

Electricity privatisation and restructuring in Asia-Pacific

by

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1. Introduction and executive summary

This paper reviews the state of electricity privatization and restructuring in four sections: a review of the activities of multinational companies from OECD companies; a review of the emergence of international activity by Asian-based companies; a country review of policies and experience; and a review of development bank policies.

OECD multinationals have withdrawn in recent years. At least 10 multinational companies have withdrawn altogether from activity in this sector in Asia-Pacific, and three of those remaining (Enron, Intergen, Mirant) are seeking to sell their operations. Multinationals which remain in the region include four European companies – EdF, Tractebel-Suez, International Power, and CDC (two of which are nationally-owned: EdF and CDC) – one USA companies (AES) - and one Canadian (Transalta).

Asian-based companies have started operating internationally, including two Hong Kong based groups (Cheung Kong and China Light), Singapore Power and the Malaysian YTL, all of which have bought operations in Australia. Other expanding companies include the Japanese company, J-Power, and the South Korean (nationally-owned) company KEPCO, and Meiya power, now owned by financial investors.

Countries' experiences are summarised, including experiences with withdrawal of multinationals after initial investments, problems with the affordability of power purchase agreements linked to IPPs, and political opposition to privatisation and liberalisation. The policies of the development banks – World Bank and ADB – have driven a common set of restructuring proposals in the 1990s, and remain broadly unchanged despite a lack of success in achieving objectives other than privatisation itself.

Three main issues are identified and discussed in the final section: the reconsideration by countries of the suitability of restructuring by liberalisation and privatisation; the withdrawal of multinational capital form investments in Asian power sector; and the continuing impact of PPAs on the costs and structure of electricity supply systems.

2. Multinationals from OECD countries

Table 1. OECD Multinational electricity companies active in Asia-Pacific

Company	Activity	Assets	Countries Active
AES	Generation	1666MW	China, India, Pakistan, Sri Lanka
EDF	Generation	1684MW	China, Laos, Vietnam
Tractebel	Generation & supply	848MW	China, Thailand, Laos
Enron	Generation	204MW	Philippines, Guam
Intergen	Generation	1830MW	China, Philippines, Singapore, Australia
Mirant	Generation	2261MW	Philippines
Transalta	Generation	280MW	Australia
IP	Generation	3817MW	Australia, Pakistan, Thailand, Malaysia
CDC	Generation	810MW	Bangladesh

2.1. AES

AES (<http://www.aes.com/aes/index?page=home>) was one of the first multinational electricity companies, founded in 1981 and making its first non-US investments in the late 1980s and peaking in 2000. It then had revenues of US\$6.7bn, operated in 36 countries, owned 64,000MW of generation and supplied 18 million customers. However, in the past four years it has scaled back its foreign activities to 27 countries. It categorises its business into four: contract generation (power plants contracted long-term); large utilities (integrated electric utilities); competitive supply (power plants selling into competitive wholesale markets); and growth distribution (electricity distribution in developing countries).

For Asia (apart from the Middle East and the former Soviet Union), it is active only in contract generation and only 18% of its contract generation is in this region. In January and February 2003, it sold its two Australian businesses, power plants with capacity 1248MW to Australian interests. In November 2003, it sold its Bangladeshi businesses, two power plants with total capacity 810MW, to a British group, CDC Globaleq, a UK government owned company that owns and operates power plants in developing countries.

Table 2. AES Contract Generation in Asia

	Plant	% interest	MW Output (AES share)	Fuel
China			2839 (907)	
	Aixi	71	50 (35)	Coal
	Chengdu	35	48 (17)	Gas
	Cili	51	26 (13)	Hydro
	Hefei	70	115 (80)	Oil
	Jiaozuo	70	250 (175)	Coal
	Wuhu	25	250 (62)	Coal
	Yangcheng	25	2100 (525)	Coal
Sri Lanka			168 (151)	
	Kelanitissa	90	168 (151)	Diesel
Pakistan			730 (402)	
	Lal Pir	55	365 (201)	Oil
	Pak Gen	55	365 (201)	Oil
India			420 (206)	
	OPGC	49	420 (206)	Coal
Total			4157 (1666)	

2.2. EDF

EDF (http://www.edf.com/index.php4?coe_i_id=33048) is the nationally-owned electric utility for France with over 100GW of operating power plant worldwide, but little of this is in Asia. In China, it owns the 720MW Laibin B plant through its FIGLEC subsidiary and has a 19.6% stake in the Shandong Zhonghua company that owns three power plants with total capacity 2400MW. In Vietnam, it is a member of a consortium (including Tokyo Electric and Sumitomo) with 56.2% that built a combined cycle plant (Phu My 2 715MW) completed in 2004. In Laos, it is the leading member (35%) of a consortium (with the Lao government, the Electricity Generating Authority of Thailand - EGAT and an Italian Thai joint venture) building a 1070MW hydroelectric plant, Nam Theun 2, expected to be completed in 2008.

Table 3. EDF Generation in Asia

	Plant	% interest	MW Output (EDF share)	Fuel
China			2839 (907)	
	Laibin	100	720 (720)	Coal
	Shandong	19.6	2400 (470)	

	Zhonghua			
Vietnam			715 (402)	
	Phu My 2	56.2	715 (402)	Gas
Laos			1070 (375)	
	Nam Theun 2	35	1070 (375)	Hydro
Total			4624 (1684)	

2.3. Tractebel

Tractebel (<http://www.tractebel.be/index-en.htm>) is the international electricity and gas division of Suez, the group which also includes globally dominant water and waste management companies (see also water paper). In Asia, its main interests in electricity are in Thailand, with smaller businesses in China and Laos. Through its subsidiary, Glow (99%), Tractebel generates and supplies electricity, steam and treated water to about 30 large-scale industrial clients in the Map Ta Phut petrochemical complex in Thailand's Rayong region, using cogeneration and combined cycle technologies. This includes the Glow (formerly Bowin) 740MW natural gas fired power plant. In Laos, In Laos, Tractebel has a controlling stake in the Houay Ho Power Co, which runs the 153 MW Houay Ho dam-reservoir hydroelectric plant. In China, Tractebel holds a 27.4% share in the 28 MW Zhenjiang Power Station.

Table 4. Tractebel Generation in Asia

	Plant	% interest	MW Output (Tractebel share)	Fuel
China	Zhenjiang	27.4	28 (8)	Coal
Thailand	Glow/Bowin	99	740 (733)	Gas
Laos	Houay Ho	70	153 (107)	Hydro
Total			921 (848)	

2.4. Enron

While the Enron group (<http://www.enron.com/corp/>) collapsed in 2001, some of its assets are still in the hands of the company awaiting disposal. The foreign assets have been bundled into a new company, Prisma. The main assets in Asia are:

- Guam. Northern Marianas Power Project - Under an Energy Conversion Agreement with the Guam Power Authority, Enron constructed an 88MW diesel plant in Piti, Guam.
- Philippines. Subic Bay Power project, an oil-fired plant with a capacity of 116MW on the island of Luzon.

Table 5. Enron Generation in Asia

	Plant	% interest	MW Output (Enron share)	Fuel
Guam	Marianas	50	88 (44)	Coal
Philippines	Subic Bay	100	116 (116)	Oil
Total			204 (160)	

2.5. Intergen

Intergen (<http://www.intergen.com/>) is a joint Shell (68%)/Bechtel (32%) company operating or building a total of 18 power stations representing nearly 16,000 megawatts (MW). In November 2004, Shell and Bechtel confirmed their decision to sell the company.

In Asia, it has assets in the Philippines, China and Australia. In China, it operates the 724MW coal fired plant Meizhou Wan with a 45% interest (El Paso is the other foreign investor; in Philippines it owns the Quezon coal-fired plant, (460MW). In Australia, it has a 50% stake in Ozgen (Huaneng Power International of China owns the other 50%), which operates the 920MW Callide C brown coal plant (50%) and the 880MW Millmerran brown coal plant (54%) both in Queensland. It is planning to build a 715MW gas-fired plant (Island) in Singapore.

Table 6. Intergen Generation in Asia

	Plant	% interest	MW Output (Intergen share)	Fuel
China	Meizhou Wan	45	724 (326)	Coal
Philippines	Quezon	46	460 (212)	Coal
Australia			1800 (935)	
	Callide C	50	920 (460)	Coal
	Millmerran	54	880 (475)	Coal
Singapore	Island Power	50	715 (357)	Gas
Total			3699 (1830)	

2.6. Mirant

Mirant (<http://www.mirant.com/>) was spun off as an international power business from the US utility, Southern Company, in April 2001. In Asia, it operates only in the Philippines, where it owns 20% (2200MW) of the generating capacity. Its main assets are the 1218MW Sual coal-fired plant (92%), the 735MW Pagbilao coal-fired plant (95%) and the 1251MW Iljan/Batangas gas-fired plant (20%).

Mirant is the Philippines' largest IPP and is one of the top-earning companies in the country. Mirant Philippines raked in a P12-billion profit in 2002; US Mirant has not included its Philippine subsidiary in its bankruptcy filing. In February 2002, President Arroyo appointed Mirant CEO Marce Fuller as a member of her International Board of Advisers.¹

In May 2003, Mirant Philippines committed to build a PhP1-billion 40-mw plant in Panay island, with the conclusion of a 20-year BOO energy supply contract with the Iloilo-I Electric Cooperative, Inc. (Ileco-I). Mirant partnered with Metropolitan Bank and Trust Co. (Metrobank), the country's biggest financial institution, in the Panay project, in plans to acquire several power generation companies nationwide.² Mirant is also investing 600 million pesos in two diesel-fired plants in Aklan province (also in Panay) with a combined capacity of 12.5 megawatts, under 20-year, BOO agreements with the Aklan Electric Cooperative.³ In October 2003, Mirant reported completion of a PhP1-billion rural electrification program under the government's Project Beacon; it also announced its intent to invest an additional PhP500 million to the program.⁴

In November 2003, Mirant obtained a 20-percent interest in Subic EnerZone Corp. (SEZC), a joint venture tie-up between the Subic Bay Metropolitan Authority (SBMA) and Aboitiz Equity Ventures Inc. (AEV) has been awarded the right to distribute electricity in the area by the SBMA under a rehabilitate-operate-transfer (ROT) scheme.⁵ In December 2003, Mirant planned to invest PhP235 million for the upgrade of transmission facilities at the Baguio City Economic Zone; Mirant and Napocor jointly supply electricity to the ecozone under a joint marketing agreement.⁶ In January 2004, Mirant Toledo announced plans to expand operations in Cebu and put up a 100-megawatt coal-fired plant.⁷

Mirant filed for bankruptcy protection under Chapter 11 on July 14, 2003. Mirant expects to exit Chapter 11 protection in 2005.

Table 7. Mirant Generation in Asia

	Plant	% interest	MW Output (Mirant share)	Fuel
Philippines			3491 (2261)	
	Sual	92	1218 (1121)	Coal
	Ilian	20	1251 (250)	Gas
	Pagbilao	95	735 (698)	Coal
	Others		287 (192)	

2.7. Transalta

Transalta (<http://www.transalta.com/>) is a privately-owned Canadian electric utility based in Alberta. It owns a total of about 10,000MW of power plants, mostly in Alberta. In the Asia-Pacific region, its only assets are in Australia where it owns the 50% of the 110MW gas/diesel-fired Parkeston unit and 100% of the 225MW Southern Cross gas/diesel-fired plant. Both are open cycle gas turbines.

