

ELECTRICITY REFORMS IN THE ASEAN: A PANORAMIC DISCOURSE

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Abstract

In the mid-to-late 1990s, several ASEAN countries initiated wide-ranging programs to reform their electricity industries. Such reform, argued its proponents, would improve the productivity of the electricity industries, and attract much needed private investment. A review of these reform experiences suggests that there is a significant disparity between the expected and actual outcomes of reform. Explanations for this disparity to be narrow, industry-centric, and ideological. This is unhelpful as it obscures the real challenges confronting the electricity industries and precludes consideration of meaningful policy prescriptions. There is a need to develop a broader perspective on electricity reform. This paper is an attempt in that direction.

INTRODUCTION

In the mid-to-late 1990s, several countries in the ASEAN region initiated wide-ranging programs to reform their electricity industries. These programs envisaged the creation, in the next five to ten years, of fully competitive electricity markets encompassing independent and competitive generation and retail, commercially-focused monopoly networks, and market-oriented governance arrangements. Further, large segments of these industries were to be privatized, with the governments assuming non-partisan roles, ensuring that the electricity business was conducted in accord with the new market rules. Such reform, argued its proponents, would attract much needed foreign capital into these industries, improve their productivities, and contribute significantly to the economic prosperity of these nations. A review of the reform experiences in these countries however suggests that there is significant, and increasing, disparity between the expected and actual outcomes of reform. Only limited aspects of the proposed reform programs have actually been implemented. Others have undergone significant change. Some have simply been abandoned. Moreover, the implementation of the reform program has been inordinately slow.

Much of the existing debate on the reasons behind such disparity, and the remedies to be applied to redress the situation, appears to be narrow, acontextual, and ideological. It is singularly unquestioning of the integrity of the underlying assumptions of reform, and largely unappreciative of the influence of institutional settings in forming expectations from reform, shaping its broad contours, and affecting actual outcomes. This is unhelpful as it obscures the understanding of the real reasons behind such disparity and precludes consideration of meaningful policy prescriptions to redress them.

There is clearly a need to develop a broader perspective on electricity reform. This paper is an attempt in that direction. It does not provide detailed narratives on individual country reform programs. Instead, it provides a panoramic discourse on the experiences of select ASEAN countries (Indonesia, Malaysia, the Philippines,

Thailand, and Vietnam) with electricity reform, and seeks explanation for the disparity between expected and actual outcomes, and guidance for the remedies, through a critical reflection on key underlying assumptions of reform. Much of the bases for such reflection are provided by the insights gained from juxtaposing the regional experiences against regional socio-political realities. This discussion is organized in terms of select stylized themes relating essentially to the 'why' and 'how' of the regional reform programs. While this paper focuses on the experiences in the ASEAN, the messages are equally relevant for other developing countries undertaking electricity reform, including India.

SOCIO-POLITICAL CONTEXT

As contextual backdrop, this section of the paper provides a brief introduction to the socio-political landscape in the ASEAN. This would enhance appreciation of the subtleties of various arguments presented in this paper.

The ASEAN countries reviewed in this paper have rich and diverse cultural heritages which have been shaped under the tutelage of some of the major religions in the world, namely, Confucianism, Hinduism, Islam, and Christianity. From a modern historic perspective, these countries share a legacy of the colonial past (except for Thailand); they gained sovereignty in the mid-twentieth century, after an intense, and largely violent, struggle; and their populations are multi-ethnic. Nationalistic fervour, general distrust of the supra-national, and intercommunal issues are therefore essential elements in the regional policy milieu.

After independence, these countries adopted democracy, in its varied manifestations, as the dominant ideology for the purposes of defining their national identities as modern, forward-looking, yet proudly traditional nations capable of, and willing to, chart their developmental paths on their own terms. These aspirations are embedded in their national constitutions, which are rather interesting amalgams of the traditional and modern Western-style governance philosophies and paradigms. Decision-making in such settings assumes a level of intricacy which only sophisticated and mature institutions are capable of dealing with. The governmental structures adopted by these countries range from Westminster-type in Malaysia, to a presidential form in the Philippines, to a single-party controlled socialist republic in Vietnam.

At the time of independence, the economies in the region were largely primary-commodity-oriented, agrarian, with the 'rural' constituting as the national economic backbones. After independence, there was a steady economic growth in the region. This growth however accelerated significantly in the late-1980s and the early-1990s. The ASEAN was indeed the most economically dynamic region in the world during these years [Balce *et al.* 2001]. This economic prosperity was however largely unbalanced, and essentially an urban, indeed supra-urban, phenomenon, with benefits overwhelmingly biased in favour of the urban political elite. The economic landscape of the region therefore became interspersed with stark economic disparity, featuring widespread poverty, and an ever widening rural-urban divide.

Approximately fifty percent of the population in the region lives in the rural areas. The rural energy-economic landscape is typified by generally low levels of access to

electricity (see Table 1), and a limited capacity of the overwhelming majority of the rural poor to pay for their electricity. These rural poor, and their urban counterparts, should clearly be major considerations in the design of regional electricity reform programs.

This economic divide is due principally to the absence of ‘distributive justice’ in the region rather than any significant lack of economic raw-materials and enterprise. Such absence, it is further argued, is due to the failure of these countries to develop independent, honest, and responsible institutions of governance. For instance, in spite of the apparent separation between the legislature, judiciary, and the executive, the polity in the region is typified by generally low levels of institutional credibility (see Table 1). This, and the rich-poor divide, engender resentment and hostility amongst the deprived and provide succor to the anti-establishment elements. The ongoing insurgencies in parts of Indonesia, the Philippines, and Thailand, and the vehement opposition by certain interest groups to reforms in most countries in the region, provide some support to these observations. This also compounds the difficulty, for the regional policy makers, of the task of designing and implementing appropriate electricity reform programs, as these reforms are likely to further deepen the divide, at least in the short-to-medium terms, as the world experience clearly demonstrates.

EVOLUTION OF THE ELECTRICITY INDUSTRIES

This section of the paper provides an overview of the historical evolution of the electricity industries in the region, emphasizing the forces that have shaped such evolution.

