upon regulatory

design and the technical parameters of outcomes, costs, efficiencies, and optimality for sector participants (Jaffe and & Stavins, 2007; Strausz, 2009).

Strangely absent from these literatures, however, are explicit attempts to theorize the institutional-regulatory nexus or examine it empirically. Institutions, while not ignored or theorized away, are simply assumed and their capacities, procedural systems, levels of instantiation, norms and practices, taken as given. Jordana, Levi-Faur & Marin (2008:9), for example, at various points conflate regulatory diffusion with institutional transplantation and adoption, neglecting issues of institutional capacity and the specific social and political contexts in which institutions are embedded — they are simply transplanted, capacities and all. Similarly, Levi-Faur (2005:17; Levi-Faur & Jordana, 2005), while noting that ‘regulatory capitalism sits quite comfortably’ with neoinstitutionalist literatures, fails to make the linkage between institutional forms, institutional functionality and specificity, and the implications for the regulatory state in institutionally unique or impaired environments. What might we expect when regulatory diffusion meets institutionally contested or poorly resourced environments? Can we simply assume the ubiquity of the regulatory state and similar forms of regulatory articulation in dissimilar institutional environments?

In this article, I suggest that the diffusion of the regulatory state and with it specific regulatory models and systems in developing country contexts, generates fundamentally different regulatory outcomes. Rather than a ubiquitous regulatory capitalism, variations in regulatory efficiency, differences in institutional endowments and the manner in which institutions are embedded in contested political and social domains, produces not only multifarious and unanticipated outcomes but often reductive oversight capacity. Further, I suggest that the unique institutional-regulatory interface that obtains in developing country contexts produces qualitatively different forms of regulatory risks, and, with them, a much wider and potentially more deleterious set of outcomes for both private sector participants and state interests.<sup>3</sup> While in advanced economies, regulatory risk ‘reflects the uncertainty behind new or changing regulation overtime’ (Strausz, 2009:2) and the compliance costs associated with this, in environments with impaired or semi-functional institutions the institutional-regulatory nexus becomes a domain that that can produce all manner of

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<sup>3</sup> While I do not address the methodological parameters of institutional analysis, I draw implicitly on the broader debates surrounding institutionalism in political science. See, for example, Hollingsworth (2000) and Hall and Taylor (1996). On the broader overreaching debate surrounding governance and conceptual approaches to institutional processes in governance outcomes see Kaufman, Kraay, Zoido-Lobaton (1999).

regulatory risks; facilitation of regulatory capture, for example, diminished probity, exacerbation of policy discontinuities, and poor levels of transparency and accountability — among others.

This paper explores these issues in relation to the institutional environment in the energy sector in Thailand; specifically, the electricity generation, transmission and distribution sector. Like many developing economies, Thailand's has evolved an energy policy reflecting its desires to increase its energy security, lessen its dependence on external energy sources, while rapidly deploying energy infrastructure to facilitate economic development. Part of this process has involved the imposition of new regulatory frameworks, largely adopted from models developed in the United Kingdom. Thailand thus represents an instance of regulatory diffusion of specific regulatory models but in a developing country context where institutional processes are evolving and where institutional endowments and capacities remain truncated.

The paper is organized into two sections. The first surveys the Thai electricity sector, addressing the evolution of the regulatory regime governing the up-stream (generating) and downstream (distribution / transmission) sector, and the governance outcomes produced by an impaired and still pre-formative institutional environment. The second section addresses the institutional environments of the oversight agencies in relation to their budget capacity, level of statutory independence, skill and human capital resources, appointment and leadership processes, stakeholder engagement processes and the systems of accountability and transparency as a means of understanding how specific institutional-regulatory contexts generate unintended regulatory outcomes and regulatory risk.

Critical to my analysis have been the perspectives gathered through fieldwork and interviews conducted with regulators and private sector participants in the Thai energy sector. Where requested, the identity of interview subjects has been protected.<sup>4</sup>

## **The Thai Electricity Sector**

### *Historical Background*

Electricity is a political commodity in Thailand. Electrification, roll out of generating and transmission infrastructure and consumer / industrial access to electricity is

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<sup>4</sup> Interviews were conducted in November, 2008 and between January 26 and January 30, 2009.

intimately associated with the developmental plans and ambitions of the Thai state and its people (Williams & Dubash, 2004). Indeed, growth in demand for electricity has been a leading indicator of the country's rapid development, expanding annually by 10% from the mid 1980s as Thailand moved into energy-intensive industrialization in petrochemicals, manufacturing, steel and cement production and expansion of upstream refinery capacity (Woo 2005:3). At the same time, rapid urbanization and favorable pricing policies made electricity comparatively inexpensive, promoting electricity energy substitution and a further expansion in generating capacity (Wattana, *et al*, 2008:43). While the Asian financial crisis witnessed significant reductions in electricity demand in line with a contraction in economic activity, since 2001 growth in demand has returned, expanding annually between 3-7% and on April 24, 2007, achieving a record peak power demand indicative of continuing energy-intensive industrialization (EGATS, 2008:7).<sup>5</sup>

The importance of electricity to Thailand's economic development has historically made for a strong state presence in the electricity sector, with three government owned enterprises dominating power generation and distribution since the late 1960s; the Electricity Generating Authority of Thailand (EGAT), the Metropolitan Electricity Authority (MEA), and the Provincial Electricity Authority (PEA)(see Table 1). EGAT's inception in 1968 represented a decade long process of vertical integration, with the government merging several state-owned regional generating authorities to form a 'sole agency responsible for generation and transmission of electricity to the entire nation' (Wattana, *et al*, 2008:44). Indeed, the creation of EGAT's is itself a reflection of earlier forms of policy diffusion, with the World Bank and USAID strongly endorsing a single independent power agency as a condition for loans to finance infrastructure roll out.<sup>6</sup> The result was a triangulated and vertically integrated electricity sector, whose central role in powering Thailand's industrialization made the three power utilities not only politically strong but in effect self-regulating apart from financial requirements set by the Ministry of Finance (Wattana, 2008:48; Williams & Dubash, 2004; Greacen & Greacen, 2004:519).

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<sup>5</sup> Electricity demand grew by its six fold between 1982 and 2002, with consumption growing from 16, 900 gigawatt-hours (GWh) to 108,400 GWh (Greacen & Greacen, 2004:518)

<sup>6</sup> As Supannika Wattana (*et al*, 2008: 43) notes, for example, for much of the 1970s and early 1980s, the World Bank was EGAT's main source of external financing, creating a dependent relationship that saw EGATs adopt much of the policy architecture favored by the bank.

