...as does Bangkok

Thailand is set to push ahead with plans to expand its coal-fired power generation capacity. State-owned utility Egat plans to seek approval from Thailand's interim government to approve its plans to boost coal usage and hydropower resources for electricity production, which would see coal's share of the country's energy mix rise from the present 16pc to 26pc by 2020.

Thailand has traditionally shunned coal-fired plants because of concerns about polluting emissions and protests from local residents and environmental groups, but the economic viability of coal for power generation is becoming harder to ignore.

"Right now we are using as much natural gas as possible, but coal is certainly an option that cannot be overlooked," says Sarawut Kaewtathip from the policy and strategy co-ordination office of Thailand's energy ministry.

Thai authorities have revised earlier estimates of power demand growth of 13,000MW down to 10,000MW. This is based on expectations for power demand growing by 5-5.2pc/yr, instead of the earlier projected 6pc/yr. But Thai consumers are still feeling the pressure from rising fuel and natural gas prices, especially with the previous civilian administration abandoning its policy of subsidies because of the rising cost.

Egat thermal power plants

	Province	Type	Cap. MW	Fuel
Bang Pakong	Chachoengsao	Combined-cycle	3,674	Natural gas/oil
Mae Moh	Lampang	Coal-fired	2,625	Lignite
South Bangkok	Samut Prakan	Combined-cycle	2,288	Natural gas/diesel
Wang Noi	Ayutthaya	Combined-cycle	2,024	Natural gas/diesel
Nam Phong	Khon Kaen	Combined-cycle	710	Natural gas/diesel
Nong Chok	Bangkok	Gas turbine	488	Natural gas/diesel
Sai Noi	Nonthaburi	Gas turbine	244	Natural gas/diesel
North Bangkok	Nonthaburi	Oil-fired	237	Oil
Lan Krabue	Kamphaeng	Gas turbine	134	Natural gas/diesel
Surat Thani	Surat Thani	Oil-fired	25	Oil
Mae Hong Son	Mae Hong Son	Oil-fired	6	Diesel

People power

The collapse of two coal-fired power projects in the 1990s was a sign that Thailand was not ready for such projects then, says AWR Lloyd energy analyst, Nopporn Wongsatitporn. But he says attitudes are changing with rising fuel and gas prices. The use of clean coal technology and the location of new projects in industrial estates rather than close to residential homes have also helped make coal-fired power plants more acceptable. If Thailand can replicate the structure of its new coal-fired BLCP power project, it will further convince its citizens of coal's viability as a power source, says Nopporn.

The first of two units of the 1,400MW BLCP plant started operations this month, with the second unit expected to be ready by the end of the year. The plant, which is jointly owned by Thai-based coal producer Banpu and Hong Kong-based utility CLP, received funding from the Asian Development Bank and Japan Bank for International Cooperation (JBIC), as well as private-sector international and Thai banks.

The BCLP power generating station was built at an industrial estate in Rayong province, south of Bangkok. The plant uses low nitrogen oxide burners, flue gas desulphurisation mechanisms and electrostatic precipitators to control emissions levels, says Banpu. This still did not stop environmental activist group Greenpeace from protesting against the plant last month, temporarily disrupting the first shipment of coal to the plant.

To comply with emissions standards, the BLCP plant will run on high-quality coal imported from Australia. Although nearby Indonesia is a major coal exporter, its supply of high calorific coal is limited. This gives Australian producers an advantage when it comes to supplying Thai power plants, says Banpu. Coal supplies to the BLCP plant are currently contracted to Australian miner Rio Tinto. Electricity generated by the plant will be sold to Egat under a 25-year power purchase agreement.

Analysts and power producers in Thailand agree that securing coal imports with a high calorific value will be vital in controlling emissions from the current and new coal-fired power plants. Low-sulphur, high quality Australian coal is likely to make up the bulk of the supplies needed to run the new power plants in the country, but as coal demand increases Thailand will probably consider Indonesian coal as well.

Although a majority of Indonesian coal is of low quality, its producers have been actively developing and pushing clean coal processing facilities that will help improve the quality of its exports.

Gas domination

Thailand relies on domestically produced natural gas for about 72pc of its power needs, while coal, hydropower and oil make up about 16pc, 6pc and 6pc respectively, according to estimates by Hong Kong-based corporate finance company AWR Lloyd. Thailand's consumption of natural gas for power generation will continue to rise, but its share of the country's energy mix will be reduced to 54pc by 2020 under the Thai authorities' latest plans.

The country's five coal-fired power plants that are currently operating have an installed capacity of around 3,850MW, with more expected to begin operations in 2013. The coal-fired plants now in operation other than the 1,400MW BCLP are the 2,625MW Mae Moh plant in the north of the country, which burns lignite; the 100MW TPI plant in Rayong; the 100MW combined Panjapol power plants in Bang Pa In and Samut Sakorn; and the 50MW Tuntex plant in Rayong.