Table 8. Transalta Generation in Asia

	Plant	% interest	MW Output (Transalta share)	Fuel
Australia			335 (280)	
	Parkeston	50	110 (55)	Gas
	Southern Cross	100	225 (225)	Gas

2.8. International Power

International Power, IP, (<http://www.anpower.com/>) was spun off as an independent IPP company from the UK company, National Power in 2000. In the Asia Pacific region it owns plants in Australia, Malaysia, Pakistan and Thailand.

In Australia, it owns: 91% of the 1635MW Hazelwood coal-fired plant in Victoria; the Synergen company, which has four power plants in South Australia with a total capacity of 360MW (all open cycle gas turbines); the Pelican Point gas-fired power plant (485MW) in South Australia; and it is constructing the Canunda wind farm (46MW), also in South Australia.

In Pakistan, it owns 16.6% of the HUBCO plant (1290MW, oil-fired) and 36% of the Kot Addu plant (1600MW, gas/oil CCGT). In Malaysia, it owns 18.75% of the 2863MW Malakoff CCGT and in Thailand it owns the 110MW Pluak Daeng CCGT plant.

Table 9. International Power Generation in Asia

	Plant	% interest	MW Output (IP share)	Fuel
Australia			2526 (2379)	
	Hazelwood	91	1635 (1488)	Coal
	Synergen	100	360 (360)	Gas
	Pelican Point	100	485 (485)	Gas
	Canunda	100	46 (46)	Wind
Pakistan			2890 (791)	
	Kot Addu	36	1600 (576)	Gas
	HUBCO	16.6	1290 (215)	Gas
Malaysia	Malakoff	18.75	2863 (537)	Gas
Thailand	Pluak Daeng	100	110 (110)	Gas
Total			8389 (3817)	

In July 2004, International Power (70%) in consortium with Mitsui (30%) agreed a takeover of Edison International. If this is completed, as expected, in December 2004, this will give International Power a further 5381MW of generating capacity, including 2324MW in the Asia Pacific region.

Table 10. Edison International assets in Asia

	Plant	% interest	MW Output (Edison share)	Fuel
Australia				
	Loy Yang B	100	940 (940)	Coal
	Valley	60	300 (180)	Gas
	Kwinana	70	119 (83)	Gas
Indonesia	Paiton	45	1220 (550)	Coal
Thailand	Tri Energy	25	700 (175)	Gas
Philippines	CBK	50	792 (396)	Hydro-electric

2.9. CDC Globeleq

CDC Globeleq (<http://www.cdcglobeleq.com/fw/main/Overview-1504.html>) is 100% owned by CDC Group, which is owned by the UK government. CDC Group describes itself as 'the UK government's instrument for investing in the private sector in developing economies.'

Worldwide it owns 2400MW of power plants and in Asia-Pacific, it owns two combined cycle plants in Bangladesh, Haripur (360MW) and Meghnaghat (450MW) with a total capacity of 810MW, accounting for about a quarter of Bangladesh's generating capacity. It bought the plants from AES in November 2003.

Table 11. CDC Globeleq Generation in Asia

	Plant	% interest	MW Output (CDC share)	Fuel
Bangladesh			810 (810)	
	Haripur	100	360	Gas
	Meghnaghat	100	450	Gas

2.10. Exits

2.10.1. PSEG

Public Service Enterprise Group (<http://www.pseg.com/>) is a US utility based in New Jersey. In India, it owns a 20% stake (with Reddy, El Paso and Marubeni) in the 330MW PPN plant in Tamil Nadu. Its other interest in Asia was held through its 50% stake in Meiya Power, but this stake was sold in October 2004 to BTU Group, owned by Middle East investors. The reason stated was to reduce group debt

2.10.2. TXU

The Texas-based utility, TXU, (<http://www.txu.com/Cultures/en-US/default.htm>) built an electricity and gas business in Australia including 1280MW of generating capacity and one million electricity or gas consumers. This was sold to Singapore Power in July 2004 for US\$3.6bn. The justification was to reduce debt.

2.10.3. Hydro Québec International

Hydro Québec (<http://www.hydroquebec.com/en/index.html>) is a provincially owned electric utility with nearly 38GW of plant in North America. Its investments in Asia were largely through Meiya Power, but it sold its 20% stake to Darby International in July 2004. In Australia, it has built two transmission links, Directlink joining New South Wales and Queensland and Murraylink, joining New South Wales and Australia.

2.10.4. Edison International

Edison International (<http://www.edisonx.com/>) was drawn from Southern California Edison and built up a large portfolio of international assets. In the Philippines it owned a 50% stake (the rest held by Philippine interests) in the 728MW Caliraya-Botocan-Kalayaan (CBK) hydro-electric plant. In Australia, it owned 70% of the 116MW gas-fired Kwinana plant in Perth; the 1000MW Loy Yang B coal-fired plant in Victoria; and 60% of the 300MW Valley Power Peaking Unit in Victoria. In Indonesia, it owned 40% of the 1230MW Paiton coal-fired unit and in Thailand it owned 25% of the 700MW Tri Energy gas-fired plant.

Edison International agreed to sell its portfolio of plants to a consortium of International Power UK (70%) and Mitsui (30%) in July 2004. The take-over is expected to be completed in December 2004.

2.10.5. NRG

NRG, based in Minneapolis (<http://www.nrgenergy.com/>) was founded in 1989 and was formed from the merger of a number of traditional utilities. It is a wholly owned subsidiary of Xcel Energy. In April 2002, NRG decided to sell its international assets and these were marketed in four bundles including in the Asia Pacific. In November 2002, Xcel wrote off its investment in NRG and NRG filed for Chapter 11 bankruptcy protection on May 14, 2003, emerging on December 5, 2003. It now owns 16,800MW of plant mostly in the USA.

Of its international investments (2200MW), about 1390MW are in Asia Pacific region, all in Australia. It owns 37.5% of the 630MW Gladstone coal-fired plant in Queensland, 100% of the Flinders coal-fired plant in South Australia and 100% of the 240MW Playford coal-fired plant in South Australia.

In November 2002, it wrote off its investment in the 170MW gas-fired Hsin Yu plant in Taiwan and discontinued funding. It sold a 30% stake in the Lanco Kondapalli power plant (368MW) in Hyderabad India to a Malaysian group, Genting in July 2003. In April 2004, it sold its 25% stake in the 2000MW Loy Yang A coal-fired plant in Victoria, Australia to Australian interests.

2.10.6. AEP

American Electric Power, AEP (<http://www.aep.com/>) is a holding company based on electric utilities active in 11 US states. It invested outside the USA, mostly in the UK around 2000, but in January 2003, it decided to dispose of all its non-US businesses.

It sold Citipower, an Australian (Melbourne) electricity distribution company (bought from Entergy in 1998) to Cheung Kong International in August 2002. In March 2004, it sold its 70% interest in the 250MW Pushan coal-fired plant in China to local interests.

2.10.7. Aquila

Aquila, previously UtiliCorp United (<http://www.aquila.com/>) is a US utility based in Kansas and operating mainly in seven US states. UtiliCorp began to expand outside the US in 1993. In 1995, it bought a 49% stake in United Energy Melbourne and subsequently bought further assets in Australia and New Zealand. In November 2002, it suspended dividends and announced it would sell all its non-US assets.

In October 2002, it sold its 70% stake in New Zealand UnitedNetworks, primarily an electricity distribution company distributing to about 30% of New Zealand consumers. In April 2003, it announced the sale of all of its Australian assets, including its shares in Multinet Gas (25.5%), a Victoria gas distribution business, United Energy (34.5%), a Victoria electricity distribution business and AlintaGas (30%), a gas distribution business in Western Australia.

2.10.8. CMS Energy

CMS Energy is a US electric utility based in Michigan. It had a range of assets outside the USA, but in July 2004, it completed its sale of assets.

In Australia, in April 2004, it sold its 49.6% share in the 2000MW Loy Yang A coal-fired power station, and later in the year, the rest of its Australian gas assets. Its shares in two power plants in India, a 50% stake in a 250-MW coal plant, and 33.2% of a 235-MW gas-fired plant were still for sale in November 2004.

2.10.9. Duke Energy

Duke Energy (<http://www.duke-energy.com/>) is based on the Duke Power company, an electric utility supplying North Carolina. It completed the sale of its Asia Pacific assets, in New Zealand and Australia, in April 2004 to an Australian company, Alinta Energy. The assets included three gas-fired power plants in Australia (Port Hedland and Newman in Western Australia, and Bairnsdale in Victoria), one in New Zealand (Glenbrook) and 1300 miles of undersea gas pipelines. The total capacity of the power plants was 450MW.

2.10.10. Powergen

Powergen was one of the two large privatised generation companies in the UK. It was taken over by the German company E.ON in 2001. It sold most of its foreign investments in Asia Pacific in December 2000 to China Light and Power. Assets sold included: its 88% stake in the 655MW Paguthan CCGT plant in Gujarat, India; its 49.95% stake in the 1450MW coal-fired Yallourn plant in Victoria, Australia; and in Thailand, its 50% interest in BLCP (the company developing a coal-fired power station at Map Ta Phut).

Its 35% stake in Jawa Power, which operates the 1220MW CCGT Paiton plant in Indonesia, had an option to be sold within five years to China Light and Power, but this Had not been taken up by November 2004 and it is unclear who will buy this stake. J-Power and Keppel Corp (Singapore) had provisionally agreed to buy it in January 2004, but the deal fell through and YTL (Malaysia) may now buy the stake.

3. Asian Multinationals active in electricity

Table 12. Asian Multinational electricity companies active in Asia-Pacific

	Home country	Activity	Assets (customers/capacity)	Countries active
Cheung Kong	Hong Kong/China	Distribution	1662,000	Australia
Cheung Kong	Hong Kong/China	Generation	1860 (864)	China
China Light	Hong Kong/China	Generation	9524 (4620)	Australia, Taiwan, Thailand, India, China
J-Power	Japan	Generation	2032 (570)	Thailand, Taiwan, China, Philippines
KEPCO	South Korea	Generation	1800 (1800)	Philippines
Meiya Power		Generation	3510 (1924)	China, Taiwan, South Korea
SingaporePower	Singapore	Generation	1280 (1280)	Australia
SingaporePower	Singapore	Distribution	500,000	Australia
YTL	Malaysia	Transmission		Australia

3.1. Cheung Kong

Cheung Kong is a Hong Kong based international conglomerate. Its web site (<http://www.ckh.com.hk/eng/index.htm>) claims: 'The combined market capitalisation of the Cheung Kong Group amounts to HK\$576 billion as at October 31, 2004; this accounts for approximately 10% of the total market capitalisation of the Hong Kong stock market. The Cheung Kong Group operates in 42 countries and employs over 180,000 staff worldwide.'

Its interests are in property, energy, telecoms and life sciences. For energy and infrastructure, it operates mainly through Hutchison Whampoa Ltd in which it holds 49% of the shares. Hutchison Whampoa took a substantial stake in Hong Kong Electric Company (HEC), the company that supplies Hong Kong Island in 1985. In 1997, Hutchison Whampoa took an 85% stake in Cheung Kong Infrastructure (CKI) .