Origins: Electricity was introduced in the region in the late 19th century. It was largely localized, privately owned, and intended primarily to serve the commercial and geo-strategic interests of the colonial powers. The early development of the electricity industry therefore became tied to the ebbs and flows of the colonial fortunes. For example, in 1942, the retreating American forces ordered the main electricity company in Manila to disable its generating units before the Japanese occupied Manila. The Japanese, likewise, during their retreat at the end of the war, destroyed the main electricity source in Manila. This was later restored with American assistance [Sharma *et al.* 2004]. The Japanese occupation of Indonesia resulted in a replacement of all electricity personnel, and the Japanese withdrawal was followed by the take over of the Indonesian electricity by young Indonesian nationalists [PLN 2005]. In Vietnam, the French installed small generators to provide electricity to rich households; the electricity system in North Vietnam was established after the division of the country into North and South in accordance with the Geneva agreement; most of the electricity system of North Vietnam was destroyed by American bombing during the period 1965-72 and was later restored with Russian assistance [Dang 2001].

Consolidation: In the decades following the ‘independence’ of various countries in the ASEAN (~ 1950s to 1980s), there was a steady expansion of the regional electricity industries. The contours of this expansion were shaped by a mix of technological, economic, political, and geo-strategic influences. Some such

Table 1: Socio-Political Context in the ASEAN

	POLITY								DEMOGRAPHY		ECONOMY						ELECTRICITY	
	Sovereignty	Government	Institutional Credibility						Rural population (%)		GINI Coefficient		Poverty Levels (%)				Rural Electrification Levels (%)	
			Gastil Index		Opacity Factor		Corruption Rank						Urban	Rural	Urban	Rural		
			1990	2004	2001	2004	1995 ^a	2004	1990	2002	1990	2004	1998		2002		1990	2000
Indonesia	1945	Republic with bicameral parliament	5.5	3.5	75	59	41	133	69	54	0.29	0.34	15 ^c	20 ^c	14	21	22	53
Malaysia	1957	Westminster style parliamentary democracy	4.5	4	-	35	23	39	50	41	0.46	0.44	-	-	3 ^c	12 ^c	80	97
Philippines	1946	Presidential style republic	3	2.5	-	50	36	102	51	40	0.44	0.46	21 ^d	51 ^d	20 ^e	47 ^e	54	87
Thailand	1238	Constitutional monarchy, bicameral legislature	2.5	2.5	67	35	34	64	81	80	0.43	0.43	2	17	4	13	65	82
Vietnam	1945	Single party controlled socialistic republic	7	6.5	-	-	43 ^b	102	80	75	0.35	0.38	9	45	7	36	15	76

Sources: CIA 2005; ADB 2004; PWC 2001; Kurtzman 2004; Transparency International (various); Freedom House 2005; EIA 2005.

Notes: Gastil index – represents political rights and liberties enjoyed by the citizens on a 0(worst) to 10 (best) scale.

Opacity Factor - reflects the performance of the country in terms of the dimensions that affect capital markets, namely, corruption, legal system, economic policies, accounting standards and practices (including corporate governance and information release), and regulatory regime – on a 0(best) to 100(worst) scale.

^a Rank out of 41 for 1995; ^b out of 52 for 1997; and out of 145 for 2004.

^c for 1999; ^d for 1997; ^e for 2000.

influences were: rising electricity demand to support economic growth; economies-of-scale available due to technological innovations in electricity; proclivity of the newly independent nations to assert their sovereign status through expansionist infrastructure policies; broad consensus on the 'public-good' nature of electricity; continuing sway of Keynesianism, making governments the central actors in the electricity business; perceptions about the role, indeed responsibility, of the governments to provide electricity to all; and the recognition by the polity of the political appeal of electricity as an instrument for furthering socio-political agendas (e.g., employment, equity, community interest, and political power). These influences resulted in the establishment of large, vertically-integrated, centralized, government owned and controlled electricity monopolies, with the mandate to provide electricity to all in a socially-benevolent manner.

Entrenchment: Further, much of this expansion was financed by multilateral and bilateral aid agencies. This served to extend their influence in energy policy and institutional development in the region. For example, according to Rich (1994), the Electricity Generating Authority of Thailand (EGAT) 'is largely a World Bank creation ... Bank insisted that the Thai government create an autonomous, independent power agency ... as condition for future power loans ... the Bank exercised important influence in ... environmental and social matters'. According to Dubash (2002), '... World Bank's involvement in the electricity sector in Indonesia was emblematic of the Bank's special relationship with the government of Indonesia during the period'.

Such influences contributed to the emergence of powerful electricity elites - international donors, national polity, electricity bureaucracy, project developers and other beneficiaries of large-scale electricity developments - whose symbiotic relationship ensured further entrenchment of their interests and the subjugation of the electricity industry to these interests. Further, these elites generally operated outside the regular political decision-making processes, oftentimes in a contra-constitutional spirit. This severely undermined the development of effective institutions that were capable of articulating, and judiciously redressing, the wider interests of the citizenry.

The electricity landscape of the region therefore became typified by mega-electricity projects - proposed by government owned semi-autonomous monopolies; backed by international finance, with national equity funded by public debt; justified on the bases of limited analysis; and approved, ex-post, on the bases of rather questionable technocratic criteria. Uneconomic pricing, subsidies, and institutional opaqueness and unaccountability therefore became embedded in the cultures of the regional electricity industries. At the same time, the considerations of technical and cost efficiencies of electricity, its social and environmental impacts, and other local sensitivities became subsumed into the larger political and geo-strategic agendas.