<b>Table 1: Thailand's Electricity Sector: 1968-1992</b>		
<b>Utility</b>	<b>Inception</b>	<b>Mandate and Functions</b>
EGAT	1968	Sole agency responsible for electricity generation and transmission in Thailand; central planning of national electricity development; pricing and tariffs; direct power and electricity distribution to a few, key large consumers
MEA	1958	Responsible for distribution and all retail service functions (connections, meters, billing, maintenance) in key metropolitan areas such as Bangkok, Nonthaburi and Samut Prakan
PEA	1960	Distribution responsibilities for all other (predominantly rural) areas outside of Bangkok, Nonthaburi and Samut Prakan

Source: Woo, 2005:5; EPPO, Energy Sector Management in Thailand, 15.

### **Early Reform Efforts in the Thai Electricity Sector: 1980-1990**

The rapid deployment of electricity capacity via centralized agencies like EGAT's proved both highly successful and costly for Thailand.<sup>7</sup> Much of the capacity roll out was financed by external loans, with the three power utilities responsible for nearly half of all of Thailand's external borrowing between 1967 and 1971 (and as much as 37% between 1972-76). Thailand's power utilities thus entered the energy crises of 1974 and 1979 with heavy debt burdens and a reliance on imported oil (required for electricity generation). The result was a tripling of the nation's external energy bill between 1979 and 1981 and a blow out in national debt, reaching 39% of GDP (Wattana, *et al*, 2008:44-45; Greacen & Greacen, 2004:520).

By the early 1980s state-led development through external financing thus became problematic, and in the case of electricity highly politicized. Electricity prices rose dramatically off the back of higher energy costs and debt servicing, increasing 259% between 1979 and 1982. Political pressure to maintain low electricity tariffs and facilitate greater access to electricity among Thailand's rural and urban poor, created contradictory pressures to appease domestic constituencies and set artificially low tariffs while attempting to address the rising debt burden of the utilities. In the face of burgeoning public debt Thailand was forced to seek emergency assistance from the IMF (1981, 1982, 1985) and negotiate a series of conditional structural adjustment

<sup>7</sup> By 1981, for example, over 50% of Thai's had access to electricity (Greacen & Greacen, 2004:519).

loans (SALs) from the World Bank. Part of the loan conditions required price increases for electricity and the privatization of state-owned enterprises in order to increase private sector participation and thus reduce public sector debt (Greacen & Greacen, 2004:520; Chaivongvilan et al, 2008: 56).

By 1988 the government's 'White Paper on Enterprises' recommended the privatization of 41 of Thailand's 61 state-owned enterprises (by 2001). EGAT was classified a 'Class A state Enterprise' and earmarked for privatization through a three track process; first, partial privatization of EGAT through equitization and forced divestiture; second, the introduction of new industry players via the sale of EGAT's up-stream generating assets; and third, the procurement of power from privately operated independent power producers (IPP)(Woo, 2005:6).

Despite emergent ideational change among domestic coalitions, in particular an increasingly vocal and influential Thai middle class and a pro-democracy movement generally aligned with the interests of privatization, the first efforts to privatize the utilities and liberalize tariffs failed. Labour unions, consumer groups, Thai nationalists and academics created a powerful coalition which, in conjunction with EGAT's vested interest in preserving the status-quo, succeeded in thwarting privatization initiatives. By the end of the decade, EGAT's thus continued to enjoy a monopoly but with mounting external debt and expanding infrastructure obligations. Thailand's explosive economic growth throughout the 1980s, for example, tripled electricity demand and resulted in electricity shortages and 'brownouts,' threatening the country's continued industrialization. EGAT's was forced to roll out greater generating and transmission capacity topping over US\$ 1 billion annually by the end of the 1980s, again mostly financed through concessional bi-lateral loans. By 1989-90, EGAT's fiscal position was thus precarious, with some 57% of its annual operating budget forced to be set aside to service its foreign debt obligations (US\$1.168 billion in fiscal year 1989-90) (Greacen & Greacen, 2004:520, Wattana *et al*, 2008:45-46).

### **The Diffusion of Privatization in the Thai Electricity Sector, 1990-1999**

Thailand's continued economic success in the early 1990s only exacerbated electricity capacity issues. Between 1985 and 1995, for example, Thailand was the world's fastest growing economy, with real GDP expanding annually by 8.4% (Greacen & Greacen, 2004:521). With mounting generating capacity and transmission requirements EGAT's financing arrangements became increasingly problematic. By the early 1990s, for example, the World Bank had put in place new electricity

infrastructure lending policies, setting down conditions stipulating the establishment of market based regulatory regimes, the commercialization and corporatization of the electricity sector agencies, and liberalization of the sector to facilitate foreign ownership and greater private sector participation (World Bank, 1993). As Wattanna (*et al*, 2008: 45) notes, ‘the continuing pressures coming from international financial agencies in parallel with the rapid rise of electricity demand created a situation which saw private investment the best alternative.’ At the same time, the successive administrations of prime ministers Chatchai (1988-91), Anand (1991-2) and Chuan (1992-4) commenced an extended period of pro-market reforms that would ultimately come to reconfigure the policy architecture and regulatory regime governing electricity.

Some of this had commenced previously with the creation of the National Energy Policy Office (NEPO) in 1986 and formed as a secretariat to the National Energy Policy Council (NEPC) which reported directly to the Prime Minister’s office. NEPO was headed by the influential and politically powerful Dr. Piyasvasti Amranand (1986-2002) with NEPO essentially driving energy policy in Thailand through the NEPC. Under Piyasvasti, NEPO became a strong proponent of market rationalism and privatization, lobbying the Prime Minister and cabinet for reform in the electricity sector as a means of addressing EGAT’s precarious debt position (Greacen & Greacen, 2004:523; Electricity Governance in Thailand, 2006). Its invigorated role under the 1992 National Energy Policy Council Act, essentially made NEPO the most influential energy body in the country, assuming significant powers over all facets of energy policy, planning and pricing.<sup>8</sup> In quick succession, NEPO secured technical assistance from the World Bank to assist in the privatization of the electricity sector and supported passage of amendments to the EGAT’s Act (1992), allowing private power producers (PPP) to enter the upstream generating sector.

Two PPP’s subsequently came on line; the first in May 1992 with the formation of the ‘Electricity Generating Company Limited’ (EGCO), and the second in 2000 with the formation of the ‘Ratchaburi Electricity Generating Holding Public Company.’ Both were initially formed as wholly owned subsidiaries of EGAT’s. Both EGCO and Ratchaburi would be floated on the Stock Exchange of Thailand (SET), raise funds via their initial public offering (IPO), tap capital markets and then purchase generating plants from EGAT’s as part of a forced divestiture. By breaking EGAT’s monopoly on power generation and creating market competition in up-stream

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<sup>8</sup> See ‘National Energy Policy Council Act, B.E. 2535’ (1992), Government Gazette, 109, Part 7, February 12, Kingdom of Thailand.

generation, the reforms aimed to lower generation costs and stem the tide of tariff increases under EGAT's.