Its main investments are in Australia where it owns:

- Citipower. An electricity distribution company in Melbourne with 275,000 customers (50% owned by CKI and 50% by HEC);
- ETSA Utilities. An electricity distribution company in South Australia with 765,000 customers 50% owned by CKI and 50% by HEC);
- Powercor Australia an electricity distribution company in Victoria with 622,000 customers (50% owned by CKI and 50% by HEC);
- Envestra. A gas distribution company with 900,000 customers (18.55%);
- AquaTower. A water distribution company providing water to 50,000 consumers in Victoria (49%);

Its other main investments are in China where its assets include;

- Fushun Power Plants. 150MW of power in Liaoning (60%);
- Siping Power Plants. 200MW of power in Jilin (45%);
- Qinyang Power Plants. 110MW of power in Henan (49%);
- Zhuhai Power Plants. 1400MW of power in Guangdong (45%).

In August 2004, Cheung Kong Infrastructure Holdings was the leading member (69.8%) of a consortium that bought the Northern England gas network for about £1.4bn. Other members of the consortium were United Utilities and Ki Kas Shing Foundation, both with about 15%. It already owned Cambridge Water in England, which supplies water to 298,000 consumers.

Table 13. Cheung Kong electricity assets in Asia

	Asset	Business	% interest	Output/customers
Australia		Distribution		1,662,000
	Citipower	Distribution	100	275,000
	ETSA	Distribution	100	765,000
	Powercor	Distribution	100	622,000
China		Generation		1860 (864)
	Fushun	Generation	60	150 (90)
	Siping	Generation	45	200 (90)
	Qinyang	Generation	49	110 (54)
	Zhuhai	Generation	45	1400 (630)

3.2. China Light and Power

China Light & Power CLP (<http://www.chinalightandpower.com.hk/NR/exeres/351565CF-5D97-49BB-9618-BF604F509B38%2CE74CDB1B-8353-44F0-A5F7-B00E269A2CA2%2Cframeless.htm?ch=%5F&lang=en>) supplies electricity to the mainland territories including Kowloon and the New Territories of Hong Kong. CLP is a privately owned

company, being part of the CLP Holdings Group. CLP Holdings focuses mainly on electricity and has foreign investments in power plants in China, Australia, India, Thailand and Taiwan.

Its main investments are in mainland China where it has four major investments. The Shandong Zhonghua Power Project is a 3000MW coal-fired plant in which CLP has a 29.4% stake. The other foreign investor in this is EDF, with 19.6%. It also owns 41.5% of the 99MW Guangdong Huaiji Hydro-electric Power Project, 49% of the Beijing Yire power station (400MW, coal) and 70% of the Anshun 2 power station (600MW, coal). The other holdings in these projects are all Chinese.

In Taiwan, it owns 40% of the Ho Ping coal-fire power station 1320MW in partnership with a Taiwanese company. In Thailand, it took a 14.9% stake in the Electricity Generating Public Company Limited (EGCO) spun off from EGAT, and subsequently increased this to 22.4%. EGCO owns 2000MW of plant in Thailand. CLP took a majority interest in the 1450MW Yallourn coal-fired power plant in Victoria in 2001 and subsequently increased this to 100%, taking over stakes from Powergen (UK) and others. In India, it took a majority stake in the CCGT plant, Paguthan (655MW) in Gujarat in 2002, again with Powergen and took over full control in 2003.

Table 14. China Light & Power electricity assets in Asia

	Asset	Business	% interest	Output (CLP share)
Australia	Yallourn	Generation	100	1450 (1450)
Taiwan	Ho Ping	Generation	40	1320 (528)
Thailand	EGCO	Generation	22.4	2000 (448)
India	Paguthan	Generation	100	655 (655)
China		Generation		4099 (1539)
	Shandong Zhonghua	Generation	29.4	3000 (882)
	Huaji	Generation	41.5	99 (41)
	Yire	Generation	49	400 (196)
	Anshun 2	Generation	70	600 (420)
Total				9524 (4620)

3.3. EGAT

The Electricity Generating Authority of Thailand (EGAT) was established in 1969 as a fully integrated, nationally-owned electric utility supplying power to Thailand. Its vision (http://www.egat.or.th/english/about_egat/index.htm) is: ‘To be the ASEAN Power Grid center and the region’s leading company in energy and related businesses.’

Attempts to privatise EGAT have been continually delayed and in March 2004, the Thai Prime Minister Thaksin Shinawatra announced the postponement of plans. However, in October 2004, new plans to privatise EGAT were launched. It remains to be seen whether these new attempts will be more successful than the earlier efforts.

EGAT owns about 15GW of plant in Thailand, about 60% of total Thai capacity, it owns and operates the national transmission network. It sells its output to two distributing authorities, the Metropolitan Electricity Authority (about 35% of the total supply) and the Provincial Electricity Authority (about 63%) which then deliver electricity to and users across the country. It sells a small amount of power directly to a small number of large users and trades power with Laos and Malaysia.

EGAT’s independent power plant activities are channelled through two associated companies: Electricity Generating Public Company Limited (EGCO), founded in 1992 as a wholly owned subsidiary and in which EGAT now owns 25% of the shares; and Ratchaburi Electricity Generating Holding PCL (RATCH) founded in 2000, in which EGAT holds 45% of the shares. EGCO controls 2000MW and RATCH controls 3600MW of plant in Thailand. Neither company nor EGAT itself appear to have any substantial interests outside Thailand.

3.4. J-Power

J-Power, (<http://www.jpower.co.jp/english/>) formerly the Japanese Electric Power Development Corporation, was privatised in October 2004. Previously it was majority nationally-owned with the balance held by the Japanese regional electric utilities. It owns 16GW of plant in Japan and it has begun to look outside Japan to expand its business.

Its first venture since privatisation is in Thailand through Gulf Power, a company in which it holds 50% (the balance is held by EGCO a company part-owned by EGAT). Gulf Power plans to build two power plants with combined capacity of 1468MW selling the output to EGAT, the nationally-owned company, under 25 year contract. Through Gulf Power it has shares varying from 20-49% in 5 operating plants with total capacity 450MW. It also has shares (11-19%) in two gas-fired plants with total capacity of 813MW.

Its other interests include a 24% share in a 50MW coal-fired plant in China, a 10% share in a 49MW geothermal plant in Philippines, a 40% share in a 670MW gas-fired plant in Taiwan and a 50% share in a 64MW wind farm in Spain.

Table 15. J-Power electricity assets in Asia

	Asset	Business	% interest	Output (J-Power share)
Thailand				1263 (285)
	Thaioil			813 (98)
	Thaioil cogen	Generation	19	113 (21)
	Independent gas	Generation	11	700 (77)
	Gulf Power			450 (187)
	Gulf cogen	Generation	49	108 (53)
	Nong Khae	Generation	49	112 (55)
	Samutprakam	Generation	49	115 (56)
	Rojet Biomass	Generation	25	9 (2)
	TLP	Generation	20	106 (21)
China	Shanxi Tianshi	Generation	24	50 (12)
Philippines	Leyte	Generation	10	49 (5)
Taiwan	Chiahui	Generation	40	670 (268)
Total				2032 (570)

3.5. Korean Electric Power Company (KEPCO)

Until 1997, the South Korean electricity system was owned and operated by a single fully vertically integrated company, Korean Electric Power Company (KEPCO). In 2001, the generation sector was separated from KEPCO and split into six companies and KEPCO remains as the transmission, distribution and retail company and is still fully publicly owned.

(<http://www.kepcoco.kr/en/Welcome.html>).

KEPCO has begun to diversify into international markets mainly providing expertise and consultancy services rather than through investment. In Philippines, it operates the 600MW diesel-fired Malaya plant in Rizal and has a stake in the 1,200MW gas-fired Ilijan plant in Batangas. KEPCO is the Philippines' second largest IPP after Mirant, and announced plans to invest at least \$1 billion to develop 1,000 MW of new capacity in the Philippines by 2006, including two coal-fired power plants in central Philippines which have already encountered stiff resistance from affected local communities. As of end-2003, KEPCO has \$1 billion in investments in the country; KEPCO expects to reap \$790 million from energy sales in the Philippines up to 2010.¹

¹ Korea Electric Power lights up overseas: Based on expertise, KEPCO seeks to build regional energy hub in Korea, THE KOREA HERALD, May 24, 2004.

In October 2004, KEPCO announced plans to build a 740MW gas-fired plant in Indonesia, a 100MW plant in China (26%) stake and also to build two 600MW plants in China, but these projects are still at a very early stage. In July 2004, it announced it would bid to build four nuclear power plants in China using technology Korea imported from the USA. It was also involved in the construction of a nuclear power plant in North Korea although it is difficult to determine how much progress has been made on this.

KEPCO's objective is to increase its overseas capacity to 5,000 MW by 2010.

Table 16. KEPCO electricity assets in Asia

	Asset	Business	% interest	Output (KEPCO share)
Philippines				1800 (1800)
	Malaya	Generation	100	600 (600)
	Ilijan	Generation	100	1200 (1200)

3.6. Meiya Power

Meiya Power (MPC) (http://www.meiyahk.com/main_frame.htm) was established in the early 1990s as a joint venture between the US utility PSEG (50%), the Asia Infrastructure Fund, an equity fund that invests in private utility companies in Asia (30%) and Hydro Quebec International (20%). In July 2004, Hydro-Quebec International sold its 20% stake in MPC to Darby Asia Investors Ltd and in October 2004, PSEG Global has sold its stake to BTU Group, a company owned by Middle East investors.

Meiya Power owns 14 power plants (11 in operation) with a total capacity of more than 4000MW. Most are in China including: a 600 MW thermal power plant in the Gansu Province; 1,200 MW thermal power plant in the Yunnan Province; three hydroelectric generating stations with a total of 171 MW capacity in the Guangxi and Sichuan Provinces; two cogeneration power plants with a total of 75 MW in the Jiangsu Province; a centralised steam generation plant and a 50 MW waste-gas power plant in Shanghai; a 98 MW combined cycle power plant in Chengdu. It has the following plants under construction; a 600 MW thermal power plant in Hubei Province; and another 30 MW cogeneration plant in the Jiangsu Province. Outside China, it has 480 MW combined cycle power plant in Taiwan and a 612 MW combined cycle gas-fired power plant in Korea (under construction).

Table 17. Meiya Power electricity assets in Asia

	Asset	Business	% interest	Output (Meiya share)
China		Generation		2433 (1149)
	Mianyang	Generation	75	54 (40)
	Hexie	Generation	100	98 (98)
	Xisaishan	Generation	49	600 (294)
	Huangshi City	Generation	50	200 (100)
	Qujing	Generation	37	600 (225)
	Zuojiang	Generation	60	72 (43)
	Fushi	Generation	70	54 (38)
	Wei-gang	Generation	65	50 (32)
	Nantong	Generation	100	45 (45)
	Tongzhou	Generation	80	30 (24)
	Hai-an	Generation	100	30 (30)
	Jing-yuan	Generation	30	600 (180)
Taiwan	Kuo-kuang	Generation	35	465 (163)
South Korea	Yulchon	Generation	100	612 (612)
Total				3510 (1924)

3.7. National Thermal Power Co (NTPC)

NTPC (<http://www.ntpc.co.in/home/index.shtml>) is the largest generation company in India with more than 22GW of mainly coal-fired plant. It is fully nationally-owned by the Indian government. It has plans to expand outside India but these plans are at an early stage yet. NTPC is exploring the possibility of setting up a Gas Based Combined Cycle Power Plant in Bangladesh through a joint venture with Bangladesh Power Development Board (BPDB) and Petro Bangla. NTPC and BHEL in consortium are planning to set up a 500MW integrated water and power project with 30MGD of desalination plant in Oman on BOO basis. The company is discussing development of a 300-MW coal-fired plant in Sri Lanka with a local partner.