PRESSURES FOR ELECTRICITY REFORM

Initial pressures: The initial impetus for electricity reform in the region was created by the power crises of the mid-to-late 1980s and early-1990s. These years witnessed the increasing inability of the regional electricity industries to meet the electricity needs of the rapidly growing economies. Electricity shortages therefore ensued and

became endemic in some countries in the region, thus threatening the prospects of sustained economic growth. For example, in the Philippines, brownouts averaging up to ten hours a day were common during the early-1990s, the system capacity was enough to meet approximately 52 percent of total demand, and it was estimated that such shortages in Manila alone reduced the GNP by nearly 1 percent in 1990 [Sharma *et al.* 2004]. ‘The crisis reached such heights that the government leased nuclear submarines and icebreakers from Russia and employed their reactors as floating generators’ [Henisz and Zelner 2002]. ‘In Thailand ... the electricity consumption grew at an annual rate of 14.1 percent during the period 1990-97, but installed capacity grew at only 7.7 percent ...; In Malaysia, annual reserve margins had fallen to 19 percent ... in 1992, 80 percent of the population on Peninsular Malaysia suffered a blackout for 33 hours ...; Indonesia’s power shortage began in 1991 ... sporadic blackouts occurred in both 1991 and 1997’ [Henisz and Zelner 2002].

The governments were unable to provide equity for financing new electricity capacity because they had, arguably, reached their debt ceilings while promoting economic growth in the 1980s [Henisz and Zelner 2002], and their heavily indebted state owned electricity enterprises were earning rather low (negative, in several cases) returns on their earlier investments. Further, the external donors – emboldened by the removal of the threat of communism and inspired by their resurging faith in neo-liberalism – had begun to make their lending conditional to the regional governments opening up their electricity markets to private ownership and competition.

These pressures resulted in the regional governments initiating a process of electricity reform. Much of the focus of this reform was to facilitate private participation in electricity generation in order to alleviate immediate electricity shortages. The legal force to these initiatives was provided by substantive amendments to the existing electricity regulation and the introduction of new regulation. These initiatives resulted in an appreciable increase in private participation in electricity generation in the region. For example, approximately 3,000MW of new capacity was added in the Philippines, by the private investors, between the years 1992 and 1998 [Sharma *et al.* 2004]. In Malaysia, the private sector added in excess of 4,000MW of capacity between 1990 and 1998 [APEREC 2000]. In Thailand, over 80 bids were received for more than 5,000MW of generating capacity in 1992. The Indonesian government signed 26 Power Purchase Agreements or Energy Sales Contracts during the period 1994-97 [Sari 2004], and committed itself to establishing 5,500MW of private capacity between 1997 and 1999 [Henisz and Zelner 2002].

Renewed pressures for reform: Notwithstanding these gains, the pressures to further reform the electricity industries continued. These pressures were created by a complex web of internal and external forces. For example, it was argued by the advocates of reform (multilateral agencies; international energy, financial and legal consulting firms; national large-industry associations; international banks and financial institutions; and the media) that the electricity industries in the region were inefficient. They are overstaffed, poorly managed, inefficiently operated, and their pricing practices were uneconomic. Such inefficiency, it was further argued, was due to fundamental flaws in the structures of the electricity industries and their governmental ownership.

The existing structural arrangements, the argument continued, did not offer consumer choice, or incentives for reducing production costs, and allowed electricity utilities to extract monopoly rents. Further, the governmental ownership politicized the industry, inhibited commercial discipline, promoted unaccountability, and created regulatory uncertainty. Hence it was inimical to promoting a sustained private interest in electricity.

There was therefore, contended these advocates, an imminent need to further reform the industry and they suggested a blueprint for such reform that conformed with the basic tenets of free markets, namely, competition, consumer choice, cost-reflective pricing, incentive-based light-handed regulation, and user-pays.

Such reform, it was argued, would attract foreign investment, improve the productivity of the electricity industries, and provide economy-wide benefits. It would also promote energy efficiency and advance environmental protection. Further, the privatization of the industry would instill financial discipline, transfer commercial risk away from the public to the private investors, promote transparency in decision-making, and ease pressures on the financially constrained governments and enable them to allocate their scarce capital for improving health, education, and other basic services. Table 2 provides a snapshot of the key regional expectations from reform.

The success stories of reforms elsewhere, and the belief in the inevitability of the replicability of such success in the countries in the region, were also cited to build further confidence in the case for reform. The specters of politically damaging and economically detrimental electricity shortages were added to sharpen the pitch for reform and to win over any remaining doubting Thomases!

A major impetus to these arguments for reform was provided by the economic crisis in East Asia in 1997, and the subsequent acceptance of, indeed acquiescence to, the conditions of the rescue package offered by the International Monetary Fund (IMF), in particular, by Indonesia, the Philippines, and Thailand. These conditions required these countries to invigorate their market-oriented reforms initiated in the earlier years, and to introduce such reform in all remaining facets of the economies (Stiglitz 2002; 2003 provide insightful analyses on this topic).

ELECTRICITY MARKET REFORMS

Against this backdrop, the countries in the region renewed their efforts to expedite the implementation of market reforms in their electricity industries. Ostensibly different from each other, the reform programs considered by various countries were essentially indistinguishable for each other. They derived their philosophical imprimatur from the neo-liberal free-market construct. The blueprint for such reform accordingly included: functional unbundling of competitive (i.e., generation and retail) and monopoly (transmission and distribution) segments of the industry; introduction of competition in the competitive segments, for example, by creating some kind of 'pool' that would facilitate mutually beneficial trade between competing producers and purchasers of electricity; reorganization of the monopoly segments as regulated commercially-oriented entities providing non-discriminatory access to their networks; and privatization. The reform programs also envisaged the development of

Table 2: Expected Outcomes of Electricity Reforms in the ASEAN

Objectives	Indonesia	Malaysia	Philippines	Thailand	Viet - nam
Improve efficiency of ESI	4	4	4	4	4
Improve economic efficiency	4	4	4	4	
Lower electricity prices	4	4	4	4	4
Enhance investor confidence	4		4		
Reduce government debt				4	
Free government scarce resources	4				4
Encourage foreign investment	4	4	4	4	4
Provide customer choice	4	4	4	4	4
Accelerate electrification			4		4
Enhance affordability	4		4		
Develop capital markets				4	
Privatization	4		4	4	
Promote demand side management				4	4
Increase competition				4	
Reduce environmental impacts			4	4	
Improve electricity supply reliability			4		4
Improve labour productivity					4
Remove pricing anomalies			4		4

market-oriented regulatory and governance arrangements for facilitating the transition of the existing electricity industries to the new structure.