### *Outcomes*

Thailand's first foray into electricity privatization produced contradictory outcomes. Far from perfect competition, EGATs retained significant interests in both EGCO and Ratchaburi. As recently as 2005-6, for example, EGAT's retains a 25% stake in EGCO and a 45% interest in Ratchaburi. As the sole purchaser of power from EGCO and Ratchaburi, EGAT's interests are conflicted. It retains a commercial interest in the profitability of EGCO and Ratchaburi and an ability to pass on supplier costs to end consumers. By one account, for example, EGAT's pays as much as 20% more for power from EGCO as from other private producers (Greacen & Greacen, 2004:523). This incentivizes collusion and the prospects of agreed cost structures rather than competition with incentives to lower costs. As Woo (2005:6-7) observes, rather than competition 'there is an informal agreement between . . . [the] . . . companies not to directly compete for the acquisition of assets' that even extends to setting out 'their prospective spheres of influence for investment in neighboring countries.' More obviously, the nature of the power purchase agreements (PPAs) between EGAT's, EGCO and Ratchaburi utilized a 'take or pay' contract, protecting PPPs from demand variations and downloading excess capacity risks to EGAT's and in turn Thai consumers.

Most glaring, however, was the failure to develop new regulatory oversight authorities or innovate regulatory capacity concomitantly with privatization roll-out. EGAT's retained a powerful role in the government structure and for all practical purposes enjoyed self-regulation. EGAT's reporting and accountability mechanisms, for example, amounted to little more than the preparation of annual accounts to the Ministry of Finance with sensitive or commercial in-confidence agreements with PPPs remaining undisclosed. Privatization was essentially occurring in a regulatory vacuum, absent accountability, oversight, compliance and enforcement mechanisms surrounding competition, pricing, private sector participation or consumer protection. Privatization was itself seen as a form of regulatory innovation but absent institutional developments to administer the commercial parameters of this new environment. As far as NEPO were concerned, privatization would bring its own rewards — the institutional innovations could come later (Sirasoontorn, 2005:3)

### *Privatization amid Regulatory Opacity: The Introduction of IPPs*

The absence of a robust regulatory context defines much of Thailand's subsequent reform efforts in the electricity sector. The second track of privatization commenced in December, 1994, for example, saw the introduction of independent power producer (IPP) and small power producer (SPP) programs, designed to attract private foreign investment to build, own and operate large and small scale power plants, enhancing generating capacity while reducing public expenditure commitments.<sup>9</sup> As before, IPPs and SPPs would enter into power purchase agreements (PPAs) with EGAT's, the sole purchaser of electricity. Seven IPP concessions were granted in 1994-1995 to supply 6,345 MWs with commercial operating dates commencing between 1999-2003 (Woo, 2005:7).

While the bidding process for IPP licenses was competitive, there was no regulatory mechanism in place to oversee governance in the sector in terms of the mediation of competitive pressures down the value chain to consumers and tariff prices. PPA's negotiated between the IPPs and EGAT's, for example, operated on the basis of a 'regulated returns environment,' guaranteeing returns on the basis of estimated IPP costs at the time of the granting of the concession. Any efficiency gains through technical innovation or lower operating costs were retained by the IPP (Wattana, *et al*, 2008:47; Sirasontorn, 2005). Similarly, oversight of the sector and the commercial practices of the IPPs and EAGT's fell to NEPO and NEPC, who, as Sirasontorn (2005) observes, were not regulators *per se* but architects of the policy environment with no surveillance, enforcement or compliance capacities or mandated obligations in this regard. For investors in the IPPs, the absence of a formal system of regulatory oversight exposed them to the perils of a single purchaser (EGAT's) relationship, changes in the policy preferences and agendas flowing from NEPO, and possible changing political coalitions otherwise driving energy policy at the Cabinet level via the NEPC. Rather than a consistent regulatory environment, Thailand's energy policy existed outside of an institutionally instantiated process defined by formal processes for review, stakeholder engagement and innovation. Instead, energy policy was contained in a highly circumscribed institutional setting, NEPO, and otherwise captured by an energy Czar, Piyasvasti. As went the political winds of change, so would go NEPO, Piyasvasti, and Thailand's electricity privatization agenda.

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<sup>9</sup> EGAT's commenced purchasing power from large IPPs in 1999 and SPPs in 1996.

## **Winds of Change in the Thai Electricity Sector: Policy & Political Instability, 2001-2006**

After the Asian financial crisis (1997), the Thai government drew up and approved a ‘Master Plan for State Sector Reform’ in line with the letter of intent presented to the IMF as part of Thailand’s bailout package (Electricity Governance in Thailand, 2006:10).<sup>10</sup> The Master Plan outlined the ‘basic guidelines, principles, practices and time frames for privatization plans, legal, regulatory and institutional changes (Sirasoontorn & Quiggin, 2007:403; NEPO, 1999:7). The plan called for the full privatization of the electricity sector similar to the ‘power pool model’ adopted in the UK. In essence, the sector would be ‘unbundled,’ separating out the generating, transmission and distribution sectors. At the generation end, EGAT’s generating assets would be split into three separate generation companies, privatized and sold off. Each of these generating companies would then compete in a ‘power pool’ selling power on a spot market where supply and demand would determine spot prices for electricity. EGAT’s would be morphed into a transmission company and retain sole national transmission rights and responsibilities. MEA and PEA, in the meantime, would each be split up into regulated electricity delivery companies and compete in the retail market. The power pool would commence functioning in 2003, instigating a period of competition in the electricity sector at both the wholesale and retail ends with EGAT’s solely responsible for transmission activities (EPPO, 2000). Concomitantly, the government would move to appoint an independent and all-powerful regulator similar to the UK model (Office of the Gas and Electricity Markets, UK) whose mandate would be to regulate competitive activities in the wholesale sector, oversee the natural monopoly created in the transmission sector by regulating transmission charges to IPPs, as well as regulate the limited competition expected to emerge in the retail distribution sector (Sirasoontorn, 2005:3; Electricity Governance in Thailand, 2006:9; EPPO, 2000; World Bank, 1999).<sup>11</sup>

While strongly supported by the Chuan administration (1997-2001) as an effort to meet not only its obligations to the IMF but fundamentally transform the electricity sector and address the precarious financial status of EGAT, the reform agenda was widely unpopular. EGAT’s opposed the reform initiative; EGAT’s unions feared job losses, Thai nationalists felt it would lead to the takeover of national assets by foreign interests, consumers feared it would increase power prices or lead to the advent of

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<sup>10</sup>Master Plan for State Sector Reform available at <http://www.mof.go.th/sepc/sepcf1.htm>

<sup>11</sup> Graecen & Graecen (2004:526) reports that NEPO commissioned the report outlining the reform recommendations at a cost of some US\$10 million which was paid to a consortium of foreign management companies.

privatized monopolies, and the Thai press feared corruption or favoritism in the privatization process (Sirasootorn, 2005:3; Electricity Governance in Thailand, 2006:9).<sup>12</sup> In the wake of the fallout and severe economic dislocation caused by the Asian financial crisis, popular sentiment in Thailand was increasingly suspicious of still further reform championed by international organizations or the value of imported foreign models. The Chuan government's reform efforts thus became increasingly imperiled, indeed used by the populist politician, Thaksin Shinawatra, in his election bid to become Prime Minister (Electricity Governance in Thailand, 2006:9-10).