3.8. Singapore Power

Up till 1995, electricity supply in Singapore was provided by the nationally owned Singapore Public Utilities Board (PUB). In 1995, the electric utility business was corporatised as Singapore Power (<http://www.singaporepower.com.sg/index.html>) in preparation for privatisation then planned for 1996. It remains in public ownership. Singapore Power took over the US company, TXU's assets in Australia in 2004. SPI Australia Group includes an energy retail business with more than a million customers, predominantly in Victoria and South Australia as well as electricity and gas network, and the 1,280MW Torrens Island Power Station. SPI Australia Group is also a one-third partner in the SEAGas pipeline that connects Victoria and South Australia.

Table 18. Singapore Power electricity assets in Asia

	Asset	Business	% interest	Customers/output
Australia				
	SPI Australia	Distribution	100	500,000
	Torrens Island	Generation	100	1280 (1280)

3.9. YTL

YTL's web site (<http://www.ytl.com.my>) claims: 'YTL Corporation Berhad is one of the largest companies listed on the Kuala Lumpur Stock Exchange (KLSE Stock Code: 4677, Bloomberg: YTLMK; Reuters: YTLS.KL), and together with its four listed subsidiaries has a combined Market Capitalisation of almost RM16 billion (US\$4.2 billion). The company was listed in 1985, has also had a secondary listing on the Tokyo Stock Exchange since 1996. YTL was the first Asian non-Japanese company to be listed on the Tokyo Stock Exchange.'

Its interests are classified as utilities; high speed rail; cement manufacturing; construction contracting; property development; hotels and resorts; and technology incubation. YTL Corporation carries out its utilities activities through 61%-owned YTL Power International Berhad ("YTLPI"). In Malaysia, YTLPI owns two power plants with a total capacity of 1212MW. It owns 33% of ElectraNet, the company that owns and operates the transmission network in South Australia. In UK, it owns Wessex Water.

Table 19. YTLPI electricity assets in Asia

	Asset	Business	% interest
Australia	ElectraNet	Transmission	33.5

4. Developments by country

4.1. Australia

Australia's electricity industry has been restructured along the lines of the British Model, i.e., vertical de-integration, wholesale and retail competition and privatisation. The National Electricity

Market (NEM) - a wholesale market for electricity supply in the Australian Capital Territory and the states of Queensland, New South Wales, Victoria and South Australia - commenced operating on 13 December 1998. The NEM delivers electricity to market customers on an interconnected power system that stretches more than 4000 km from Port Douglas in Queensland to Port Lincoln in South Australia. However, each of the states has a significant degree of control over the system, so it is necessary to examine each state separately.

4.1.1. Victoria

The State Electricity Commission was privatised and split up from 1994 onwards. The industry is regulated by the Essential Services Commission of Victoria. The transmission network was privatised in 1997 when the US utility, GPU bought it. In 2000, Singapore Power International bought the transmission network and it now trades as SPI PowerNet.

There are five distribution companies. The metropolitan distributors are AGL Electricity, CitiPower and United Energy; the rural distributors are TXU (formerly Eastern Energy) and Powercor.

AGL Electricity Networks supplies electricity to 261,000 consumers in North West Melbourne and is a subsidiary of AGL, an Australian electricity and gas company that operates across Australia, primarily in distribution and generation. CitiPower distributes electricity to 270,000 consumers in central Melbourne. It was bought by Cheung Kong of Hong Kong in July 2002 from a US utility, AEP, who had bought it from another US utility, Entergy, in 1998. United Energy was privatised in 1995, when Utilicorp (later named Aquila) took a 49% stake with an Australian company, AMP investments taking about 40%. Alinta Limited and entities managed by AMP Henderson (via Power Partnership) acquired all shares in United Energy Limited under a Scheme of Arrangement in July 2003. It distributes to more than 500,000 consumers in South Eastern Melbourne.

TXU Australia owns assets in a number of states and distributes to over 500,000 consumers in eastern Victoria through the company known as Eastern Energy. In August 2004, the TXU Australia was bought by Singapore Power International from the US utility, TXU, which had acquired it in 1995. PowerCor is Victoria's largest distributor providing electricity to about 600,000 consumers and is also owned by Cheung Kong, which acquired it in 2000 from Scottish Power.

The main power plants are:

- Loy Yang: The Loy Yang Power Plant is a 2000MW coal-fired station. Loy Yang Power was privatised in May 1997 and in April 2004, it was sold to the Great Energy Alliance Corporation (GEAC) which is comprised of the Australian Gas Light Company, Tokyo Electric Power Company and a group of investors led by the Commonwealth Bank of Australia
- Loy Yang B: The Loy Yang B power plant (1000MW, coal) was bought by the UK company, International Power from Edison Mission in 2004.
- Hazelwood: The 1600MW coal-fired power plant is owned by UK International Power.
- Yallourn: China Light and Power owns 92% of this 1450MW coal-fired plant, but in 2004, was reported to be looking for a buyer.

The [National Electricity Market Management Company](#) (NEMMCO), which operates the wholesale National Electricity Market (NEM), co-ordinates the planning of the interconnected power system of the NEM jurisdictions (Victoria, NSW, SA and ACT), and maintains the security of the system.

4.1.2. New South Wales

The Department of Energy, Utilities and Sustainability's (DEUS) role is to provide leadership in electricity policy and regulation. The industry remains in public ownership. The transmission company is TransGrid; there are four distribution companies, Country Energy, EnergyAustralia,

Integral Energy and Australian Inland Energy. There are four main generating companies of which the two largest are Delta Electricity (4240MW), Macquarie Generation (4640MW). Eraring Energy, and Snowy Mountains Hydro Electric Authority contribute the rest.

4.1.3. Queensland

The Queensland electricity supply industry is regulated by the Queensland Competition Authority. It currently comprises:

- generators (responsible for generating electricity) which compete and operate independently; there are three publicly owned generators ([Tarong](#), [Stanwell](#) & [CS Energy](#)) and several privately owned generators, including the Gladstone Power Station;
- [Powerlink](#) Queensland (state owned), which owns and maintains the high voltage transmission grid;
- two distribution businesses, [Energex](#) and [Ergon](#), with an effective monopoly over the distribution network within their regions;
- two retailers (subsidiaries of [Energex](#) and [Ergon](#)) with a regionally based monopoly over the retailing of electricity to franchise (ie. non-contestable) customers within their regions; and
- independent retailers.

Intergen (Shell (68%)/Bechtel (32%) owns a 54 per cent stake in the Millmerran power station (the other partners are Marubeni Corp., GE Structured Finance, the EIF Group, and Tohoku Electric Power Co) and has 50 per cent of the Callide C joint venture with CS Energy (owned by the Queensland government). Energex and Ergon are both state-owned companies.

4.1.4. South Australia

The industry is regulated by the Essential Services Commission of South Australia. Prior to the reforms, the industry was owned by the Electricity Trust of South Australia. This was split into three in 1998 in preparation for privatisation: ETSA Power, covering retail sales, ETSA Utilities, covering distribution (765,000 consumers), and ElectraNet SA, covering transmission. ElectraNet SA operates and manages the transmission network and was privatised in 2003. YTL (Malaysia took 33%, Powerlink 40.25 percent (a Queensland public sector electricity transmission company) and 19.5 percent to ABB, a world leading manufacturer of power transmission equipment.

In late 1999, the state awarded ETSA Utilities and ETSA Power to a consortium of Cheung Kong Infrastructure Holdings Ltd. and Hong Kong Electric International for A\$2.5bn.

TXU generates electricity Torrens Island in South Australia, the generator has eight steam turbines that generate 1280MW. TXU Australia was bought by Singapore Power International in 2004. NRG Flinders owns 760MW of generating plant (Northern and Playford) and has contracts for the output of the 160MW Osborne cogen plant. NRG has been in Chapter 11 bankruptcy protection since May 14, 2003. AGL owns the 180MW Hallet power station; Origin Energy owns about 250MW of mostly peaking gas-fired plants.

4.1.5. Western Australia

Western Power is the fully-integrated, state-owned electricity company supplying Western Australia. It was created in 1995 when the State Energy Commission was split into separate gas and electricity operations. It owns 3280MW of capacity (60% of the state's capacity). The government, through the State Office of Energy is currently discussing breaking up the industry, but it would be retained in public ownership.

4.1.6. Tasmania

The Office of the Tasmanian Energy Regulator, within the Government Prices Oversight Commission, set up in 1996, regulates the electricity sector. Disaggregation of the former vertically integrated Hydro-Electric Corporation (HEC) created three entities focused on the core business activities of generation, transmission and distribution/retail. All three remain in state ownership

Aurora Energy Pty Ltd is Tasmania's electricity distribution and retail company, Transend owns and operates the transmission network and Hydro Tasmania owns the power stations and remains in state ownership. In November 2005, Tasmania will enter the National Electricity Market as a peaking generator when the Basslink electricity cable links the island to the mainland.

4.1.7. Northern Territories

The Utilities Commission of the Northern Territory is the independent industry regulator. In April 2000, the Northern Territory government commenced a process of reform of the Territory's electricity supply industry, whereby the Power and Water Corporation's (Power and Water's) effective monopoly over the supply of electricity to final consumers is to cease. However, the state owned Power & Water Corporation remains a fully vertically integrated corporation with a retail monopoly for all but large consumers.

4.1.8. Australian Capital Territory

The sector is regulated by the Independent Competition and Regulatory Commission. ActewAGL formed in October 2000 when the Australian Gas Light Company (AGL), a major private sector group, and ACTEW Corporation, a government-owned enterprise, entered into Australia's first utility joint venture. Ownership of ActewAGL is shared equally between AGL and ACTEW Corporation. ActewAGL Distribution owns and operates the network in ACT and ActewAGL Retail sells power to consumers.

4.2. Bangladesh

Bangladesh is supposed to be unbundling its state-owned utility to create separate generating, transmission grid, and distribution companies. Since 1996 Bangladesh has allowed the development of IPPs: two large gas-fired generators have been set up by AES, a coal-fired power station is being set up by Chinese companies, and a number of barge-mounted power stations. This strategy is firmly backed by the ADB, World Bank and donors: in December 2003 the Asian Development Bank (ADB) authorised a \$286m loan of which \$100m is being used for "financial stabilization of sector entities created under the reform program" – partly to pay IPPs for power which the state distributors cannot afford to pay.⁸ However in November 2004 all donors were applying strong pressure on the Bangladesh government to speed up the restructuring and use of private generators, threatening withdrawal of funds.⁹

4.3. Hong Kong

Hong Kong has a very high electricity consumption per capita. Its population of nearly 7 million people used about 46TWh of electricity, nearly 7000kWh per capita, a higher per capita figure, for example, than the UK. This is despite the transformation of the Hong Kong economy in the past decade to a service economy with very little manufacturing.

Electricity is supplied by two fully vertically integrated companies, Hong Kong Electric (HEC), which supplies Hong Kong Island and China Light & Power (CLP), which supplies the mainland territories including Kowloon and the New Territories. Total installed capacity is about 11.7GW, about 70% of which is owned by CLP. The two systems are interconnected but with limited capacity and there are also links to China to allow the import of power from the nuclear power plant in which CLP has shares in China (Daya Bay in the Guang Dong province).

