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ASEAN's Nuclear Power Race: Winding Down for Renewable Energy?

By Cung Vu

Synopsis

As the world's fastest-growing economic region, Southeast Asia's energy demand will increase to drive this growth. While Vietnam's push towards nuclear energy may have started a regional race to develop nuclear power, this may slow down somewhat now that Hanoi has decided to freeze it. ASEAN should shift its focus to developing renewable energy.

Commentary

ON 22 NOVEMBER 2016, the National Assembly of Vietnam ratified their government's decision to hold off the building of its nuclear reactor. Cost was cited as the main reason. Another possible factor could be the unfolding lessons from the event of Fukushima, and the safety and security of nuclear reactors in cases of intentional attacks such as cyberattacks or terrorism still need to be assessed.

This is good news for the region. A possible regional nuclear energy race would now be avoided, and Vietnam's neighbours would not have to brace themselves for a potential nuclear fallout. The region should now focus on developing renewable energy to meet its energy demand.

Regional Race for Nuclear Energy

Vietnam is the only ASEAN country which, in 2009, announced the building of nuclear power reactors. Supposed to go online in 2028, Vietnam's quest for nuclear energy resulted in an increased frequency of discussions among neighbouring countries to address many aspects of nuclear safety and security.

The main concerns are whether ASEAN is ready to have nuclear energy in light of the nuclear accidents such as Chernobyl and Fukushima. In the world we live in, one needs to examine all the aspects of nuclear energy, not only its benefit of not producing GHG.

More importantly, ASEAN needs to examine the management of its life cycle such as the hazardous nature of spent nuclear fuel material. Moreover, potential environmental impacts of a nuclear meltdown due to intentional attacks from terrorism or cyberattacks must be planned for.

Regional Energy Landscape

With more than 600 million people, Southeast Asia is the fastest growing economic region in the world. Its economy is predicted to grow at the rate of 4-6% in the next five years and the energy required to support the economic growth will be substantially increased.

Countries with biggest energy demands include Indonesia, Malaysia, Thailand, Philippines and Vietnam, and they account for 88% of the energy consumption in the region. In 2013, fossil fuels contributed to 80% of the energy supply, with the rest coming from different renewable energy sources.

Southeast Asia is blessed with fossil resources such as hard coal, lignite, natural gas and oil as well as abundant sources of renewable energy such as solar, wind, hydro, geothermal, ocean, and biomass energy. The region accounts for 4.1% of the world's coal, 3.4% of world's natural gas and 0.8% of world's oil reserves.

Even though Southeast Asia as a region is a net energy exporter of fossil fuels, it continues to import oil to meet its energy demand. As an aspiration, the Association of Southeast Asian Nations (ASEAN) targets to increase its usage of renewable energy to 23% by 2025.

Planning for Energy Cooperation

To meet its energy demand, ASEAN has identified renewable energy as one of seven programmes in its action plan called the ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025. The other programmes are the ASEAN Power Grid, Trans-ASEAN Gas Pipeline, Coal and Clean Coal Technology, Energy Efficiency and Conservation, Regional Energy Policy and Planning, and Civilian Nuclear Energy.

ASEAN Power Grid

To meet electricity demand to stimulate economic growth, ASEAN needs to have a reliable and cheap source of electricity. ASEAN plans to construct a bilateral cross-border power grid, then expand to a sub-regional and finally to a total integrated regional system. This would serve to meet the electricity demand as well as to provide access to some of the 50% of the population which currently has no electricity.

Trans-ASEAN Gas Pipeline

This pipeline would connect existing and planned gas pipeline infrastructure to transport gas across borders to ensure greater security of gas supply within ASEAN.

Coal and Clean Coal Technology

As coal is still expected in the foreseeable future to be the main source of energy, ASEAN hopes to develop clean coal technologies and to facilitate intra-ASEAN coal trade towards enhancing regional energy security.

Energy Efficiency and Conservation

To lessen the energy demand, ASEAN also focuses on energy efficiency as the most cost-effective way of enhancing energy security. Energy efficiency programmes aim toward increasing energy efficiency in residential and commercial buildings, as well as in transportation sectors.

Renewable Energy

To increase the penetration level of renewable energy resources, ASEAN has launched many initiatives to promote solar and biomass, and to facilitate trade and cooperation in the region. Renewable energy has been considered not only to reduce the dependency on oil but also to minimise the environmental impact with regard to climate change. ASEAN targets to increase the level of renewable energy to 23% by 2025 in the ASEAN Energy Mix.

Regional Energy Policy and Planning

Each member state of ASEAN has its own agenda to address its energy needs. There is a need for expertise sharing in terms of policymaking and planning as well as technical and capacity building.

Civilian Nuclear Energy

As a clean source of energy, as it does not generate GHG, nuclear energy has been considered as an option to help ASEAN countries meet their energy demand. ASEAN seeks to promote information sharing, governance and technical assistance regarding nuclear power generation.

Is ASEAN ready for Nuclear Energy?

As energy generated from a fusion reaction, totally clean energy with no harmful byproducts is still being piloted. As such ASEAN needs to focus on developing more renewable energy to reduce its dependency on fossil fuels and put the current nuclear energy technology (fission reaction) on the back burner as it carries new and huge risks due to terrorism or cyber attacks.

Moreover, ASEAN should focus on delivering electricity to more than 300 million, half

of the population in remote islands or rural areas. New technology in micro-grid or smart-grid needs to be developed to address this. Clean coal technology and energy efficiency management will also help to balance the energy supply-demand in foreseeable future.

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