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Nuclear Energy in Southeast Asia: Competition or Cooperation?

By Alvin Chew

Synopsis

Southeast Asia is expected to see the operation of its first nuclear power plant by 2020. While this will alleviate concerns over energy security and carbon emissions, will the advent of nuclear reactors spark a nuclear energy race in the region?

Commentary

SOUTHEAST ASIA will have its first nuclear power plant on stream by 2020. Vietnam has already announced to host a two-reactor station to be built by Russia. The reactors are the first of the 16 that Vietnam has planned to meet its increasing energy demand. Other nations in the region have also expressed interest in pursuing nuclear energy. Singapore is conducting a pre-feasibility study to get into the nuclear game.

Vietnam's Surprising Lead

Vietnam, which is expected to receive financial assistance from Russia for its first nuclear plant, has emerged at the forefront in the regional charge towards nuclear energy. It has abandoned the waiting game as its appetite for electricity in the upcoming years grows, overcoming the past stigma of the nuclear industry. Global climate change concerns could have reinforced its decision, but for a developing country, Vietnam's quest for energy to propel its economy has greatly superseded the concerns about global warming. Nuclear energy aims to reconcile the twin dilemmas of energy security and greenhouse gas emissions. Nuclear energy serves as a source for baseload energy supply and does not emit any carbon dioxide in generating electricity. Nuclear energy will therefore help reduce the problem of global warming.

Yet, the Southeast Asian region is far from being considered advanced in terms of technological progress. The emerging economies in many parts of the world have embraced nuclear energy as an alternative to conventional fossil fuels. In China, nuclear reactors are being constructed at a phenomenal rate that will see an additional 108 reactors to its current fleet in 15 years' time. Oil-rich nations in the Gulf adopt the lucrative strategy of exporting oil and gas while switching to nuclear energy for their domestic desalination purposes. These countries acknowledged the criticality of nuclear power for their economic growth.

Time for Southeast Asia

It is high time that this already established technology makes its way into Southeast Asia. The developing region can benefit from the technological boost flowing in, and the training of highly skilled operators to prepare for their first reactor in 2020. Already evident when a new entrant decides to operate a nuclear reactor is the numerous technical cooperation forged between itself and the various nations which already have the technical know-how. In addition, educational institutions and international contractors will want a share of the pie.

We are also witnessing a renewed interest in nuclear energy in the other ASEAN countries. Malaysia, Indonesia, Thailand and the Philippines have all proposed to operate nuclear power plants in their countries. Riding on the wave of the global climate change agenda is a relatively weak argument for these developing nations; ultimately it is the perfectly legitimate reason of economic growth that shapes their energy policies. Furthermore, these nations see the technological and even strategic value of having nuclear power plants – an avenue to build up technical competence and engage internationally on nuclear-related matters.

Nuclear energy also plays the role, paradoxically, of boosting the safety profile of a nation. Highly trained specialists are required to operate nuclear power plants and adhere to the safety standards and international safeguards of fissile materials. A strong emphasis on safety culture needs to be cultivated in society for the responsible handling of nuclear power plants. Given the close proximity of its Southeast Asian neighbours, the onus of safety in managing a nuclear power plant sited in Vietnam is not only on Hanoi; the entire ASEAN region has a part to play in ensuring that the best safety frameworks are in place. Nuclear power plants offer the potential for the regional countries to cooperate in this realm.

Regional Cooperation

To be sure, nuclear energy is not a new idea in Southeast Asia. The region had mooted it for the past few decades. Indonesia has a long-standing history of pursuing nuclear energy. Over the 40 years, it has built up the largest nuclear infrastructure in Southeast Asia, with three research reactors and a large pool of qualified staff. Thailand and Malaysia have also developed bodies of expertise to operate their research reactors. However, operating a full-fledged nuclear reactor for the purpose of generating electricity requires a different skill sets. With an established infrastructure, these countries will embark on an accelerated learning curve when they decide to have their first operational nuclear power plant.

Singapore is making efforts to ensure that it is not left out in the game. In carrying out a pre-feasibility study, it is building confidence in the international community that its decision is not an impulsive one. The outcome of its pre-feasibility study is inconsequential to Vietnam's nuclear energy expansion. Singapore understands the need to be continuously engaged in Southeast Asia -- a region which will see a confluence of technological advancement in the future.

Regional technical cooperation is crucial in addressing the challenges posed by having nuclear energy in Southeast Asia -- from the front-end of uranium supply to the back-end issues of waste management. There are clearly lessons for the region from countries already operating nuclear power plants. Southeast Asia has 10 years before the first Vietnamese reactor come on stream. It is indeed a very short time to make the region a model for nuclear cooperation. But the clock is ticking away. Can we do it?

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