While some aspects of these reform programs have been successfully implemented, others have continued to confound the architects of the reform programs by their intransigence. As a consequence, some aspects of the reform programs have been significantly redesigned in the last few years, while others have simply been

abandoned. A reconnoiter of the reform experiences in various countries in the region suggests that reforms actually undertaken by various countries are considerably different in terms of time, scale and scope from what was planned.

- In **Indonesia**, for example, prior to 1985, electricity was a totally government owned and operated activity, conducted by PLN - the main vertically-integrated, government-owned power company. In 1985, a new law – Law 15/1985 – was promulgated with a view to encourage private sector participation in electricity generation. In 1992, electricity regulation was further amended to encourage such participation in transmission and distribution. In 1994, the status of the PLN was changed from a public utility to a corporate entity, and in 1995 its Java-Bali assets (which represent the bulk of the Indonesian electricity industry) were unbundled into two portfolio generation companies (Indonesia Power and Power Java-Bali) in anticipation of their future privatization. In 1998, in the aftermath of the monetary crisis, and in accord with the conditions of the rescue package offered by the IMF, the government of Indonesia unveiled a program for the restructure of the Indonesian electricity industry. This reform program envisaged: amendment to the 1985 Law to make it consistent with the requirements of a fully competitive market, before the end of 1999; establishment of an independent regulatory body and independent transmission and regional companies in 2000; emergence of independent generation and distribution companies and part privatization of Indonesia Power and Power Java-Bali by 2001-2002; the development of a multi-seller-multi-buyer market; and complete privatization of the Java-Bali companies in 2003 [Sari 2004]. In 2002, against the backdrop of insignificant progress in the implementation of this reform program, the government of Indonesia enacted another law (Law 20/2002), according to which PLN's monopoly was to be gradually reduced; electricity supply was to be distributed into several competing businesses; private sector participation was to be allowed in generation and wholesale and retail supply to the end-users; and a fully competitive, multiple-buyer-multiple-seller model was to emerge in 2007 [Nugroho *et al.* 2005]. In December 2004, the Constitutional Court of Indonesia declared Law 20/2002 unconstitutional, in response to a legal challenge to this law mounted by some NGOs and the PLN labour union. This was on the grounds that the Indonesian Constitution (especially Chapter 33) assigns, to the government, the responsibility of meeting all basic needs of the general population, and that Law 20/2002 assigns this responsibility to the 'market mechanism'. This court ruling has thrown the reform agenda into complete disarray. The Indonesian policy makers are now contemplating further amendments to the reform program that would be consistent with the Indonesian Constitution and yet allow reform objectives to be met.
- In **Malaysia**, the main national utility National Electricity Board (NEP) was corporatized, as TNB, in 1990. TNB was privatized in 1992, with the government holding majority shares. In 1994, independent power producers were allowed in electricity generation. In 1999, TNB began to divest some of its power generation units. In the Seventh Master Plan (1996-2000), it was envisaged that, by 2000, an independent energy (regulatory) commission, and a single buyer market, with an independent market operator as the buyer, would emerge. This market would later transform itself into fully a competitive market in which electricity would be traded through a spot pool. The Electricity Commission was established in 2001. The plans for creating a fully competitive market were however abandoned by the

government in view of the Californian experience. The government instead decided to adopt the Managed Market Model (3M) which emphasized improving the existing arrangements and customizing them to suit local conditions [Jaafar *et al.* 2001]. Consequently, the 1992 policy of divestment of generation assets was halted in 2001. The TNB therefore remains a vertically integrated utility with the generation sector open to independent power producers. Under the new arrangements, TNB will retain at least 60 percent share of total generation, and independent power producers, the rest. The government is currently considering a policy that would require open bidding for new capacity, instead of the current practice of awarding projects to private companies on the basis of direct negotiations. No new capacity additions are envisaged though until 2008. According to Mahathir, the former Prime Minister of Malaysia, 'Because of the disastrous experience of California, many, including Malaysia, are more cautious in restructuring electricity industry. It is too important an industry to be left entirely to market forces ... the power pool and bidding to supply need not be the best solution to aim for in the short or medium term ... We need not follow blindly models that have been adopted in more advanced countries ... We do not want to risk entering a situation that will cost us so much more to undo when things go wrong ... we have learned enough from the experience of the Asian financial crisis of 1997, so as not to be over-dependent on market forces which economists so mistakenly believe are being 'perfect' ... Let us learn from our mistakes, and persevere to improve the level of reliability, security and quality of electricity ... priority should be placed on these criteria rather than compromising on them simply in the name of competition and liberalization ...' [Mahathir 2001].

- In the **Philippines**, the main electricity company - National Power Corporation (NPC) – was created in 1936, converted into a wholly-owned stock corporation in 1960, and was nationalized and given complete monopoly in power generation and transmission in 1972. Unable to meet the rising electricity demand, NPC's monopoly was ended in 1987 with the introduction of private participation in electricity generation. Further, NPC lost its monopsony status in the mid-1990s. In accord with the conditions of the IMF's rescue package, the government of the Philippines enacted, in June 2001, an Act ordaining the reform of its electricity industry. This reform program, much like elsewhere in the world, proposed a fully competitive electricity market. The key elements of this program would include: the establishment of a wholesale spot market (WESM), to be implemented by an autonomous market operator, by 2002; the introduction of open access and retail competition by 2004 - for customers with a load in excess of 1MW in year one, 750kW in year two, and individual households as decided by the regulator; the implementation of open access and retail competition for Electricity Cooperatives (responsible for supplying electricity throughout the nation) by 2006; the creation of an independent energy regulatory body – Energy Regulatory Commission (ERC), responsible for regulating the national transmission company (TRANSCO); the initiation of the process of privatizing TRANSCO within six months of the start of the reform program; and the privatization of at least 70 percent of NPC in the first three years of the reform program, and the rest, in the next five years. The quintessence of the governing principle, according to the Act, is – full cost recovery, achieved through cost-pass on to the consumers. This was proposed to be facilitated by the complete removal of all subsidies, and the

