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ARTICLE

The Future of Thailand's Energy Security: Transition, Technology, Trade and Investment

Global Shift Towards Renewable Energy

With a near universal consensus, policy makers are making every attempt to implement strategies and plans that will promote alternative forms of power generation that will reduce our near total dependence on coal, oil and gas. These attempts are designed to fulfill the ambitious goals adopted under the COP21 agenda. The near exponential advancement in technology that not only constantly halving the cost and investment required in producing a unit of electricity, particularly for solar and wind, but also making breakthroughs in various critical applications, such as in economical grid level battery storage system and affordable advanced electric vehicle. Even with these breathtaking technological advancements and their fast-paced deployment, continued global economic growth during the past decade has meant that the demand for coal, oil and natural gas remain on a rising trend, with natural gas as the most prominent. The transition of our energy system, from one that is dependent on coal, oil and natural gas to a system that renewable forms of energy play a dominant role, though has taken a firm footing, has not been realized as yet.

The status of the energy system transition in each country varies depending on their context. As for Thailand, through various programs of price subsidy and tax incentives, current share of renewable energy in our power generation mix exceeds the 10% target. We are striving to achieve a not too elusive goal of developing an investment scheme that will deliver a secured and reliable power generation sub-system based primarily on renewable energy resources that can produce electricity that is competitive to conventional system, the so-called grid parity, at the retail level. These sub-systems consist of small scale power plants (10 to 20 MW) that use tree residues, stems and roots as fuel, and the smart combination of floating solar PV system in a hydropower generation setting to provide firm power supply. However, the extent of power that can be generated from these sub-systems is limited, and it would be a challenge to achieve another 10% of Thailand's demand for electricity from these resources. For a more extensive uptake of renewable energy in our power generation mix, we need to engage households to invest in solar PV panels that will not only generate electricity to supplement their demand from the grid, but to sell excess power to the grid. The design and implementation of such a system would require substantial cooperation and resources from all sectors of government and society to succeed.

The Role of Coal, Oil and Natural Gas

Renown energy experts predicted that the global demand for coal and oil will continue to grow, albeit at a much slower pace, into the next decade, while natural gas sees a much stronger demand growth, due to a slower uptake of alternative energy for power generation and a lack of real alternative to oil in transportation, particularly for vehicles. For the natural gas market, the share of liquefied natural gas, or LNG, in cross border trades is overtaking pipelines and growing to more than half of the global long-distance gas trade. Furthermore, the increase in the number of countries that play dominant roles in LNG production implies that natural gas is becoming truly a global commodity. The supporting infrastructure such as LNG terminals is expanding very quickly. Trade in LNG may outstrip gas supplies via pipeline systems within the next decades. Continued investments in the energy sector are vital to ensuring global energy security.

To provide a platform for energy producers and energy consumers to share views and way forwards of oil, gas and alternative energy future, the Ministry of Energy of Thailand has hosted the 7th Asian Ministerial Energy Roundtable (AMER7) in Bangkok on 1-3 November 2017 in conjunction with the International Energy Forum (IEF). This biennial event is a platform for 36 Energy Ministers from energy producing and consuming countries in ASIA and 20 Heads of leading International Organizations to meet and discuss the energy security implications of potential energy transition pathways focusing on global energy market in transition: from vision to action through comprehensive policy dialogue. AMER7 underpins the development of the increasingly complex and dynamic relationships between energy producers and consumers in Asia and beyond. As a result, the visions and implications of oil market, gas market, and disruptive energy technology have been discussed with way forwards. One of the main outcomes from AMER7 is to enable long-term investments to respond to evolving supply and demand patterns. The market should be enabled to accommodate new technologies and transition policies in dialogue with market stakeholders, industry investors and financial institutions, to capitalise on new opportunities and minimise risks to existing investments.

For Thailand's energy sector, more than half of the primary energy comes from natural gas, followed by oil, coal, hydro and renewables. Private sector plays a leading role in our energy market and share strategic partnership with the government in providing energy security for the country. Driving the implementation of Thailand's energy policy, the private sector provides not only the necessary investments, but also brings the necessary innovation and technologies for future energy landscapes. Thailand has an open free market to let new comers and promote new investors in energy market value chains from upstream to downstream.

At present, the operation of Thailand's two major gas fields, the Erawan and Bongkot Gas Fields, are nearing the end of their concessions. The Ministry of Energy is in the process of preparing a bidding package to procure operators for these fields. Production sharing contract (PSC), instead of the former concession terms, has been selected as the new fiscal regime in the bidding. With the production from the Erawan and Bongkot Gas Fields accounting for about 70 percent of Thailand's indigenous natural gas supply, a smooth transition from the current operation to a new system is crucial for our energy security. The Ministry of Energy has scheduled to announce the invitation to leading upstream exploration and production companies to participate in the bidding for the operatorship of both of this field in the last week of April 2018.

Conclusion

Current trend in moving towards clean energy is probably the right road to take. Demand for renewable energy is growing very rapidly compared to demand for traditional energy sources. The spread of new and disruptive technology such as distributed power generation, energy storage, and smart grids are accelerating this process. At the same time, oil and gas consumption also continue to grow, though at not as fast a pace as in the past.

In the longer-term, investments in oil and gas may remain essential to meet demand, but the growth in renewables and energy efficiency lessens the call on oil and gas imports in many countries. At the same time, the variable nature of renewables, especially wind and solar, has started to play a greater impact on the stability of traditional power generation systems.