The two companies are regulated under a 15 year Scheme of Control Agreement that expires in 2008. Under this, the companies set their tariffs so that they make an agreed rate of return on assets. The Hong Kong administration is expected to publish a consultation document on the arrangements that would apply after 2008 at the end of 2004. The government appears not to have any prior position on any reforms. There are advocates of opening up the system to competition but there are also those (notably the electricity companies) that argue that the special characteristics of Hong Kong make such a solution unwise. These special characteristics include the importance to a

service economy of reliable electricity supplies, the high population density of Hong Kong which means most people and work-places are in high-rise buildings that cannot function without power.

Both HEC and CLP are privately owned companies, HEC being a subsidiary of Cheung Kong Holdings, while CLP is part of the CLP Holdings Group. Cheung Kong is a diversified group with interests, for example, in property, telecoms and life sciences as well as electricity. It is an international group with holdings in 42 countries, although in energy, its main foreign investments are in Australia and Thailand.

CLP Holdings focuses mainly on electricity and has foreign investments in power plants in China, Australia, India, Thailand and Taiwan.

4.4. India

India's electricity system was developed on the basis of vertically integrated state electricity boards (SEBs): the role of central government has been as regulator and also as owner of the three power companies:

- **National Thermal Power Corporation (NTPC).** NTPC generates about 25% of all electricity in India. It owns 22235MW of operating plant and has 5610MW under construction.
- **National Hydroelectric Power Corporation (NHPC).** NHPC owns 2475MW of operating plant, 4322MW under construction with 2420MW of plant held in joint venture under construction.
- **Nuclear Power Corporation of India (NPCIL).** NPCIL owns 2770MW of operating plant and has 3060MW of plant under construction.

In 1991 the government began encouraging private generation through independent power plants (IPPs), but after 10 years only 5,900MW of capacity was online or had secured finance. A number of states, led by Orissa, introduced a more radical model of unbundling and privatisation, promoted by the World Bank.¹⁰ These policies have included creative use of state support to attract private investors: the state of Karnataka decided to subsume all the liabilities of the former electricity board into the transmission company (Transco) so that all the newly created distribution companies (DisCos) are debt free.¹¹

The privatisation of distribution has included problems of commitment and pricing policies: following the impact of a cyclone in 1999, and subsequent price regulation, the central distribution company of Orissa was simply abandoned by its USA parent, AES.¹²

The new government of India elected in June 2004 is continuing to implement the liberalisation and restructuring introduced by the 2003 Electricity Act, including vertical unbundling of the existing state electricity boards, despite demands from the electricity trade unions for a reversal of this policy.¹³ The government also sold 10.5% of the state electricity company National Thermal Power Corporation (NTPC) to investors in November 2004: share prices rose 15% on the day of issue, providing immediate profits for investors.¹⁴

The Dabhol power station, set up by Enron in 1993 in Maharashtra, a western province of India which includes Mumbai, was the first IPP in India. It has produced little power for consumers, but continues to be a major problem for the Governments of India and Maharashtra. Enron obtained a power purchase agreement under which the state electricity board of Maharashtra paid a fixed fee

every month plus a price which ensured profit for Dabhol, but proved unaffordably high: the SEB's finances became even worse as a result. A committee of enquiry concluded that the assumptions and data on which the agreement was based were "utterly unsustainable", the negotiation process was suspect, and the finance was based on the guarantees given by Maharashtra and the government of India rather than the viability of the project.¹⁵ Following the collapse of Enron, and the inability of the SEB to continue paying, majority control of Dabhol was sold to two large USA multinationals, General Electric and Bechtel. The Indian government has sought to refinance the plant and restructure its operation to enable it to produce power at an affordable cost, while banks, export credit agencies, and the new owners of Dabhol have sought to obtain a return on their investment through legal action.

The Indian government now faces a series of law suits. In November 2004, the USA export credit agency OPIC started to sue the Indian government for \$110m to recompense OPIC for the political risk insurance claims they had paid to the new owners of Dabhol, GE and Bechtel, arguing that "The concerted actions of the Indian government have effectively deprived Dabhol Power Company (DPC) and its investors and lenders of their fundamental rights, interests, use, benefits and control of their investments in the Dabhol project in violation of GoI's obligations under public international law"¹⁶ This case was brought under the USA-India bilateral trade agreement. GE and Bechtel, the owners of Dabhol are also suing the government of India for \$1.2 billion compensation (under the Indian-Mauritius trade treaty, because Dabhol is owned through a Mauritian-based intermediary, Enron Mauritius); and at the end of November 2004 started another court case claiming \$3.9 billion compensation - this time under the Indian-Dutch bilateral trade treaty, because Enron Mauritius is owned by another intermediary company, Overseas Power Production, which is registered in the Netherlands.¹⁷

4.5. Indonesia

Indonesia's electricity sector was nationalised after independence under an integrated public monopoly, Perusahaan Listrik Negara-Djakarta (PLN). The Java-Bali system is relatively well developed, but the outer islands less so: overall, 57% of Indonesians have access to electricity. In 1992 the former dictator, president Soeharto, decreed that the private sector could again participate in the electricity sector, and with the encouragement of the World Bank this has been developed through the introduction of IPPs, and plans for unbundling PLN and introducing further liberalisation.¹⁸

The IPPs were negotiated with cronies of the Suharto government, and as a result of the non-transparent and, according to many sources, corrupt, way in which the agreements were reached, provided for 50% more capacity than Indonesia actually needed.¹⁹ The IPPs were supported by a total of 27 PPAs, under which PLN undertook to purchase 80 per cent of plant capacity for a minimum of thirty years, at prices well in excess of PLN's selling price. The currency collapse of 1998 made these prices utterly unaffordable for PLN, which was faced with bankruptcy unless it could cancel or renegotiate the agreements to reduce the cost of electricity.

PLN's failure to cancel the agreements was the result of resistance by the multinationals involved in the IPPs, supported by their governments and multilateral agencies. A corruption trial of USA multinational Edison over an agreement with Suharto cronies was dropped, partly at the request of the USA ambassador²⁰, while the multinationals pursued claims for breach of contract, including MidAmerican Energy, who won US\$573 million at arbitration²¹, and Florida Power and Light who won \$241million²². The companies also collected compensation from 'political risk' insurance: the World Bank's insurance agency, MIGA, paid \$15m to Enron on account of a power project that was cancelled, although even MIGA accepted that to proceed with the project was not a viable policy

option. According to Luis Dodoro, MIGA's general counsel and World Bank Group vice-president: "*While we understand the circumstances that led to (the Enron) project suspension, international law dictated that the cancellation be compensated.*"²³ MIGA then insisted that the Indonesian authorities had to reimburse them the \$15m, and as an incentive, MIGA refused to issue any more coverage for business in Indonesia until the money was paid.²⁴ The Wall Street Journal quotes the chief political adviser at the US embassy in the 1996-99 period as saying: ""protecting the interests of major investors and creditors was at the center of the table in everything we did..... Concerns about human rights, democracy, corruption never made it onto the table at all."²⁵

The cost of the PPAs has thus been carried entirely by Indonesians, who are not only having to compensate the multinationals for the profits that they have lost, but also paying much higher prices: the government of Indonesia agreed, in 2001, to increase prices by 24% per annum until 2005, when prices are expected to reach 7cents per kWh, sustaining a target 8% rate of return.²⁶

4.6. Japan

The Japanese electricity industry is controlled by 10 vertically integrated regional companies. The two dominant companies are Tokyo Electric (TEPCO) and Kansai Power, with a third company Chubu Electric also important. These three companies own about 60% of Japan's 216GW of generating plant. Most of the rest is owned by the six other interconnected companies, Kyushu EPC, Tohoku EPC, Shikoku EPC, Hokuriku EPC, Hokkaido EPC and Chugoku EPC. The other regional company, Okinawa EPC supplies Okinawa, but is not interconnected and owns less than 2GW of plant. The remainder of the plant is owned mainly by two companies, the Electric Power Development Corporation (EPDC, 16GW) trading as JPOWER and Japanese Atomic Power Company (JAPCO, 2.6GW), which build plants using new or challenging technologies selling their output to the regional companies. EPDC was majority owned by government with the regional companies holding the balance of shares. However, in October 2004, the government and the electricity companies sold their shares and the company is now an independent generator. 90% of JAPCO's shares are held by the regional companies and JPOWER.

All the regional electricity companies are privately owned and liberalisation efforts by government have had limited impact so far. From 2000, the largest consumers (those with demand in excess of 2 MW) could choose their supplier, representing 30% of the market. This is expected to increase to 60% when choice is extended to those using 500kW from April 2005. The government will review whether to extend choice to all consumers in 2007.

The Japanese companies have not yet invested much outside Japan although activity is beginning to increase. TEPCO is a member of a consortium building a power plant in Vietnam, but most of its other foreign activities are as a consultant.

4.7. Malaysia

Malaysia's electricity sector remains organised under a vertically integrated public sector utility, Tenaga Nasional Bhd (TNP), which was partly privatised through a flotation on the stock exchange in 1992. IPPs were authorised in the 1990s, involving local firms, not multinationals, and with the purchase prices denominated in local currency, thus avoiding the problems of exchange rate changes. Both TNP and IPPs are profitable.

4.8. Nepal

Nepal's electricity sector is covered by an integrated public utility, the NEA, but the government has sought to pursue policies of restructuring and privatization since the early 1990s. The measures include privatization by leasing existing small hydropower plants to private sector management, and the licensing of private IPP developments in hydropower. However of 105 licenses issued, 53 have been cancelled by the government: and two of the IPPs in operation have PPAs which are having a negative impact on the finances of the NEA. One 20MW project, Chilime, is structured as a private company, with 51% belonging to the NEA, 25 % to NEA staff, and 24% will be sold to the general public.

4.9. New Zealand

The New Zealand electricity industry has undergone significant reform in the two decades. The first of these reforms was the establishment of the ECNZ in 1987, as a nationally owned enterprise to operate as a commercial, profit-making organisation.

Originally ECNZ was the sole provider of electricity in NZ (including generation, transmission and retail). Electricity was distributed by local supply authorities. In 1994 Transpower, the transmission company was separated from ECNZ and became (and still is) a nationally-owned enterprise.

ECNZ was split into two more nationally-owned enterprises in 1996 - ECNZ and Contact Energy - and a wholesale electricity market was established. Another major reform was the privatisation of Contact Energy in 1999. Contact Energy is now the largest electricity retailer and generates about 30% of the country's electricity. Contact has ten power stations in NZ. It is majority owned (51%) by an Australian company, Origin Energy, which bought it from the US company, Mission Edison in October 2004. Mission Edison had bought 40% of the shares in 1999 and subsequently increased its holding to 51%.

The last significant reform, in April 1999, was the separation of the lines and energy businesses of the former Electricity Supply Companies and the split of ECNZ into three competing nationally-owned enterprises - Meridian, Genesis and Mighty River, all still nationally owned.