disaggregation of end-use electricity bills into various cost components. A non-bypassable universal charge was proposed to be imposed on all electricity end-users to cover costs arising from the removal of subsidies, payment of stranded debts and contract costs, missionary electrification, equitization of taxes and royalties applied to indigenous and renewable sources of energy vis-à-vis imported fuels, and watershed rehabilitation and management. The pain associated with the reform was proposed to be eased, for the residential customers, through a mandated rate reduction, and a socialized pricing mechanism was to be established for marginalized end-users who would also be exempted from the subsidy phase-out [Sharma *et al.* 2004]. The implementation of several key aspects of this reform has however been delayed. For example, the introduction of WESM has now been re-scheduled for 2005-06; final decision on spot pricing (nodal or zonal) has not yet been taken; the government is facing difficulty in privatizing financially unattractive assets of NPC; the privatization of TRANSCO has been inordinately delayed; retail competition guidelines are still being prepared for promulgation later this year; and there is currently a considerable rethink on several other aspects of the program.

- In **Thailand**, EGAT (Electricity Generating Authority of Thailand) was formed in 1968, as a national, state-owned power utility, by merging the existing power utilities. Private participation in electricity generation was allowed in 1992 and the government announced its plan to create a fully competitive market within the next 5 to 10 years [Ryder 2005]. In 1996, the Thai cabinet passed a resolution that would allow ‘the separation of generation, transmission, and distribution businesses. Under this resolution, EGAT’s thermal plants would be separated into business units (BUs) and then corporatized, registered and listed on the Stock Exchange of Thailand (SET)’ [NEPO 1999]. An independent regulatory body was also proposed to be created by the end of 1996. In anticipation of privatization, EGAT (Thailand’s main electricity company responsible for generation and transmission of electricity) established its own subsidiary, EGCO (Electricity Generation Company), and reserved half the expected new business in plant construction for it. Under criticism from the World Bank, EGAT barred EGCO from participating in the IPP bidding process [Ryder 2005]. In 1998, the Thai government and IMF signed an agreement which committed the government to a structural reform program that included the privatization of all state owned enterprises [Intana 2001]. As part of this agreement, the government approved the ‘Master Plan for State Enterprise Reform (the Master Plan), which was to serve as a framework in determining the scope and direction of restructuring and privatization of four main economic sectors, including the energy sector’ [NEPO 1999]. The Master Plan suggested a fully competitive electricity market with a spot power pool and an independent system operator. This, it was proposed in the Master Plan, would be achieved in three stages. In the first stage (1998-2001), EGAT would be corporatized as a whole, but would retain its pre-eminent position in bulk purchase and supply of power. One of its power stations – Ratchaburi – would be privatized. In the second stage (2001-2003), EGAT would retain its position as the central supplier of power. It would be a holding company, with a transmission operator (EGAT-T) as a subsidiary which would later be corporatized. Third party access would gradually be introduced to allow power producers to sell directly to the end-users. In the third stage (2003 onwards), a competitive wholesale power pool would be introduced. Retail contestability will

initially be limited to large consumers. It would later be extended to all consumers [NEPO 1999]. In 2000, the Thai cabinet approved the electricity restructure plan. This plan proposed a five-year road-map for electricity restructuring and privatization. Under this plan, Ratchaburi power plant was to be privatized by the end of 2000, and EGAT's thermal plants, by 2003. This plan also gave approval for the development of the Energy Industry Act which would enable the creation of an independent regulatory body, the national office of energy regulation, the power pool, market operator, and the settlement administrator. The privatization of the Ratchaburi power plant was however opposed by the EGAT labour union. This led to the reversal of the privatization program and created uncertainty in introducing competition and creating a power market [Leeprechanon and David 2005]. The current government has taken a different stance on electricity restructuring. The status of the National Energy Policy Office – the key backer of market reform – has been downgraded; and the electricity reform program has been removed from the Master Plan, including the plan for the horizontal unbundling of EGAT's generation assets [Leeprechanon and David 2005]. The idea of unbundling, and its accompaniment – the power pool, has subsequently been placed in a limbo [Greacen and Greacen 2004]!

- Until the mid-1980s, the provision of electricity was carried out, as a government activity, by the Vietnamese Ministry of Electricity and Coal (later renamed - the Ministry of Industry). The capacity of the electricity system was limited and only major cities had access to electricity. The year 1986 marks the beginning of the 'renovation program' in **Vietnam**. Electricity became a policy priority in this program [Tham 2005]. In 1991, discussion was initiated by the government to consider providing greater autonomy to the power sector. In 1994, the government announced its policy on build-operate-transfer contracts. This was aimed at allowing private sector participation in electricity generation [Dang 2001]. The reform of the electricity industry was initiated in 1995, with the establishment of Electricity of Vietnam (EVN) as a vertically-integrated state holding company, under the purview of the State Enterprise Law [World Bank 1998]. EVN was administratively under the Ministry of Industry and was given the responsibility for all power sector operations. A study by the IBRD, while noting the steady progress made by Vietnam in the earlier years, recommended a move towards competitive and privatized markets in the longer term [IBRD 1999]. In 2000, a Master Plan for Power Sector Development was issued. While the main focus of this and earlier plans was to reform electricity tariffs, this plan also envisaged a functional unbundling of EVN (2001-2005), the introduction of competition between government-owned independent-accounting power plants and the independent power producers (2006-2010), and the establishment of a power pool (after 2010). Over the last few years, the government of Vietnam, in terms of its agreement with the World Bank, has gradually increased electricity tariffs, to bring them closer to the long run marginal cost of electricity supply (approximately 7-8 c/kWh) [Energy Institute of Vietnam 2003]. In 2003, this increase was however deferred to 2005, in view of public disquiet. The most recent rise, in January 2005, was withdrawn only one month after implementation due also to mounting social discontent. Vietnam has now decided to take a cautious approach to electricity reform.