Soon after its election, the Thaksin administration (2001-2006) abandoned the power pool model. Behind this move lay a broader political agenda that aimed to transform state owned enterprises into strategic entities that would fuel Thailand's subsequent growth and propel it out from underneath IMF loan obligations and a languishing economy. Instead, Thaksin moved to create a 'register of capable state enterprises as public companies.' These companies would be incorporated, floated on the SET, stimulating investment in the still languishing Thai equity market and, in the process, generating significant financial resources that could be directed into needed expenditure programs (pay down of IMF loans, for example). Thaksin's aims were simple: turn SOEs like EGAT's into 'national champions.' The move was a populist one which had the veneer of keeping Thai assets in Thai hands by imposing foreign equity ceilings or ownership limits (partial privatization) while also addressing a privatization agenda with the aim of improving competition and sector efficiencies (see Chirarattananon & Nirukkanaporn, 2006; Greacen & Greacen, 2004:527).

Most significant in the energy sector, however, was Thaksin's restructuring of the formal institutional mechanisms for energy governance. Soon after his election, Thaksin transferred the energy czar, Piyasvasti, out of NEPO and subsequently established a new Ministry of Energy (MOE) in 2002, disestablished NEPO and established the Energy Policy and Planning Office (EPPO, 2002).<sup>13</sup> Under these new governance arrangements, electricity policy making roles were relocated directly into the Ministry, with EPPO downgraded and reporting to the Energy permanent secretary rather than to the Minister or cabinet. In doing so, the political clout of EPPO (compared to NEPO) was diminished, with energy policy now firmly controlled inside the executive and subject to direct political considerations.

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<sup>12</sup> "EGAT people in search of a future," *The Nation*, June 25, 1999.

<sup>13</sup> The events surrounding Piyasvasti's relocation out of NEPO and his displacement as Thailand's energy Czar are contested. See Gracen & Gracen (2004:530-532).

These changes benefited EGAT's, allowing it to emerge as a 'national champion' and, in the process, able to exert increasing influence over the MOE and to position itself strategically inside the reform debate. The new political climate called for strong Thai companies, 'champions' that would promote Thai enterprise and compete successfully against foreign companies. Thai nationalism latched on to Thai SOE's as potential saviors against foreign ownership and resentment toward organizations like the IMF and their perceived roll in the economic hardships Thailand had been forced to endure. As a result, EGAT's enjoyed political support from the Thaksin administration which it leveraged to help guide reform of the electricity sector. The appointment of the Boston Consulting Group (BCG) in 2003 to prepare a new National Energy Strategy by the MOE, for example, was welcomed by EGAT's who enjoyed a long standing relationship with the company. In turn, the defacto role that EGAT's played in the subsequent recommendations prepared by BCG and adopted by the Thaksin administration, enabled EGAT's to preserve much of the status quo.

The new recommendations called for the implementation of an Enhanced Single Buyer (ESB) model. The model deviated little from previously recommended models. EGAT's would be privatized, preserve its monopoly over transmission and compete directly with IPPs in the generating sector. PEA and MEA would be corporatized and compete in the retail market. Finally, the ESB model called for the creation of a robust independent regulator with clearly defined rules, powers and resources in order to ensure enhanced competition and address monopolistic practices (EGAT, 2008). The policy was to be implemented by 2004.

Despite Thaksin's popularity, the privatization of EGAT's proved politically difficult. Public hearings, union concerns and the increasing mobilization of civil society groups created a strong political constituency opposed to EGAT's privatization (Thomas *et al*, 2009:27; Foran, 2006:40). In particular, the September, 2005 decision by the Thaksin administration to restructure and at the same time increase electricity tariffs, created a popular backlash. While the Thaksin administration sought to increase EGAT's revenues, improving its debt to equity ratio and thus share price when it listed on the SET, civil society and consumer groups thought the changed tariffs structures unjustified and feared that the benefits of privatization would not accrue to Thai consumers (Electricity Governance in Thailand, 2006:13). Despite attempts to appease opposition groups by announcing a freezing of the tariff regime for 3 years, the Confederation of Consumer Organizations submitted a petition to the Supreme Administrative Court to suspend EGAT's share offering. Subsequently, the Supreme Administrative Court ruled in favor of the petition, ordering a suspension of

the share issue on November 17, 2005, and subsequently canceled the royal decrees allowing EGAT's privatization (Sirasoontorn, 2008; Chaivongvilan, 2008:56-57).

## **Regulatory Diffusion: The Emergence of the Energy Regulatory Commission, 2007**

The story of Thailand's electricity reform efforts did not end with the premiership of Thaksin. They were, however, abruptly interrupted by the military coup (September, 2006) and the political mechanizations leading to the reinstatement of democracy in December, 2007. Ironically, despite 14 years of reform efforts it was amid the relative chaos of the post-coup period that legislators finally approved the creation of a regulatory regime.

The Energy Industry Act (December, 2007) created a single regulatory body, the Energy Regulatory Commission (ERC), the first in Thailand's history. Modeled on the UK's Office of the Gas and Electricity Markets, ERC's mandate is wide and varied. It includes:

- input and review of Thailand's national energy policy
- input and review of the Power Development Plan (historically the exclusive preserve of EGAT's)
- review and comment on the investment plans of the electricity industry, the national gas procurement plan and the energy network system expansion plans
- development and implementation of customer service standards
- development and oversight of service provision standards
- surveillance, inspection and oversight of licensees in the upstream generation, transmission and distribution sectors
- development of regulatory codes and standards pertaining to industry operators
- establishment of stakeholder engagement processes and procedures
- development of conflict of interest guidelines for ERC board members
- development of regulations and criteria for financial contributions, disbursements and administration of the 'Energy Fund'
- oversight authority in respect of IPP and PPAs
- development of regulations and engineering safety standards in respect of industry operation and the certification of equipment / devices

- oversight and development of energy consumer protection protocols, including the appointment and operation of a ‘Regional Energy Consumer Committees’ (RECC’s)<sup>14</sup>
- oversight and review of electricity tariffs and applications for tariff adjustment, including the development of a ‘methodology’ for tariff calculation
- oversight and responsibility for the security and reliability of the power system
- responsibility for promoting competitive practices in the industry (Lavansiri, 2008; interview with ERC Chairman and Commissioners, ERC, Bangkok, January 26, 2009; ERC, 2008).