4.10. Pakistan

The electricity system of Pakistan is run by a the public authority for water and electricity, WAPDA, runs the transmission grid and distribution systems and also generates much of the electricity . In addition there are a number of IPPs supplying electricity under PPAs negotiated in the 1990s. Power prices to end-consumers are subsidised because the cost of power is

The government, under pressure from the World Bank, is now breaking up WAPDA, by creating 8 separate regional distribution companies, 3 generating companies, and a transmission company, with the prospect of future privatisation of distribution, and encouragement of further private power developments, including privatised hydro-electric schemes. WAPDA is already profitable.²⁷ It is said that more generating capacity is needed, especially as hydro supplies are becoming less reliable due to droughts, but, as under previous IMF regimes, the financial support is effectively conditional on privatisation. This has been strongly opposed by the union arguing that the problem of the costs of private power will become worse.²⁸ There is already tension over prices and subsidies: the IMF insist that subsidies must be phased out rapidly, but the new electricity regulator has stated twice that subsidies are necessary to make 3 of the regional distributors financially viable.²⁹

In the early 1990s 16 IPPs were set up in Pakistan by multinational companies in partnership with local investors, with the backing of the World Bank. The largest of these was Hubco, the largest company quoted on the Pakistan stock exchange, 26% owned by National Power of the U.K. These

were backed by power purchase agreements (PPAs) under which the electricity authority for Pakistan, WAPDA, had to buy electricity at set rates. By the late 1990s WAPDA's finances were in serious deficit, as the price payable to the IPPs were higher than the price at which electricity was sold to end-users. The price of electricity under the PPAs was 5.57 cents, compared with a price of 2.78 in Bangladesh's IPPs.³⁰ (A new Chinese-run coal-fired IPP, the Thar Coal Power Generation Plant, is also estimated to be selling at about 5 cents, although the price itself is said to be a state secret.³¹

In 1997 the then government of Pakistan pursued cases of alleged bribery in relation to these electricity contracts. Two contracts - one involving Southern Company (USA) (reported in the *South China Morning Post*, 7 July 1997), and one involving National Grid (UK) (*Financial Times*, 24 April 1997) were cancelled on the grounds that they had been improperly obtained. In 1998, faced with unaffordably high prices for electricity required under the PPAs, the government also brought proceedings for alleged corruption against other IPPs, stating that it would cut the price of electricity agreed under these contracts. The main target of these investigations was Hubco, the largest stock exchange quoted company in Pakistan, which was 26 per cent owned by International Power, a UK energy multinational. The company's chief executive escaped to the UK, having 'fled Pakistan following threats that he might be arrested' (*Financial Times*, 27 October 1998).

The IMF, the World Bank and the UK government all urged Pakistan to drop its corruption case against Hubco, and in particular to separate it from the issue of the price of electricity. According to the Financial Times: "The future of an International Monetary Fund agreement, currently under negotiation in Islamabad, is also partly tied to the extent to which Pakistan resolves its dispute with the power companies"³². The British and other governments actively supported the World Bank's position: 'Britain and the G7 group of countries are said to be exerting pressure on the international lending agencies to get the Kapco and Hubco impasse resolved before rewarding Pakistan with financial help' (*The Nation*, 30 December 1998). A UK government minister emphasised that the action against Hubco was a step backwards for 'investor confidence', rather than a step forward in the fight against corruption.³³ As a result of all this pressure, the Pakistan government in December 1998 dropped the prosecution of Hubco.

A week later, the prime minister instead turned on the Water and Power Development Authority (WAPDA), suspended trade union activities, and handed over control of energy transmission to the army (this was before the military takeover of Pakistan government itself). The union was suspended by presidential decree, which abrogated the right of the union to operate, even as a bargaining agent. One week after the military takeover and the suspension of trade unions in WAPDA, the World Bank authorised the IMF to proceed with a US\$1.3 billion bailout package for Pakistan, 'as it was satisfied with the government assurances for out of court settlement of two-year long row with the Independent Power Producers' (*The Nation*, 31 December 1998). WAPDA and Hunco finally agreed on a revised price in 2000.

4.11. Philippines

Prior to restructuring, the Philippine power industry was divided into a generation and transmission sector, which is controlled and operated by government through the National Power Corporation (Napocor), and a distribution sector largely in private hands. At the height of the power crisis in the early nineties, Executive Order 215 encouraged greater private sector participation in energy projects through BOT schemes and independent power producers (IPPs). In April 1993, the Electric Power Crisis Act allowed the Ramos government to enter into "take-or-pay" contracts with IPPs in

quick succession, with government offering generous terms and risk-sharing arrangements favourable to private investors.

Because of the IPP contracts, government guaranteed that they would pay for electricity that was never used, and electricity that was never even generated.³⁴ This cost was passed on to consumers as PPA, or purchased power adjustment. The IPP contracts made huge profits for their local and multinational owners. In 2001, fifteen IPPs were among the top 1000 corporations in the Philippines.

A US\$600-million loan from the Asian Development Bank and the Japan Bank for International Cooperation in 1998 was tied to the complete restructuring of the power industry, including the passage of an enabling law. The ADB-JBIC loan aimed to dramatically reduce government's role in the power sector, unbundle and privatize the power industry, and sell Napocor. The Philippines is among the first of ADB's developing member countries to implement privatization of generation assets, the entry into concessionaire agreements for the operation of transmission assets, and the introduction of a wholesale electricity spot market (WESM).³⁵ More recently, ADB is reportedly mulling a new power package that could be in the form of a partial credit guarantee to provide more assurance to investors.³⁶

In June 2001, the Electric Power Industry Reform Act (EPIRA) was approved; this is the most comprehensive legislation mandating the full privatization of the electric power industry in the Philippines. To ensure its passage, members of congress were allegedly bribed or paid off. Several citizens' groups, trade unions and consumer organizations rallied against the EPIRA law for three administrations.

EPIRA's major provisions include: (a) *Deregulating and privatizing the generation sector.* EPIRA expressly declares that the generation sector is not a public utility, or that the generation sector is not subject to return-on-rate base ceilings which in the Philippines is set at 12%. NAPOCOR's generation assets and contracts with IPPs, along with real estate and other disposable assets, shall be privatized.³⁷ (b) *Privatizing transmission.* The National Transmission Company (Transco) is created which would be privatized; critics question why Transco would also be bargained away when it is the most profitable of Napocor's assets. Transco earns at least P15 billion a year, has no debts to pay, and has a net book value of P128 billion.³⁸ (c) *Distribution.* The distribution sector is still a public service which may be undertaken by private distribution utilities, cooperatives, local government units, and other authorized entities over a specific franchise area. (d) *Retail competition.* Retail competition shall be facilitated by several new mechanisms, including: open and non-discriminatory access to the transmission system to all electricity users upon payment of 'transmission charge' and distribution 'wheeling' charge; and creation of a WESM. Critics claim, however, that because only one private utility controls 60% of electricity sales in the Philippines, the electricity market could easily be manipulated. Moreover, consumers below certain threshold levels still remain a captive market of the distribution utility serving their area. (e) *Universal levy.* The universal levy ensures that Napocor's "stranded costs" – excess debt and IPP obligations worth roughly P550 billion (US\$11 billion) – are recouped upon privatization. When EPIRA was enacted, its total financial obligations of Napocor was more than P900 billion, with roughly sixty-five percent due to the obligation to IPP contracts.³⁹

Napocor used to be the largest Philippine Corporation in terms of assets and net sales; it had the monopoly over the Philippine power industry. However, its IPP obligations and the burgeoning foreign debt due to the 1997 Asian financial crisis made NAPOCOR a losing proposition. Napocor workers rallied against its privatization not only due to the fear of separation and unemployment,

but also because of the onerous IPP contracts, as well as the threat of energy insecurity. Over the past decade, Napocor's workforce had been reduced by nearly 80% through various forms of "institutional reengineering" of the state-owned utility. When the Omnibus Power Bill (later enacted as EPIRA) was first filed in Congress in 1994, Napocor had some 17,000 employees.⁴⁰ In February 2003, the remaining 8,850 NAPOCOR employees were legally terminated.⁴¹ Among those who lost their jobs were former supervisors who are now employed in the informal sector as taxicab drivers or market vendors. Today, only 3,790 employees remain with a "residual" NAPOCOR; another ten percent reduction is in the offing with the sale of Napocor plants.⁴²

Although government claims at least \$1 billion in savings from the renegotiations of IPP contracts in 2003-2004, this had not been translated to lower electricity costs for the consumers. Electricity rates have gone up and will continue to rise. PPA rates exceeded the basic electricity charge, doubling electricity prices. In August 2004, the energy regulatory commission approved a 40% increase in Napocor rates; the state utility will seek another round of increases by January 2005. The regulatory commission also approved the removal of the 40% subsidy shouldered by industrial and commercial consumers in favour of small households.

4.12. Singapore

Up till 1995, electricity supply in Singapore was provided by the nationally owned Singapore Public Utilities Board (PUB). In 1995, the electric utility business was separated and corporatised in preparation for privatisation then planned for 1996. It was expected that Singapore Power Pte Ltd (SPPL) would initially be split into two generation companies, one transmission and distribution company and one retail company. In 1996 a decision was taken to delay privatisation by several years but divisions were set up within SPPL. Senoko and Seraya, each with about 2200MW of plant, PowerGrid (distribution and transmission) and Power Supply (retail) were set up. A third generator Tuas (TPPL) owned by a government investment vehicle, Temasek Holdings was set up to build the new 4000MW Tuas power plant. In April 2001, after continual delays in privatisation plans, Seraya and Senoko were transferred from SPPL to Temasek in preparation for flotation.

In 1998, a power pool was set up for day-ahead trading, but after two years it was found to have little significance and in 2003, revised trading arrangements were introduced. A few large consumers were given choice of supplier and in 2003 the limit was reduced so that those consuming more than 240MW/year could choose with the prospect of introducing competition for all by the end of 2004.

Senoko Power now has about 2500MW of plant, Seraya Power about 2700MW and Tuas about 1200MW, but the companies remain in public ownership. Singapore Power took over the US company, TXU's assets in Australia in 2004. SPI Australia Group includes an energy retail business with more than a million customers, predominantly in Victoria and South Australia as well as electricity and gas networks, and the 1,280MW Torrens Island Power Station. SPI Australia Group is also a one-third partner in the SEAGas pipeline that connects Victoria and South Australia.

4.13. South Korea

South Korea has a population of about 52 million people, an installed generating capacity of about 52GW and consumption of about 274TWh, making its per capita electricity consumption comparable to that of European countries.

Until 1997, the South Korean electricity system was owned and operated by a single fully vertically integrated company, Korean Electric Power Company (KEPCO). This was fully publicly owned at national level. In 1997, the President (Kim Dae-Jung) launched an attempt to split up and privatise

KEPCO, introducing competition in both generation and retail supply. In 2001, the generation sector was separated from KEPCO and split into six companies and a power exchange, Korean Power Exchange (KPx) was introduced. The six generators remained in public ownership. It was planned that in 2003, 6 distribution companies would be spun off from KEPCO leaving KEPCO as the national transmission company.

However, determined opposition to these changes from trade unions and other civil society groups led to the suspension of these reforms by the new Korean government elected in December 2002. The Korean Tripartite Commission, a long standing organisation composed of government, industry and trade union members formed a joint study team to re-examine the issues partly through national consultations and partly through a fact-finding tour of countries where electricity reforms had been attempted such as Brazil, USA and Canada. The President agreed to be bound by the recommendations of the Study Team. In June 2004, the Study team produced a majority report recommending against the earlier plans to break-up, privatise and introduce competition to the Korean electricity industry. It recommended that internal competition within the distribution units of KEPCO would be a more efficient way of increasing competitive pressures within KEPCO. The government agreed to these recommendations. It is not yet clear how the industry will be organised in future, particularly the fate of the six generation companies.

