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## BY Invitation

## Thailand's road to energy development and security

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Energy is a cornerstone of all modern economies. We all expect that when we flick the light switch to "on" we will have light. Industry requires secure and reliable power to operate effectively.

Finding the balance between the fundamental need for energy and, in particular, electricity and the inherent social and environmental concerns about where to locate power plants (and related infrastructure) essential to deliver that energy on a consistent, reliable and secure basis is a challenge faced by all economies.

In addition to the basic question of "Where to locate the power plants?" there are follow-on questions: "What types of power plants should be promoted?", "What should the 'energy mix' be?" and "What fuel source(s) to use?"

These are complex questions that require consideration of many issues that often are not apparent to the casual observer. In Thailand these issues are (or should be) addressed in the Power Development Plan (PDP) that is co-ordinated by a committee of industry representatives under the auspices of the Energy Ministry. It is critical that the PDP is prepared by an independent party and not by Egat.

In developing the PDP, the ministry will likely consider at least some of the following issues: the availability of local fuel supply, the energy mix and energy security, the impact of hard currency (US dollar) expenditure on fossil fuels, the cost of electricity delivered to consumers and, certainly not least of all, environmental and social concerns.

Unfortunately, this may not always be well communicated to the local communities and other stakeholders that will be affected by new power-generation facilities. This was illustrated earlier in the week at the aborted PDP 2007 public disclosure meeting.

The draft PDP 2007 offers three options for the development of electricity capacity for the period 2007-21. Unfortunately, of the PDP options presented - which might be described fleetingly as: coal, gas and coal-nuclear - none are both realistically viable and consistent with the Energy Ministry's stated objectives.

The PDP 2007 considered various alternative energy sources including gas, coal, alternative (renewable) energy and nuclear energy. It is probably fair to say that, realistically, it is highly unlikely that a nuclear power plant will be developed in Thailand within the PDP 2007 timeframe.

What is apparent, however, is that Thailand will have to come to terms with the fact that to achieve the dual objectives of economic growth and energy security, it will have to tap a combination of all of the remaining energy sources - gas, coal and renewable energy - and that new generation capacity will be provided in part by Egat and in part

by independent power producers (IPPs). This will require creativity and compromise.

We offer some suggestions on two areas where this creativity and compromise will be most wanting - the development of coal-fired capacity and the expansion of renewable energy.

The strong leadership of the Energy Ministry, possibly in conjunction with the Ministry of Natural Resources and Environment, will be necessary to develop a new "clean" coal project in Thailand. This may potentially be through the solicitation of an IPP plant in which the preparatory work relating to environmental and community programmes is initiated by Energy Ministry and progressed to a point where an investor would be comfortable to take over the development. The Energy Ministry may elect to employ a consultant (s) to assist in site selection (which would likely be within an industrial zone) and co-ordination of the project development. There is considerable experience both regionally and globally of such initiatives progressing to successful completion. The participation of a multilateral development agency in the process may further benefit the environmental credentials of the proposed project and the rigour applied to the development process and community programmes.

Another approach (not necessarily mutually exclusive) would be to promote the use of coal in a "co-firing" project in conjunction with a renewable energy (biomass) fuel. If the project design provides for considerable local community benefits - in particular, employment opportunities - this may assuage concerns about the use of coal within the fuel mix. This approach would have the dual benefits of diversifying Thailand's energy mix (away from over-reliance on gas) and increasing the participation of renewable energy within that energy mix. It will also mitigate the environmental impact of fossil fuel use and may help to develop a new paradigm for the public's perception and acceptance of coal.

Renewable energy projects have natural socioeconomic advantages - e.g. the use of local fuel (i.e. for biomass projects), potential income flows to communities and reduced outflow of foreign exchange - and environmental benefits. These benefits must be weighed against the generally higher cost of delivered energy from renewable sources.

The Energy Ministry has set a specific objective for the expansion of renewable energy by 2011 to 6% of delivered energy, which underscores the important contribution that officials hope this energy source will make to the Thai energy mix going forward. There is tremendous scope to increase the renewable energy target levels beyond 2011.

However, the expansion of renewable energy within Thailand's energy mix to achieve Energy Ministry's stated objective will require considerable focus from the Energy Ministry. In particular, the Energy Ministry needs to put in place an appropriate and detailed regulatory framework and tariff mechanisms to specifically support renewable energy investment. Larger-scale projects should be welcomed, not hindered. Hybrid projects based on co-firing offer enormous potential and should also be considered in the development of the regulatory framework.

With appropriate strategic thinking, creativity and compromise, Thailand can find the road to achieve economic growth and energy security without sacrificing the environment or disaffecting local communities.

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