The background surrounding ERC’s creation and mandate is instructive, revealing considerable political opposition and the likely difficulties it will encounter in establishing its regulatory authority and exercising statutory independence. Indeed, despite passage of the Energy Industry Act (2007), successive post-coup administrations under Samak Sundaravej, Somchai Wongsawat, Chaovarat Chanweerakul and Abhisit Vejjajiva between January 29, 2008 and December 17, 2008, were not strongly supportive of the establishment of an independent regulator (interview, Bangkok, November, 2008).<sup>15</sup> If anything, passage of the act reflects more the weakness of successive administrations, the need to carry core constituencies, and weakened executive authority in determining the legislative agenda. The ERC might thus have ‘slipped’ through the legislative hurdle but this should not be confused with cabinet approval or support. Indeed, the government’s lukewarm support for the ERC is revealed in the go-slow approach cabinet adopted throughout 2008 in the approval of ERC’s budget and the delayed announcement of Commissioner salaries, effectively putting the ERC on hold during its first year of operation (interview, Dr. Pallapa Ruangrong, ERC Commissioner, Bangkok, November, 2008).

Further, the extent to which the ERC will enjoy fiscal autonomy and thus be free of external pressure through budget manipulation remains problematic. Historically,

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<sup>14</sup> RECC’s are, in turn, charged with addressing the petitions of consumers against generators, EGATs and power distributors as it impacts retail operations, mediating consumer complaints, the development and proposal of corrective measures to improve measures regarding energy provision in the regions, coordination with the energy industry operators in securing information petitioned by consumers and mediating consumer complaints with industry operators to improve service delivery.

<sup>15</sup> In the wake of the military coup and the reestablishment of democracy, Thailand experienced political instability with four different Prime Ministers in quick succession: Samak Sundaravej (29 January 2008 – 8 September 2008); Somchai Wongsawat (18 September 2008 - 2 September, 2008); Chaovarat Chanweerakul (acting Prime Minister, 2 December, 2008 to 17 December 2008); Abhisit Vejjajiva (17 December 2008 —).

Thai governments have not been well disposed to stand alone statutory agencies since they represent lost revenue streams. Prior to the creation of the ERC, for example, the MOE enjoyed a windfall from operator fees of Baht THB100 million (approximately US\$ 2 million) per license. This now falls to the ERC whose income from license fees is estimated to be between Baht THB500 to 600 million annually (approximately US\$16 million) (interview, ERC Commissioners, January 26, 2009). Yet, in its first full year of operation (2008), the ERC was only able to issue interim operating licenses due to the failure of cabinet to approve full licensing autonomy, curtaining the ERC's budget revenues and capacity development in its first year of operation. Such irritants likely point to future contests between the ERC and future administrations. Under the current Energy Industry Act (2007), for example, the energy minister and cabinet have ultimate approval authority over the ERC's budget expenditure including its operational plan and, under section 40 of the Act, the ERC are notionally required to return excess revenues above operational costs to the Ministry of Finance (Energy Industry Act, 2007: Section 9-8; Part 2, Section 40). The full intent of these clauses and how they might be interpreted and applied remains to be seen, what is obvious, however, is the interpretative space this leaves successive administrations to challenge the fiscal autonomy of the ERC and in the process its independence as a statutory regulator. Without budget autonomy and guaranteed revenue ownership, the prognosis for the ERC's establishing its autonomy will be problematic (interview, Bangkok, November, 2008).<sup>16</sup>

There are also broader concerns about the level of autonomy the ERC will enjoy. Cabinet approval for the issue of regulations, for example, is required under the Act as are public hearings before regulations can be proclaimed (interview, Dr. Pallapa Ruangrong, ERC Commissioner, ERC, Bangkok, November, 2008). Further, in the discharge of its mandated duties to review and set tariffs structures, it is unclear where the lines of authority are drawn. Ostensibly these lie with the ERC, but when interviewed ERC commissioners indicated that the tariff review process was situated between guidelines issued by the NEPC, MOE and prevailing government policy, and that stakeholders like EGATs had significant interests. When asked about authority spheres and rule ownership, for example, the Chairman and ERC Commissioners suggested these had still to be worked out, that the ERC was still in its early stages of development (interview, ERC, Bangkok, January 26, 2008).

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<sup>16</sup> At the time of writing, the ERC budget for 2009 had been approved. However, the details of this cannot be confirmed. Dr. Direk Lavansiri, Chairman of the ERC, indicated the ERC budget would approach Baht THB600 million for 2009 and that the operating budget for the organization would come entirely from license fees (Interview, January 26, 2009).

These blurred lines of authority are also evident in the consultative and bespoke relationships between the ERC, MOE, and EPPO and how each relates to the other in the operation of the regulatory regime. The process of policy review of the national energy plan, historically the preserve of NEPC and EGAT's in terms of its 'future demand models,' will not likely be ceded by either organization easily, suggesting that the ERC might act more as a commentator than serious player in energy policy — compromising its ability to oversee energy security, quality of service delivery and energy security. Similarly, its ability to act as an impartial broker in tariff adjustment cases requires cross-institutional cooperation, information symmetries between operators, EGAT's and NEPC, and political non-interference by the energy minister and cabinet in what have historically been highly contested political decisions. While stipulated in the Act and thus notionally within the authority domain of the ERC, operationalizing the policy mechanisms that instantiate ERCs role in energy policy, tariff adjustment, or the issuance of licenses, thus far remains undefined and unaddressed.<sup>17</sup> When asked, for example, how the ERC will inject itself into this policy space, establish its presence and effect inter-agency cooperation and policy coordination, ERC commissioners were only able to refer back to the black letter law of the Energy Industry Act, highlighting the fact that administrative norms or considerations about the broader project of instantiating the institution to ensure its regulatory effectiveness, have not been considered. As the ERC Commissioners noted, they are currently focused on more tangible operational issues; construction of a mission and vision statement, getting the web page up and running, and developing capacity (interview with ERC Commissioners and Chairman, ERC, Bangkok, January 26, 2009). While the ERC's inception is thus a positive step forward the highly contested and fluid nature of governance in Thailand's energy sector presupposes that this is still a sphere open to future contestation, where the authority, legitimacy and regulatory effectiveness of the ERC remain in doubt.

### *Regulatory Capacity*

This gap between the creation of a regulator and its ability to regulate is perhaps the most obvious example of how problematic the institutional-regulatory nexus is in developing country contexts. Regulatory diffusion pen ultimately hangs on regulatory capacity. As Gasmi (*et al*, 2009:2), observes, the fundamental role of liberalization,

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<sup>17</sup> These problems impact all levels of energy policy in Thailand. The relationship between EPPO, the Ministry of Energy, the permanent secretary for energy and the Cabinet, for example, reveal little policy coordination and an absence of policy consultation mechanisms. As the report on energy governance in Thailand noted, 'there is no . . . defined mechanism that requires the executive to consult (EPPO) . . . on major policy issues or to evaluate how the executive responds to recommendations / decisions of the agency' (Electricity Governance in Thailand, 2006; Section A: 15-16)

deregulation and regulatory reform has been to ‘redesign the legal and regulatory frameworks so as to induce “proper” economic incentives . . . namely, incentives for operators to enhance their offerings . . . cost efficiency, quality of service, and tariffs.’ For developed countries this has essentially involved a modernization ‘of an already existing fabric of institutions with a complex system of operating rules built over a long history of political and economic administration of market economies’ (p.2). In developing country contexts, the question of institutional design or the diffusion of regulatory models, presupposes a much more complex set of issues that range from administrative capacity to human skill capacity.