SOME REFLECTIONS

The forgoing discussion suggests that, despite some early forays in the direction of fully competitive markets, the regional electricity industries remain moored in the state that existed in the mid-1990s, namely, limited private participation in electricity generation. This has rendered irrelevant the question of the impacts of reform on the productivities of the regional electricity industries and on the regional economies. This has also served to accentuate the disparity between the expected and actual outcomes of reform. The following discussion seeks explanation for such disparity, and guidance for the remedies, through a critical reflection on the integrity of the underlying assumptions of the reform program.

The key strands of the argument for reform, as discussed earlier in this paper, were that the existing electricity industries were inefficient and that the governments were unable to finance new electricity capacity. The reform of the electricity industries, consonant with the free-market principles, would inevitably attract foreign investment, result in productivity gains and lower electricity prices, and provide significant economy-wide benefits. The other countries that have reformed their industries have indeed received significant benefits, it was emphasized. The following discussion provides a reflection on the veracity of these arguments.

- The electricity industries in the region have indeed shown poor **technical efficiencies**. These claims should however be viewed with caution as they are oftentimes based on comparisons between countries that are markedly different from each other. These differences could be in terms of their resource endowments, status of economic development, demography, extent of electrification, maturity of electricity systems, topography of the terrain for electrification, and the socio-cultural contexts. For example, in the context of the electricity distribution sector in the Philippines, the Asian Development Bank has the following to say: ‘Geography imposes constraints and costs on the networks, The nine largest islands, containing 95 percent of the population are served by 7 separate grids, most of them too small to optimize within each island, the topography and the settlement patterns make electrification expensive ... Moreover, the lack of effective coordination also resulted in technical inefficiencies in the industry’ [ADB 1994]. It would therefore be unwise to compare, for example, the ratios of consumers served by an employee in the Philippines and Thailand; the topography of Thailand, and its demography, are much more homogenous than those of the Philippines.
- In a similar vein, the arguments about the **financial precariousness** of the regional electricity industries and the inability of the governments to finance investments in new capacity require a careful consideration of the underlying contexts. For example, electricity has traditionally been viewed in the region a vehicle for social transformation. The electricity industries were therefore mandated to provide electricity to all in a manner that promoted the national social goals. The performances of these industries were, accordingly, assessed in terms of the speed and spread of electrification and the promotion of the social goals, rather than on the basis of the cost efficacy of electricity provision. Further, the increased private participation in electricity generation in the early-to-mid 1990s (as discussed earlier in this paper) was primarily a result of the governments in the

region offering extremely attractive, take-or-pay contracts, backed by sovereign guarantees, to (mainly foreign) private investors. At the same time, these governments disallowed their own electricity utilities to raise electricity tariffs, thus paralyzing their financial standings. In addition, the failure of the governments to contribute equity, as owners of the national electricity industries, extinguished any remaining hopes of the longer-term survival of these industries as independent commercial entities. Ironically, such manoeuvrings also diminished the governments' own financial standings and their capacity to protect the interests of those in whose name electricity reform was being promoted.

- One of the major arguments for reform in the ASEAN was that such reform would attract much needed **foreign investment**. For this to happen, the investors' clearly needed to have confidence in the economies of the region. Such confidence is typically shaped by the investors' assessment of the robustness of the political, legal, and regulatory institutions in a region. In the ASEAN, the constitutions, and the governance philosophies and practices are amalgams of the 'traditional' and the 'modern', as noted earlier in this paper. There is therefore a natural tension between the two, which oftentimes contributes to the slowness and the subtleness of the decision-making in the region. The political and legal institutions in the region are rather weak. Corruption is rife in the region, and decision-making generally opaque. Table 1 substantiates these observations. It shows select values for the Gastil indices, Opacity factors, and corruption rankings for various countries in the region over the period 1990-2004. These indicators represent, respectively, the political rights and civil liberties enjoyed by the citizens; the dimensions that affect capital markets, namely, corruption, legal system, economic policies, accounting standards and practices (including corporate governance and information release), regulatory regime; and the overall level of corruption. Such institutions clearly would not inspire investor confidence. One could contest this argument by drawing attention to the significant increase in private participation in electricity in the 1990s. But this would hide the facts that such participation was essentially due to the extremely generous terms offered by the governments in the region to private investors, and that it came largely at the expense of the interests of ordinary citizens. Consequently, as these citizens became informed, and as they developed their 'voices', they began to question the political wisdom of private participation without the concurrent development of mechanisms to recompense them for the pain caused by increasing electricity prices. This has engendered opposition to privatization and has contributed to the slowdown in its pace in some countries in the region.
- The argument that electricity reform would, through the workings of competitive processes, result in **improved productivities** of the electricity industries and lower electricity prices does not appear to be supportable on the basis of available evidence in the ASEAN. The following points are forwarded to substantiate this observation.
 - a) Electricity generation accounts for nearly two-thirds of the total cost of electricity supply [WEC 2001]. In situations of excess capacity, and for systems where other forms of generation efficiencies have already been realized, the creation of a competitive pool has the potential to exert a downward pressure on costs and hence prices. But it is unclear how the

proposed power pool would lead to a reduction in such costs in the capacity-constrained systems in the ASEAN. Quite the contrary, the fragmentation of the industry, and the impending pressures to internalize the costs arising from the environmental externalities of electricity generation, are likely to exert upward pressures on costs and prices.

