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Energy Security: Southeast Asia Revives Nuclear Power Plans

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Synopsis

Southeast Asian states are moving to push ahead with nuclear power plants in an about-turn from the focus on safety risk in the search for energy security. For Singapore, having nuclear power plants close by would represent a significant risk.

Commentary

AS 2014 approaches, Southeast Asian states are proceeding with plans to push ahead with nuclear power plants, supported by generous terms provided by the governments of South Korea, Japan, China, Russia and France, which would provide the technology.

Singapore has concluded that the safety risks are too high and current technology is not advanced enough to embark on the use of nuclear power technology in Singapore. In a parliamentary statement in October 2012, the Government announced that it will not pursue the nuclear option at the present time. This makes Singapore an exception in Southeast Asia.

Regional about-turn

Vietnam is the most advanced with two Russian-built reactors to be completed by 2020 followed by two Japanese reactors in southern Ninh Thuan province. Another six reactors are proposed. In Thailand, two reactors are planned and four are proposed. Malaysia plans to build two reactors in coastal areas of southern Johor. Indonesia is considering smaller reactors on Bangka island and in West Kalimantan. The Philippines is debating re-commissioning a nuclear plant built in Bataan by the Westinghouse Corporation of the United States in the 1980s, but never operational because of safety concerns. It was built close to a seismic fault line near the then-dormant Mount Pinatubo and was at the centre of intensive corruption investigations.

These developments mark a major about-turn in the region. Like the rest of the world, there was a fundamental re-thinking in Southeast Asia following the Fukushima tsunami and destruction of its nuclear power plants in March 2011. The safety risks of nuclear power led to a major shift in perceptions in developed countries. Germany took the lead in moving to close down existing nuclear power facilities. However, barely two and a half years later, the nuclear power lobby has been effective in getting governments in Southeast Asia to re-assess and to proceed with their original plans.

The effectiveness of such lobbying occurs because of the shared perspectives of the builders of nuclear power plants attracted by the possibility of new customers to replace vanishing developed country consumers, governments keen to reduce their reliance on imported energy and domestic scientific lobbies eager to deploy cutting edge technology. The search for energy security is at the heart of the turn to nuclear energy. Although there is consumer resistance because of the fear of nuclear accidents, consumers are unorganised, with critics of nuclear power usually in civil society groups at the margins of policy making.

Ironically, this move to nuclear energy occurs at a time when the world of energy scarcity envisaged a decade ago is being overturned by the development of clean coal technologies, shale oil and gas discoveries, the exploitation of geo-thermal and bio-fuel resources and advances in solar and wind power technology. These resources are abundantly available in Southeast Asia but there is a gap in awareness. Policy-makers are driven by mental models of a world whose future seemed clearly charted a decade ago. Sharply increasing fossil fuel prices at that time made nuclear power an attractive policy option, especially as governments had to meet the challenge of growing budget deficits with rising fuel subsidies.

Energy security search

Energy security is identified with energy independence, the avoidance of the need to import energy. While the cost of nuclear power remains high, the rapidly increasing exploitation of shale gas will drive down energy costs in the region, especially as Australian sources come on-stream. Clean coal technologies pioneered by China and the United States will also reduce the carbon emissions of coal-fired power plants, although there will be a time lag before widespread adoption occurs. However, the mantra of energy security helps to drive policy-makers to search for the holy grail.

Indonesia is a classic example. Policy makers backed by the National Nuclear Energy Agency (BATAN) are pushing nuclear power despite the country's abundant resources of coal, geo-thermal energy as well as solar and wind power. It is also a major source of bio-fuels as the world's leading palm oil producer. While nuclear power advocates in Indonesia will take a back seat as the 2014 elections approach as it is a vote loser, expect a re-play of the 2009 scenario.

Then, nuclear power advocates emerged soon after the elections even though it was absent from electoral debates and candidates of all parties sought to re-assure voters in central Java, a key area of political competition because of its huge population, that they did not support nuclear power.

Since the mid-1980s, BATAN has pushed for the development of a nuclear power plant on the slopes of the Muria peninsula, a dormant volcano in a seismically active area in north central Java. Its plans were first delayed by the 1997-98 Asian financial crisis and later by the strong opposition of the local population in a newly democratic Indonesia. BATAN is now contemplating smaller nuclear plants in Bangka island, just south of Batam, and in West Kalimantan.

However, neither proposal is cost-effective. As the main users of electricity are on Java, undersea cables would be used to transmit the power generated with a significant transmission loss. In any case, plentiful coal is available in Kalimantan and coal-fired plants using state of the art clean coal technologies are significantly cheaper to operate than nuclear power plants with the latest technology.

Nuclear power risks

While BATAN has been fixated with the nuclear power option in 2011, Indonesia’s deputy minister of energy and mineral resources, Widjajono Partowidagdo, noted that Indonesia was not ready to build a nuclear power plant because of the level of corruption and weak supervision in the country. Indonesia’s *asal bapak senang* (keep the boss happy) bureaucratic culture is a deterrent to developing a safety culture. Indonesia is not alone.

Significantly, Japan’s Nuclear Accident Independent Investigation Commission (NAICC) report cited in the Japanese Diet’s report on the 2011 Fukushima nuclear disaster noted that Japanese cultural conventions such as ‘reflexive obedience’, ‘stick with the programme’ insular perspectives, cliquish behaviour and the tendency not to question authority could have an impact on safety management and governance. Such attitudes also characterise Southeast Asian societies beyond Indonesia and highlight a major risk as programmes for the development of nuclear power plants move ahead.

For Singapore, the commissioning of nuclear power plants in southern Johor or Bangka would represent a significant risk, even if these sites are stable from the seismic perspective. Although advocates of nuclear power technology, especially the exporters of nuclear power plants, argue that the technology used will be more advanced than in the Fukushima reactors, they have not focused on Southeast Asia’s bureaucratic culture of obedience and deference as well as the willingness to take short cuts and compromise on quality and

efficiency.

Interestingly, Widjajono said in the same comment that a nuclear power plant may be feasible on the island of Batam if built and managed in cooperation with Singapore. However, even in Singapore, similar problems of deference, lack of oversight and cutbacks on maintenance can occur as the failings of our MRT system demonstrated in 2011-12.

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