Thailand’s ERC is a case in point. After 15 months of operation, its administrative and regulatory function remains rudimentary. The breadth and scope of its mandate, for example, requires high capacity surveillance over market functions, the deployment of compliance and enforcement mechanisms, sophisticated analytical systems in the case of review and input to the Energy Master Plan, tariff adjustment claims, economic and social impact assessment, roll out of a host of regulatory standards, the development of an extensive network of representative regional offices, oversight and administration of the collection and disbursement of revenues to the ‘Power Development Fund’ — among other technical programs and oversight responsibilities.<sup>18</sup> In all, the ERC will require 9 separate administrative departments to oversee all of its regulatory functions.<sup>19</sup>

The mandate is obviously extensive, yet the available capacity to meet these regulatory obligations is still formative. The organization is currently resourced with 30 staff, mostly non-technical administrative personnel, with ERC leadership provided by 6 full-time commissioners and a chairperson. The absence of personnel with technical ability in regulatory administration in the industry is notable, with the ERC currently negotiating the transfer of 10 staff from EPPO to help provide technical capacity to the organization (interview, ERC commissioners, January 26,

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<sup>18</sup> The Power Development Fund has multiple objectives. It is leveled against any utilities with a PPA greater than 6 MWs, and charged against production of natural gas, oil, diesel, coal, wind and solar power, biomass and hydro electricity generation. The fund compensates licensees who have provided services for underprivileged power consumers at below cost recovery rates; subsidies rural electrification; pays for the rehabilitation of localities impacted by power plant operation; to subsidize the development of renewable energies; to pay for public awareness campaigns in the use of energy; to reimburse users under previous tariff formula who were overcharged for energy usage; to pay for the operation of the fund itself (Lavansiri, 2008)

<sup>19</sup> The ERC have announced the following administrative divisions: ‘General Provisions, Regulatory Body for the Energy Industry Operation, Regulation of the Energy Industry Operation, Energy Consumer Protection, Utilization of Immoveable Property, Redress of Disputes and Lodging of Appeals, Competent Officials, Disciplinary Procedures, Punishment’ (Lavansiri, 2008).

Bangkok, Thailand).<sup>20</sup> Attracting and retaining technical and high capacity personnel, however, is an obvious problem. While the ERC will be able to offer salaries twice those of public service pay rates, these still fall far short of remuneration standards available in the industry itself. There is thus little prospect for attracting candidates with industry experience or of preventing talent transfer to industry operators in the longer term. Most telling, however, is the ‘map’ to which the ERC commissioners are working in terms of developing ERC’s capacity. The organizational structure and needs appear to be mostly defined by external, private sector consultancies (notably the Boston Consulting Group and PriceWaterhouseCoopers) with little internal input into the adequacy of the targets, their impact or utility to the organization’s structure, functions and operation. Indeed, the fact that PwC has been retained and appears to be the lead agency in the strategy and roll out of the ERC’s capacity development is itself an indication of the paucity of internal capacity the ERC faces.

These capacity issues also impact the regulatory functions of the ERC in other less immediate ways. The diffusion of regulatory principles surrounding accountability, transparency and stakeholder engagement processes, for example, articulate in vastly different ways in developing country contexts compared to counterparts in developed countries. While the ERC, for example, have nominally adopted transparency and accountability principles as part of its legislated mandate in the Energy Industry Act (2007), the interpretation and intended practices surrounding these reveal highly perfunctory outcomes. ERC Commissioners, for example, indicated that the organization would be transparent through its web page, but ‘sensitive information’ would be excluded. What the parameters were for the listing or exclusion of information appeared to be at the discretion of the ERC Chairman and Commissioners. Transparency in the ERC context simple amounts to selected information being placed on its web page, with little appreciation that principles surrounding transparency might also extend to decision making processes, making transparent information sources, the analytical assumptions, tools and methods used for decision making, and disclosing the consultative processes and information inputs and representations made by industry operators and other stakeholders.<sup>21</sup>

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<sup>20</sup> It should be noted that it is not the practice in the Thai civil service for personnel to move between agencies or ministries. Thai Civil servants normally join a specific administrative arm or agency of the government and remain there for the duration of their career, gaining seniority through cumulative service (interview with Kurujit Nakornthap, Director General, Department of Mineral Fuels, Bangkok, Thailand, January 27, 2009).

<sup>21</sup> In other jurisdictions, for example, transparency standards extend to the public disclosure of all communications, meetings, phone calls and other forms of representation between regulators, industry operators and stakeholders, to reduce the possibility of nefarious activity, collusion and thus increase the impartiality and perceived legitimacy of the regulator.

These same issues emerged with the notion of accountability, with the ERC Commissioners indicating they were accountable to the Minister for Energy and the cabinet and that once a year the ERC would present its budget to the Ministry of Finance. Yet the commissioners struggled to identify the mechanisms of accountability, emphasizing that the most important compliance requirement they had was annual budget reporting and a parliamentary tabling of the ERCs annual activities – none of which had yet occurred (interview, ERC Commissioners, January 26, Bangkok, Thailand). ERC Commissioners also indicated they were accountable to their stakeholders, consumers and industry operators, but through what administrative mechanisms or engagement systems the Commissioners failed to identify.

Principles of transparency and accountability thus appear to articulate as purely perfunctory compliance obligations rather than being approached as tools that can further regulatory performance through establishing the regulator's legitimacy or increasing industry understanding of the regulators processes, decision making systems, and its aims and objectives.

Such attitudes were also evident in terms of stakeholder engagement processes, an otherwise critical tool for mediating conflicting sectional interests and legitimating the ERC and its regulatory authority. Indeed, actively involving stakeholders in the regulatory process is frequently cited as one of the most important elements for instantiating regulatory legitimacy, increasing information symmetries between regulators and regulatees, compliance outcomes, and reducing regulatory risk through mediation and long-lead time signaling of regulatory changes. Yet the ERC's approach to 'stakeholder engagement' was defined almost exclusively by its desire to defuse civil society and consumer advocacy groups opposed to tariff adjustment applications (Lavansiri, 2008; ERC 2008; interview, ERC commissioners, January 26, Bangkok, Thailand). Stakeholder engagement appeared to be confused with public relations and the management of vocal groups. More obviously, the only mechanism identified for stakeholder engagement was 'public hearings.' The sense in which stakeholder engagement might involve active participation of stakeholders in internal decision making, energy planning and the regulatory process, was alien.