A small amount of IPP capacity exists, with the Korean company, LG Power owning about 1000MW of capacity. Hyundai began building a 600MW plant (expected to be completed in 1996 but this was taken over by the US company, Mirant, and again in 2002 by a Hong Kong based company, Meiya Power made up interests including PSEG (USA) and Hydro Quebec (Canada). In October 2004, PSEG sold its interest to BTU group (owned by Middle east investors) and Hydro Quebec sold its interest to Darby Asia Investors (Hong Kong). The largest IPP is Hanwha Energy with 1800MW in which El Paso owns 50% with Korean interests owning the remainder.

4.14. Sri Lanka

The Sri Lankan electricity industry is dominated by the government-owned Ceylon Electricity Board (CEB). This is a fully vertically integrated company that generates, transmits and distributes power owning 85% of generation and distributing to 2.4 million consumers, all except 350,000 in the Western and Southern coastal belt, supplied by another publicly owned company Lanka Electricity Company (LECO). Total installed capacity is about 2000MW, of which about 300MW was privately owned.

In 2002 the Sri Lankan government passed the Electricity Reform Act, which would result in the break-up of the CEB both geographically and by activity. Generation, transmission and distribution would be separated; the generation monopoly would be opened up, a national transmission company created and five separate regional distribution companies produced. In 2003, the government announced that it would not sell the distribution companies immediately. However, adjustments have been made to the law to allow foreign ownership of utilities and the proposals only have any logic if a privately owned industry is anticipated. However, by June 2004, little progress had been made and the Sri Lankan President Chandrika Kumaratunga appeared to have ruled out privatisation of the electricity industry. It is not clear whether the industry will be re-organised and how far private investors will be expected to meet the need for new power plants.

The largest foreign independent generator is the US company AES, which owns the 168MW diesel plant at Kelanitissa. It was reported that a failure at this plant led to a national black-out lasting about an hour in November 2003. The other plants are owned by Sri Lankan companies, such as Ace Power.

4.15. Taiwan

The Taiwan electricity industry is dominated by the nationally owned Taiwan Power Company (Taipower) which is a fully integrated company owning about 33GW of plant. There are two major IPPs, the 2400MW Mailiao plant owned by Taiwanese interest and the 1300MW Ho Ping power plant jointly owned by Taiwanese interests and China Light & Power (Hong Kong).

Plans to privatise and split up Taipower, in place since the 1990s, have been continually delayed, and privatisation is not expected before 2006. The nuclear and hydro plants (about 5GW of each) will not be privatised and there is ongoing controversy about the completion of the Lungmen plant. Taipower has no major foreign investments.

4.16. Thailand

In the 1960s Thailand formed three nationally-owned enterprises to run the electricity sector: the Electricity Generation Authority of Thailand (EGAT) responsible for generation and transmission throughout the country, and the Metropolitan Electricity Authority (MEA) and Provincial Electricity Authority (PEA) in charge of the distribution in Bangkok and the rest of Thailand respectively. In the early 1990s private power generation was encouraged, which resulted in the creation of large IPPs, involving multinationals (with 8% of installed capacity) small IPPs, usually owned and run by large industrial firms (with 8% of installed capacity) and renewable producers (2% of capacity). EGAT separated off some of its own capacity into EGCO, with 22% of installed capacity. All the IPPs were based on PPAs which included guarantees of a 15-20% rate of return and take or pay purchasing agreements. When demand for electricity fell this loaded EGAT with excess capacity and excess costs. Given the rigidity of the IPP contracts, the only way EGAT could adjust was by closing its own power plants.⁴³

From 2001 the plans to liberalise the sector have been slowly abandoned, including the cancellation of the proposed power pool, and were finally scrapped in 2003. This followed the Thaksin government's policy of creating national champions in all sectors, including electricity, and so the new policy restored EGAT to a central role as, in effect, a "single buyer" of all electricity. The government also proposed the privatisation by sale of EGAT, and a restored monopoly position would ensure a higher price for the shares. By 2004 civil society opposition had emerged on a number of aspects of energy policy, including the price rises resulting from the PPA contracts, and environmentalist concerns over use of fossil fuels, and the privatisation proposal was powerfully opposed by the trade union representing EGAT workers.⁴⁴

From February 2004 a series of demonstrations and strikes were organised by the union, highly the dangers of privatisation in terms of higher prices, the risk of corrupt allocation of shares to cronies, and the risk of foreign control developing through buying of shares. In March 2004 the government backed down and announced the cancellation of the EGAT privatisation plans. However, a general election in February 2005 is expected to result in another victory for the Thaksin government, and the privatisation plan may be revived.⁴⁵

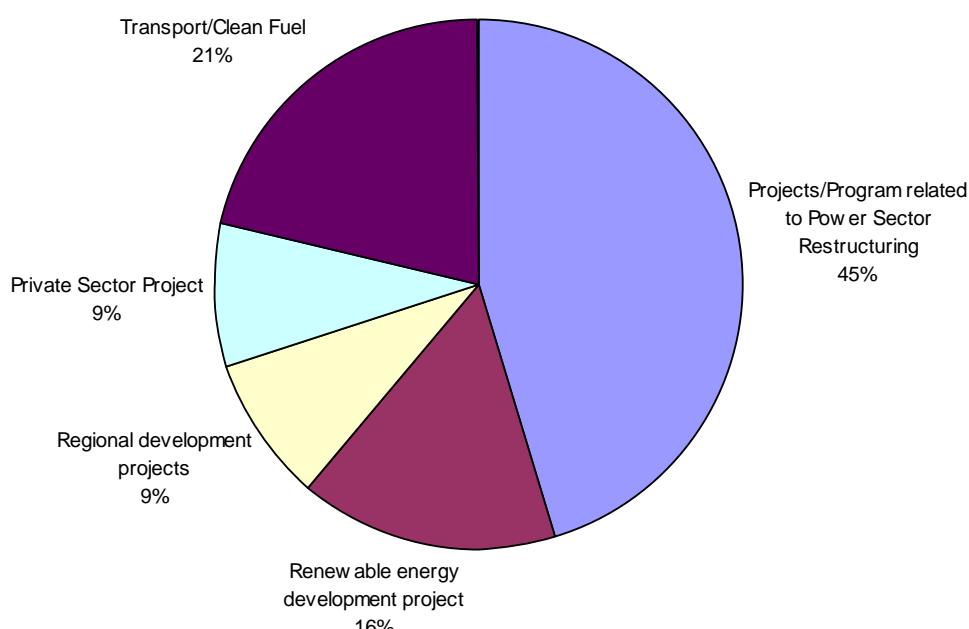
5. Development bank policies

Since the early 1990s both the World Bank and the ADB have promoted the conventional neo-liberal model for electricity: the unbundling of vertically integrated public sector electricity utilities into separate generation, transmission and distribution functions; the liberalisation and privatisation of generation, and privatisation of distribution in some cases; and an autonomous regulator to take

over the supervisory role from government. This priority can be seen in the ADB's lending pattern: by 2002 more than half the total energy loans supported power sector restructuring or privatization, including \$400m to support electricity restructuring in Indonesia.⁴⁶ For the World Bank the proportion was even higher: from 1993 between 75% and 93% of all power sector lending by the bank itself was to sustain restructuring or privatization, with IFC and MIGA finance being, necessarily, entirely concentrated on support for the private sector.⁴⁷

By 2003 the WB had acknowledged that the policies had failed to work as expected, partly due to political opposition and partly due to decisions by multinational companies to withdraw from investments in developing countries perceived as too risky. A WB evaluation report in 2003 noted that by 1999 the WB's power lending portfolio had been recognised as one of the Bank's worst performers, with continuing problems of political and financial risk noted in South and East Asia. The report also observed that the WB became centred on privatisation to an even greater extent than was stated in its own policies, and with poor results: "subsequent to the 1993 Policy, and without explicitly enunciating it as a major strategic change, the Bank mostly advocated privatization, as well as private participation through management contracts, as a means to achieving commercialization. This shift led to a highly reform-intensive power portfolio, which ultimately performed poorly overall during most of the 1990s". The report described the bank's role in supporting privatization in the power sector as "less clear in the current global environment of sharply reduced private capital flows", referring to the withdrawal of multinational investors and reports of "risks of re-nationalisation".⁴⁸ Both the ADB and the bank however remain committed to the same principles of power sector restructuring, including privatisation where possible.

Allocation of ADB Loan for Energy Sector 2002



Source: Fabby Tumiwa "ADB and Privatisation of Power Services" Bangkok 2003. Computed from ADB Annual Report 2002.⁴⁹

6. Issues and trends

6.1. Growing doubts on liberalisation and privatisation policies

A number of Asian countries have now reversed or postponed policies to liberalise and privatise. The policy changes in Thailand and South Korea were made in response to internal political opposition to privatisation, re-assessment of the international experience, and the retreat of the OECD multinationals. The de facto policy postponements, such as Singapore, Taiwan and Sri Lanka, may reflect similar considerations. It remains to be seen how policy and practice will develop in countries such as India and Indonesia where electricity privatisation has already proved contentious.

The reconsideration of policy by Asian countries is further reinforced by the World Bank's own re-assessment, which now sees the 'privatisation by globalisation' of the last decade as having failed to deliver the necessary investment in developing countries, and so expects future developments to be based more on national and/or regional operation and finance. This new international context makes it less likely that future policies will remain based on the recent orthodoxy of unbundling, liberalisation, and privatisation, and instead creates new opportunities for developing policies based around a strong role for the public sector, vertical integration, and use of international financing through bonds and loans rather than through concessions and privatisation.

6.2. Withdrawal of multinationals and expansion of Asian companies

The withdrawal of the OECD multinationals from Asian electricity markets is remarkable. Ten have withdrawn altogether from the region, and of the remaining nine, two are nationally-owned (EDF by the French government, CDC by the UK government) and two (Enron and Mirant) are dealing with bankruptcy. This withdrawal is part of a worldwide trend of electricity multinationals withdrawing from ventures which they now consider too risky or insufficiently profitable

Some Asian companies – mainly private, but some nationally-owned - have started expanding or are seeking to expand internationally, and others are considering doing so. In some cases they have taken over companies sold by OECD multinationals – most notably in Australia. Asian electricity company investment in Australia (2730MW, distribution to 2.1million customers) is now comparable to total private OECD electricity investment in Asia (3140MW, no distributors). Other investments are directed into markets where electricity has already been unbundled with private participation, such as Philippines and Thailand, together with a few investments in Taiwan and South Korea.

This expansion implies that Asian companies are prepared to accept lower returns or higher risks than OECD multinationals. This makes sense as part of a national policy to support domestic electricity services, under which the home government implicitly or explicitly underwrites the risks involved, but the same justification does not apply to external expansion. Such expansion may be supported by governments in the companies' country of origin, as part of a policy to expand business activity in the region. It is not clear whether these companies will be better able to limit

risk or increase returns than the OECD multinationals, or if the companies – or their home governments – are prepared to carry higher risks and lower returns in a context which is purely commercial (from the expanding company's perspective). The size of the market also remains uncertain. Unlike Europe, where there is a law requiring liberalisation in all EU countries, there is no political certainty that liberalised markets, or privatisation policies, will grow significantly in the region.

6.3. Sustainability and economic costs of IPPs

The economics of IPPs depend essentially on the sustainability of the long-term power purchase agreements (PPAs) on which they are based. In practice, the reliability of the return for investors is secured through government guarantees for the PPAs, and governments are even finding themselves liable for the cost of political risk insurance claims paid through national (e.g. OPIC) or multilateral (e.g. MIGA) export credit agencies. The effective cost and risk involved in IPPs has turned out to be significantly higher than anticipated, which has led to major stresses on the finances of governments and power authorities in many countries.