- b) At the distribution end, any savings in the cost of electricity supply require appreciable improvements in technical and administrative management of utility operations as they are the main sources of 'technical' inefficiencies. These, in turn, are due to a variety of reasons including the use of inefficient technologies, unmetered connections, electricity theft, and poor management practices. Some of these inefficiencies in the region also arise from the disconnected nature of transmission and distribution grids, and the inhospitable geography and topography. How will the fragmentation of the electricity industry contribute to lowering the costs arising from these factors remains unclear.
 - c) The argument that the provision of consumer choice would promote lower prices also raises similar questions. For example, for this argument to hold true, the consumers must also have the capacity to exercise such choice. The socio-economic landscape in the ASEAN is typified by high unemployment, inequity, and high incidence of poverty (see Table 1). It is estimated that on average the highest 20 percent income earners in the region consume more than 50 percent of the regional income. Further, a vast majority of the poor live in rural settings, where it is uneconomic to extend electricity supply. These people clearly do not have the capacity to pay for their electricity. The question of 'choice' therefore for these people becomes rather moot.
 - d) It is widely known that electricity in the region is sold at subsidized rates. For example, in Indonesia, the electricity subsidy is estimated to be approximately 5 c/kWh [WEC 2001]. In Vietnam, electricity is currently charged about 5.5 c/kWh, whereas the average cost of electricity supply is estimated to be 7 c/kWh [ASEAN 2001]. Subsidies are also common in Malaysia, the Philippines, and Thailand. It is also common knowledge that these countries have been under sustained pressure from the multilateral aid agencies to increase electricity prices to better reflect their marginal costs of electricity supply. Clearly any removal of subsidies, and/or pricing of electricity in terms of its marginal cost, cannot lower electricity prices.
 - e) Further, the question of subsidies needs to be viewed in a larger socio-political context. While it is true that political considerations have contributed to an appreciable misuse of subsidies, it is also true that such subsidies have provided considerable benefits to the economically disadvantaged segments of society. The withdrawal of these subsidies may therefore be neither socially desirable, nor politically feasible [Fathollahzadeh and Sharma 2002].
- Equally questionable are the claims that the **privatization** of the electricity industries would improve their productivities, and provide significant economic benefits.

- a) The privatization-improved electricity-productivity link is based on the grounds that privatization would lower market risk, and provide superior incentives to the industry managers to seek risk- and cost-minimizing strategies. It is however unclear why market risk would be lower, and their management more effective, in a privatized electricity industry comprising profit maximizing independent generating units, operating in a quasi-oligopolistic market, facing short- and long-term uncertainty in the magnitude and timing of electricity demand and the regulatory environment, expecting to sell electricity in a politically sensitive end-use market large segments of which simply do not have the capacity to pay, and trading in a commodity whose atypical characteristics make it the antithesis of a true market commodity. Further, the privatization-superior incentives argument draws much of its intellectual imprimatur from the Principle-Agent, Public-Choice, and Property-Rights frameworks. These frameworks are however based on rather restrictive assumptions about human nature, and generally pay limited attention to the influences of history, culture, institutions, and polity on human action and behaviour. How relevant are these frameworks for the ASEAN nations with their rather complex socio-cultural dispositions?
- b) The often-cited economic and social benefits of privatization include reduced budget deficits and public debt, transfer of risk from the tax-payer to the private investor, and enhanced transparency in decision-making. The faith in the benign nature of the link between privatization and budget deficits/public debt is ostensibly founded on several interrelated premises, for example, budget deficits and public debt are inherently malevolent, their existing sizes are insufferable, and that privatization would indubitably exterminate such deficits/debts. But budgets deficits and public debt are highly nuanced constructs, dependent upon the choice of methods (for example, accounting methods) used to create them. This latitude in their construction suggests that there is nothing inherently malevolent about them, nor are they true indicators of the financial performance of a country and hence matter of any serious concern. By that token, the privatization-reduced budget deficit argument appears rather amorphous, indeed impertinent. Equally shapeless therefore is the related claim that reduced deficits/debt would spontaneously translate into economy-wide gains. Much of the post-war prosperity of the developed world was funded by budget deficits after all! Further, the notion of private investors as the bearers of market risk, especially in market regimes motivated by the principles of cost-reflective pricing and user-pays, appears completely puzzling. In such regimes, it is the tax-payer who ultimately bears the market risk. The recent melt-downs of major telecommunication, insurance, banking, energy, and water entities around the world should lend some support to this argument. Similarly, the claim that privatization would promote transparency and public trust appears unintelligible [Sharma 2005].
- The other often-cited benefits of reform, namely, improved security and reliability of supply, better environmental outcomes, enhanced uptake of energy efficiency, do not appear to have any reference point for comparison and/or compelling logic.
 - The belief of the regional policy makers in the success of electricity reforms elsewhere (mainly in developed countries) and the replicability of such success in

the region appears to be baseless. The cultural, political, economic, and institutional settings; resource endowments; and the drivers for reform in these exemplars are vastly different from those in the region. Further, even in these countries, a great deal of retrospection is currently underway as evidence from several years of reform mounts. And the jury is still out, ruminating on the question of 'real' gains from such reform.

EPILOGUE

The preceding discussion suggests that much of the underlying arguments for reform in the region are untenable. The planners in the ASEAN expected to achieve a rather diverse and sweeping range of objectives from reform - attracting foreign investment, providing mass electrification, improving affordability, developing capital markets, and ensuring economic prosperity. There does not appear to be any compelling logic behind these expectations. For example, how does one restructure the existing (below marginal cost) tariffs and achieve price reductions? There also appears to be a general lack of understanding about the differences between the means and ends of reform. The privatization of the industry and the introduction of full competition appear to have emerged as the ends in themselves rather than the means to achieve technical and economic efficiencies. Further, the technical characteristics (for example, capacity constraints, fragmented systems, technological backwardness) and, more importantly, the socio-political contexts (for example, rural settings, institutional weakness) in the region do not appear to be positively disposed to the creation and sustenance of fully competitive and privatized electricity markets. These reforms therefore are unlikely to yield desirable outcomes. The remedy, this author argues, resides in acknowledging the importance of the regional socio-cultural context; discarding the existing puritanical approach to reform that sees the world in 'black' and 'white' only and does not recognize the 'grey' where the multitude of humanity lives and strives, on a day-to-day basis, to carve out a dignified existence; and developing institutions and policy prescriptions that accommodate the interest of the wider citizenry in a culturally sensitive, yet responsible, manner.