These issues are not purely academic for newly emerged regulators like the ERC. The adoption of a largely UK based model and its infusion into the governance space of the energy sector in Thailand, holds potentially large risks absent a robust institutional base and strong administrative tradition on which to found it. The continuance of strong industry players like EGAT's (see figure 2), for example, and the institutionalized monopolies it continues to enjoy in the transmission sector and over price

determination for transmission rates, make for resilient practices that will be difficult to modify. Adding the ERC to this mix does not necessarily suppose the diffusion of a regulatory regime so much as the addition of another institutional player in an already highly contested and vexed governance environment.

## **Conclusion: Regulatory Diffusion and Regulatory Risk**

The history of reform efforts in the Thai energy sector betray the perils of institution building in developing country contexts. Regulatory and policy diffusion into environments where rule making and authority structures are contested makes for inherent instability in the policy environment. Thailand's experiences bear this out. The policy environment has ebbed and flowed from one set of proposals and operating policies to another (see tables 2 and 3), held hostage to the whims of changing political coalitions, the vested interests of key players like EGAT's and key personalities inside agencies like NEPO. The result has been policy contestation, with energy policy increasingly politicized if only because of the lack of formal institutional forums / mechanisms to mediate competing sectional interests. As a result, the political arena has been the obvious and most productive environment in which to prosecute interests and influence energy policy. Indeed, for political elites, such a contested policy environment has made for highly motivated constituencies able to be mobilized and used to bolster political ends.

The risks that arise from this, however, have been all too obvious: the increasing politicization of energy policy debates, the use of litigious and juridical processes to adjudicate disputes and decide policy outcomes, and attempts by coalitions to capture policy processes and disenfranchise competing interests. In such a vexed environment, the policy outcomes adopted have been viewed as illegitimate, 'imposed' and unrepresentative of broader interests, in turn fueling further policy contestation and or policy gridlock.

For investors into the Thai electricity sector, regulatory risk from policy instability and frequent policy changes has increased the risk premium, with investors demanding higher rates of return, stringent contractual indemnity and in-built guarantees before committing investment capital — all of which has contributed to a higher cost environment for investors and end users alike. At worse, policy confusion or frequent policy changes has left investors disinterested. As one executive of a large

British multinational power provider noted of Thailand, 'it's in our too hard basket until they work out what they are doing' (interview, November, 2008).<sup>22</sup>

The creation of the ERC and the instigation of a formal regulatory regime should, under normal circumstances, go a considerable way to mitigating regulatory risk. However, as the findings of this paper suggest, the ERCs ability to ensconce itself amid a highly contested environment and discharge its regulatory functions cannot be assumed. The impaired institutional base, porous administrative traditions and capacity issues it faces, may well end up not ameliorating regulatory risks but contributing to them through further institutional complexity and contested authority domains.

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<sup>22</sup> Recent studies by Udayasankar (*et al*, 2008), also finds that there is strong evidence to suggest that paucity in regulatory environments adversely impacts the corporate governance of firms, downloading costs to business as they try and navigate opaque environments with poorly regulated competition policies which impair or degrade firm governance capacities.

**Table 2: Chronology of Restructuring and Privatization Plans in the Thai Electricity Sector**

<b>Year</b>	<b>Model</b>	<b>Regulator and Oversight system</b>	<b>Status</b>	<b>Agencies</b>	<b>Characteristics</b>
1950-1992	State Owned Enterprise Monopoly Model	Accountable to Prime Minister / Cabinet / annual financial reporting to the Ministry of Finance	Implemented	EGATs, MPA, PEA; Cabinet & Prime Minister; Ministry of Finance	Public ownership, vertical integration of industry,
1992-1994	Partial Privatization: Public Private mix Private Power Producers	No independent / formal regulator / NEPC and NEPO orchestrate policy environment / cabinet level accountability / EGAT's practically self-regulating	Implemented	EGCO, Ratchaburi, EGAT's, NEPO; NEPC	Partial privatization in up-stream electricity generation sector; regulation through contract (PPAs); single purchaser (EGATs); no downstream (transmission) privatization
1994-2000	Intensified Privatization	No independent / formal regulator / NEPC and NEPO orchestrate policy environment / cabinet level accountability / EGAT's practically self-regulating	Implemented	IPPs, SPPs, EGATs,	Partial privatization in up-stream electricity generation sector; regulation through contract (PPAs); single purchaser (EGATs); no downstream (transmission) privatization
2000-2003	Power Pool Model	Creation of an independent regulatory authority (Energy Regulatory Authority) / statutory independence / oversight and enforcement powers (not created)	Proposed / not implemented	NEPO	Based on the UK Power Pool model; unbundle generation, transmission and distribution; competition to be introduced in upstream and downstream sectors; proposed equitization and sale of EGATs, PEA and MEA; proposed withdraw of Thai state from public ownership commitments in electricity generation,
2003	Enhanced Single Buyer	Creation of an independent regulatory authority (Energy Regulatory Authority) / statutory independence / oversight and enforcement powers (not created)	Default / retained	EGAT', Thai academics, Ministry of Energy, EPP0	EGAT's / or public ownership of transmission and distribution, up-stream competition via IPPs and SPP