The most dramatic illustrations have been seen in the past and continuing lawsuits in India, Indonesia and Pakistan, which have prioritised the enforcement of contracts rather than the challenging of corrupt processes, but the inflexibility of PPAs is imposing rigid and costly burdens on other systems, including Thailand and the Philippines.

Governments may become more reluctant to enter into such guarantees, especially in the light of the recent acknowledgement by the IMF that such PPAs and guarantees contain debt-like obligations and contingent liabilities which should be quantified in assessing their relative attractiveness compared with direct public sector investment in power plants.⁵⁰ The Chinese government has already decided (in 2002) to void any guarantees of profits for foreign investors, which will leave IPPs exposed to higher levels of risk.⁵¹

7. Notes

¹ Profitable Mirant Philippines despite bankrupt Mirant US: "We are not surprised!" Statement of Citizen's IPP Review Commission (CIRC) on Mirant Philippines, 22 July 2003 (available at www.freedomfromdebtcoalition.org)

² Global Holdings Inc is the venture company of Mirant and First Metro Investment Corp. (FMIC), a Metrobank subsidiary; FMIC owns 51 percent and the rest is owned by Mirant which also acts as FMIC's technical partner. In: May 9-10, 2003, BusinessWorld (Philippines) Mirant to build PhP250-M power project in Panay; Inquirer News Service, Metrobank to increase power sector investment, November 13, 2003; Des Ferriols, The Philippine Star, First Metro Investment to acquire five more power plants, November 14, 2003

³ Ronnel W. Domingo, Inquirer News Service, Mirant readies P18-B public share offering, January 14, 2004

⁴ Manila Times, Mirant to expand power program to 500 more barangays until 2005, October 22, 2003; Donnabelle L. Gatdula, Philippine Star, Mirant completes P1-B rural power project, October 23, 2003

⁵ From 1997 to 2001, total electricity demand at SBMA grew at an annual average rate of 3.33 percent; the system peak demand grew from 23.9 mw in 1997 to 32.8 mw in 2002. In: Zinnia B. Dela Peña, Philippine Star, Mirant acquires 20% stake in Subic EnerZone, November 05, 2003; Manila Times, AEV, Ecozone ink equity agreement, November 05, 2003; Zinnia B. Dela Peña, Philippine Star Aboitiz raises stake in Subic power firm November 13, 2003.

⁶ Jennee Grace U. Rubrico, BusinessWorld (Philippines), Mirant Phils. invests PhP235M to upgrade Baguio facilities, December 23, 2003

⁷ Mirant now operates a 70-megawatt coal-fired plant in Cebu; it also owns a diesel power plant. It supplies the Visayan Electric Co. (Veco) with 46 megawatts daily. But starting June 2004 until the next 12 years, Mirant will provide Veco with an additional 24 megawatts. In: Jun P. Tagalog, BusinessWorld (Philippines), FOREIGN POWER FIRMS MAY AVERT CEBU POWER LACK (MIRANT SETS PLANT January 23, 2004; JUN P. TAGALOG, BusinessWorld (Philippines), Mirant to put up 100-megawatt plant in Cebu As Kepco mulls projects, January 23, 2004

⁸ ADB News Release No. 183/03 10 December 2003 Program to Help Bangladesh Reform Power Sector and Upgrade Electricity Services <http://www.adb.org/Documents/News/2003/nr2003183.asp>

⁹ Xinhua News Agency. November 6, 2004: Donors may shy away from Bangladeshi power sector: report

¹⁰ India Power Sector Reforms Update : Issue I Prayas 2001

http://www.prayaspune.org/energy/27_India_Reform_Update_oct%2001.pdf

¹¹ 11 Sep 2000 India: Karnataka to make power distribution cos debt-free: Asia Intelligence Wire

¹² Orissa State throws out AES management at Indian power company. Energy Daily, 4 September 2001

¹³ India Power Sector Reforms Update–Issue 9 – Sep. 04 Prayas 2004

http://www.prayaspune.org/energy/44_India_reforms_update9_Sep04.pdf

¹⁴ <http://news.bbc.co.uk/1/hi/business/3984809.stm>

¹⁵ Lessons of the Enron Disaster: Democratization through TAPing of Governance as the Remedy by Prayas Energy Group. 2002. http://www.prayaspune.org/energy/24_INFRA_Rep_01.pdf

¹⁶ Financial Express November 19, 2004 OPIC SUES GOI FOR \$ 110 M ON DABHOL PROJECT

<http://www.opic.gov/foia/awards/GOI110804.pdf>.

¹⁷ The Economic Times Of India November 27, 2004 Enron's Dutch Affiliate Makes Fresh \$ 3.9bn Arbitration Claim On Dabhol

¹⁸ Power Sector Restructuring in Indonesia: Viable Solution or Recipe for Disaster? Fabby Tumiwa 2002 in Asia Power Sector Reforms Workshop 2002 http://www.prayaspune.org/energy/41_Bangkok_report.zip

¹⁹ 01 Jun 1998 INDONESIA, WHERE BLAME IS THE GAME: Power In Asia FT Bus Rep: Energy

²⁰ Wall Street Journal 12 Feb 2004 Washington's Tilt to Business Stirs a Backlash in Indonesia

²¹ THE JAKARTA POST: PT PLN FIRST HALF LOSSES SURGE 12-FOLD; The Jakarta Post - Indonesia ; 01-Sep-2000

²² Wall Street Journal 12 Feb 2004 Washington's Tilt to Business Stirs a Backlash in Indonesia

²³ FT Energy Newsletters March 6, 2001 Indonesia/Finance: MIGA restores risk guarantees.

²⁴ FT Energy Newsletters - Power in Asia March 6, 2001 Indonesia/Finance: MIGA restores risk guarantees.

²⁵ Wall Street Journal 12 Feb 2004 Washington's Tilt to Business Stirs a Backlash in Indonesia

²⁶ Power Sector Restructuring in Indonesia: Viable Solution or Recipe for Disaster? Fabby Tumiwa 2002 in Asia Power Sector Reforms Workshop 2002 http://www.prayaspune.org/energy/41_Bangkok_report.zip

²⁷ The Pakistan Newswire November 4, 2004 Thursday: Wapda can start Kalabagh, Bhasha dam construction any time if govt directs: Tariq

²⁸ **Pakistan** Press International Information Services Limited **October** 21, 2004: WORKERS PROTEST AGAINST PRICE-HIKE

²⁹ **Pakistan** Press International Information Services Limited **November** 24, 2004: MINISTRY, NEPRA LOCK HORNS OVER SUBSIDY TO 3 WAPDA COS

³⁰ The **Pakistan** Newswire **October** 17, 2004 The energy crisis

³¹ The **Pakistan** Newswire **September** 29, 2004: Chinese company operating at Thar Coal Power Generation Plant will supply much cheaper **electricity** to the Water and Power Development Authority

³² *Financial Times*, 18 November 1998

³³ Reuters, 10 February 1999

³⁴ Studies by the Freedom from Debt Coalition show that take-or-pay guarantees compel Napocor to buy the contracted power even when the full amount is not actually generated or delivered. About 70% to 90% of the installed capacity of the plant is contracted, but the actual deliveries so far have only been from 10% to 40%. In 2002, it was discovered that there is one plant that does not generate at all, instead it buys its power from Napocor at a discounted rate and sells it to the Export Processing Zone to which it has a contract to generate and supply power to. Another guarantee which is absent in most countries that have contracts with IPPs is the fuel guarantee in which the government has to provide the fuel to be used by the IPPs. A foreign exchange guarantee is where the government absorbs any fluctuation in the peso-dollar exchange rate. The exchange rate when most contracts were forged in the early nineties was P26 to P27 per US\$1; the exchange rate since 2001 ranges from P50 to P55 per US\$1. From: "A National Situationer on the Philippine Power Industry", Freedom from Debt Coalition January 2004

³⁵ ADB Reconfirms its Support to Power Sector Restructuring in the Philippines, ADB Media Center, Manila Philippines, 13 September 2004

³⁶ ADB eyes new power package for RP, BusinessWorld (Philippines), August 5, 2004

³⁷ The Power Sector Assets and Liabilities Management Corporation (PSALM) was created to manage the sale, disposition and privatization of said assets. A 'residual' Napocor will retain its existence only to perform missionary electrification function through the Small Power Utilities Group (SPUG) in areas not connected to the transmission system.

³⁸ Dean O. de la Paz, III, BusinessWorld (Philippines), PSALM's Privatization flaws, October 20, 2004; Rey E. Requejo, Manila Standard, TRANSCO SALE -- GIVING AWAY A CROWN JEWEL, October , 2004

³⁹ "A National Situationer on the Philippine Power Industry", Freedom from Debt Coalition January 2004

⁴⁰ In 1997, NAPOCOR had a total workforce of 13,500. Mass layoffs and dislocations in 1998-1999 were caused by the abolition of several offices as well as decommissioning of old power plants. By end-1999, some 2,300 employees had already been separated from service or opted for early retirement. When EPIRA was enacted in June 2001, the number of NAPOCOR personnel was 8,850.

⁴¹ Rule 33 of EPIRA's implementing rules and regulations provides that NAPOCOR officials and employees shall be considered legally terminated and be entitled to separation benefits at the rate of 1 ½ months per year of service. In January 2004, the Department of Energy reported 99% completion of the restructuring of six agencies under it, including Napocor -- Napocor's workforce had been streamlined to 4,740 from 6,380 while Transco's manpower totaled 3,710; PSALM reported 56% completion of its staffing pattern out of the total 220 employees.

⁴² The government said it is aiming to raise \$4 billion to \$5 billion from the sale of Napocor's power plants and transmission facilities by end-2005 to trim the country's fiscal deficit. In September 2004, the government has privatized three mini-hydro power plants and is set to auction off the 600-MW Masinloc coal-fired power plant by end-2004. In: Bernardette S. Sto. Domingo, BusinessWorld (Philippines), Failures in RP energy sector reform noted, September 10, 2004

⁴³ The Politics of Privatization in Thai Power Sector: Past, Present and Future. Decharut Sukkumnoed Department of Development and Planning Aalborg University Denmark.

⁴⁴ The Politics of Privatization in Thai Power Sector: Past, Present and Future. Decharut Sukkumnoed Department of Development and Planning Aalborg University Denmark.

⁴⁵ The Politics of Privatization in Thai Power Sector: Past, Present and Future. Decharut Sukkumnoed Department of Development and Planning Aalborg University Denmark.

⁴⁶ ADB and Privatization of Power Services .Fabby Tumiwa. paper presented in Asia Pacific Conference on Debt and Privatization of Water and Power Services, organized by Jubilee South in Bangkok, December 8-12, 2003.

⁴⁷ Private Sector Development In the Electric Power Sector. A Joint OED/OEG/OEU Review of the World Bank Group's Assistance in the 1990s. July 21, 2003.

⁴⁸ Private Sector Development In the Electric Power Sector. A Joint OED/OEG/OEU Review of the World Bank Group's Assistance in the 1990s. July 21, 2003.

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⁵⁰ International Monetary Fund Public Investment and Fiscal Policy March 12, 2004 para 36

<http://www.imf.org/external/np/fad/2004/pifp/eng/PIFP.pdf>

⁵¹ The Politics of Privatization in Thai Power Sector: Past, Present and Future. Decharut Sukkumnoed Department of Development and Planning Aalborg University Denmark.