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References

- ADB (1994): *Philippines Power Sector Study*, Manila: Asian Development Bank.
- ADB (2004): *Key Indicators of Developing Asian and Pacific Countries 2004*, Manila: Asian Development Bank, available online at <http://www.adb.org/>, last accessed on 20 May 2005.
- APERC (2000): *Electricity Sector Deregulation in the APEC Region*, Tokyo: Asia Pacific Energy Research Centre.
- ASEAN (2001): *Vietnam Country Profile*, Association of Southeast Asian Nations, available online at <http://www.aseanenergy.org/pressea/vietnam/countryprofile/energy-fundamentals.htm/>, last accessed on 25 May 2005.
- Balce, Gulliermo R, Deepak Sharma and Shankar Karki (2001): 'Energy Policy Issues in the ASEAN', paper presented at the International Conference on Asian Energy in the New Century: Issues and Policies, Hog Kong Baptist University, 16-17 August.
- CIA (2005): *The World Factbook*, available online at <http://www.odci.gov/cia/publications/factbook/>, last accessed on 10 May 2005.
- Dang, T (2001): *Electricity Industry Reform in Vietnam*, Energy Planning and Policy Program, Faculty of Engineering, University of Technology, Sydney (Graduate Project: unpublished).
- Dubash, Navroz K (2002): *Power Politics: Equity and Environment in Electricity Reform*, Washington DC: World Resource Institute.
- EIA (2005): *International Energy Outlook 2005*, Energy Information Administration, available online at www.eia.doe.gov/oiaf/ieo/index.html, last accessed on 6 July 2005.
- Energy Institute of Vietnam (2003): *The Study on Strategy Development for Power Sector in the Socialist Republic of Vietnam*, Hanoi: Energy Institute of Vietnam.
- Fathollahzadeh, Reza and Deepak Sharma (2002): 'Rationale behind Electricity Industry Reform in the ASEAN', Paper presented at the 25th International Conference of the IAEE, Aberdeen, 26-29 June.
- Freedom House (2005): *Freedom in the world 2005*, available online at <http://www.freedomhouse.org>, last accessed on 15 July 2005.
- Greacen, Chuenchom Sangarasri and Chris Greacen (2004): 'Thailand's Electricity Reforms: Privatization of Benefits and Socialization of Costs and Risks', *Pacific Affairs*, Volume 77, No. 3, Fall 2004.

- Henisz, Witold J and Bennet A Zelner (2002): 'The Political Economy of Private Electricity Provision in Southeast Asia', A Working Paper of the Reginald H. Jones Center (WP 2001-02), The Wharton School, University of Pennsylvania.
- IBRD (1999): *Private Solutions for Infrastructure: Opportunities for Vietnam*, Washington DC: International Bank for Reconstruction and Development.
- Intana, Arisara (2001): *Electricity Industry Reform in Thailand*, Energy Planning and Policy Program, Faculty of Engineering, University of Technology, Sydney (Graduate Project: unpublished).
- Jaffar, Mohd. Zamzam, Norhayati Kamaruddin and Wong Hwee Kheng (2001): 'Greener Energy Solutions for a Sustainable future: Issues and Challenges for Malaysia', Paper presented at the International Conference on Asian Energy in the New Century: Issues and Policies, Hog Kong Baptist University, 16-17 August.
- Kurtzman, J (2004): 'The Opacity Index 2004: The Global Cost of Opacity, Measuring Business and Investment Risk Worldwide', *MIT Sloan Management Review*, MIT: The Kurtzman Group.
- Leeprechanon, N and A K David (2005): 'Transition to an Electricity Market: A Case for Developing Countries', *International Energy Journal*, Vol. 6, No. 1, Part 4, pp 183-206.
- Mahathir, M (2001): *The Changing Structure of the Electric Power Industry: An Update*, Kuala Lumpur: The Government of Malaysia.
- NEPO (1999): *Privatization and Liberalization of the Energy Sector in Thailand*, Bangkok: National Energy Policy Office.
- Nugroho, Hanan, Syamsidar Thamarin and Gumilang Hardjakoesoema (2005): 'Electricity Industry in Indonesia after the Implementation of Electricity Law Number 20/2002: Proposed Agendas to Support Implementation of the Law', Paper presented at the 28th International Conference of the IAEE, Taipei, 3-6 June.
- PLN (2005): *Company Profile*, PT PLN, available online at <http://www.pln.co.id>, last accessed on 12 June 2005.
- PWC (2001): 'The Opacity Index: Launching a New Measure of the Effects of Opacity on the Cost and Availability of Capital in Countries World-wide', available online at http://www.pwc.com/fr/pwc_pdf/pwc_100068_opacity_index.pdf, last accessed on 25 June 2005.
- Rich, Bruce (1994): *Mortgaging the Earth: The World Bank, Environmental Impoverishment, and the Crisis of Development*, Boston: Beacon Press.
- Ryder, G (2005): 'The Rise and Fall of EGAT: From Monopoly to Marketplace', available online at www.probeinternational.org/probeint/mekong/reports/EGAT.htm, last accessed on 15 May 2005.

- Sari, A P (2004): 'Power Sector Restructuring and Public Benefits', A background working paper for the World Resource Institute, available online at www.pdf.wri.org, last accessed on 20 July 2005.
- Sharma, D., S. Madamba and L. Chan (2004): 'Electricity Industry Reforms in the Philippines', *Energy Policy*, Vol. 32, pp 1487-1497.
- Sharma, Deepak (2005): 'Australian Electricity Reform: The Ownership Debate', *International Energy Journal*, Vol. 6, No. 1, Part 4, pp 131-150.
- Stiglitz, Joseph (2002): *Globalization and Its Discontents*, London: Allen Lane.
- Stiglitz, Joseph (2003): *The Roaring Nineties: Seeds of Destruction*, London: Allen Lane.
- Tham, P (2005): 'Electricity Reform in Vietnam', Energy Planning and Policy Program, Faculty of Engineering, University of Technology, Sydney (A Working Paper: in preparation).
- Transparency International (various): Transparency International corruption perceptions Index, available online at <http://www.transparency.org>, last accessed in June 2005.
- World Bank (1998): *Fueling Vietnam's Development – New Challenges for the Energy Sector*, Washington DC: The World Bank.
- WEC (2001): *Electricity Market Design and Creation in Asia Pacific*, London: World Energy Council.

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