2005-present	Single Buyer / Renewed Privatization	Creation of an independent regulatory authority (Energy Regulatory Authority) / statutory independence / oversight and enforcement powers Created in 2007 and currently being rolled out	In process	Ministry of Energy, EPPO, ERC, EGATs	Intensified generating competition, introduction of an Energy Regulatory Commission (ERC) responsible for industry oversight, tariff review, consumer protection, energy competition, market surveillance, regulation and enforcement
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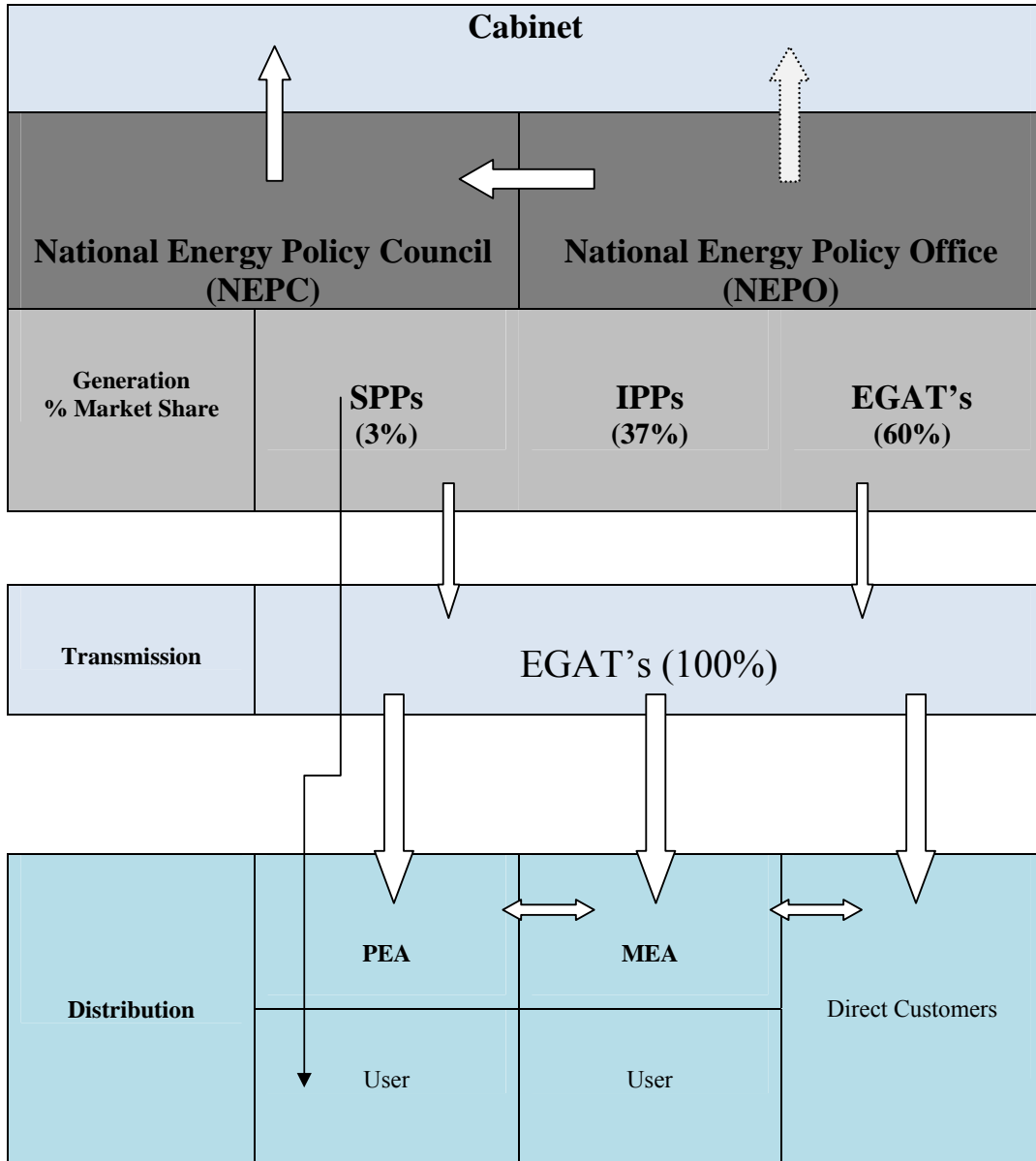
Source: Adapted from Sirasoontorn (2005); Sirasoontorn & Quiggin (2007); Electricity Governance in Thailand: Benchmarking Best Practice and Accountability in the Electricity Sector (2006).

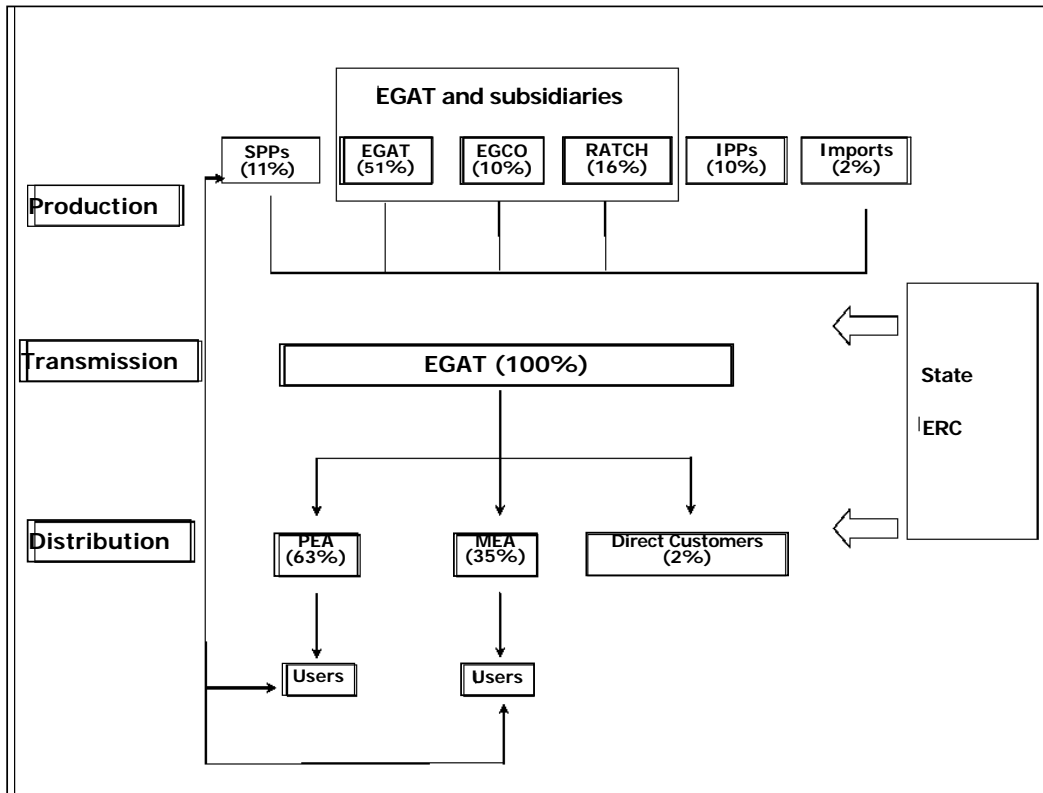
<b>Table 3: Proposed but not adopted Electricity Restructuring and Privatization Plans</b>		
Year	Electricity Supply Industry Model	Proposing / Commissioning Agency
2000	Price Based Power Pool	NEPO (conducted by Arthur Anderson, National Economics Research Associates)
2002	New Electricity Supply Arrangement	EPPO
2002	Multiple buyers / Multiple sellers: Partial Liberalization Model	EGAT
2002	Cost-based Power Pool	EGAT (conducted by Kema Consultants & Siam Commercial Bank)
2002	Transitional model to Net Pool	EGAT (conducted by Asian Institute of Technology)
2002	Electricity Relation Committee Model	EGAT (conducted by Electricity Relations Committee)
2007	Citizen Orientated Power Sector Reform	Palang Thai

Source: Sirasoontorn (2005), Palang Thai < <http://www.palangthai.org/docs/>>

Figure 1

**Institutional and Industry Structure:  
Thai Electricity Sector, 1992-2001**





**Figure 2: Institutional and Industry Structure: Thai Electricity Sector, 2009**

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