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The 123 Agreement – Strengthening Non-Proliferation in Southeast Asia

By Alvin Chew

SYNOPSIS

Singapore signed a landmark 123 Agreement for peaceful nuclear cooperation with the US to strengthen the regional non-proliferation and nuclear security landscape. The agreement is timely given the growing interest in civilian nuclear energy programmes in Southeast Asia.

COMMENTARY

During US Secretary of State Anthony Blinken's visit to Singapore in July 2024, a thirty-year 123 Agreement was signed between the two countries to foster civilian nuclear cooperation. The 123 Agreement, as defined by Section 123 of the US Atomic Energy Act, establishes a legally binding framework for peaceful nuclear cooperation between the US and the partner country. Crucially, each 123 Agreement is underpinned by non-proliferation principles, including conditions such as the prohibition of uranium enrichment and reprocessing of plutonium in spent fuels, ensuring a focus on peaceful uses of nuclear energy.

The signing of the agreement was much welcomed and seen as an effort by both countries to dovetail climate change efforts with non-proliferation. Nuclear energy is touted as a viable and sustainable energy source to curb carbon emissions. Still, it needs to be properly regulated to ensure that nuclear materials are not diverted to non-peaceful uses.

Singapore Has Not Decided to Go Nuclear

The 123 Agreement does not mean that Singapore has decided to embark on a civilian nuclear programme. The comprehensive agreement only allows Singapore to access a broad range of secured nuclear technologies proprietary to the US, including nuclear

technology for medical, industrial, and research applications. Australia, too, concluded a 123 Agreement with the US in 2010 but has not signalled any intention to pursue civilian nuclear power.

Despite not having decided to pursue civilian nuclear power, Singapore is in a position to consider nuclear energy as an attractive option to bolster its energy security profile. The 123 Agreement allows Singapore to rapidly enhance its nuclear knowledge domain by learning from one of the leading countries in nuclear technology.

While the 123 Agreement is not technology specific, it will not allow Singapore to carry out front-end enrichment and back-end reprocessing, the two ends of the nuclear fuel cycle whereby fissile materials can potentially be diverted from peaceful uses. As such, it does not allow Singapore to pursue Generation IV reactor technologies that are not proliferation-resistant. For example, it will not allow Singapore to invest in or build capability in breeder reactors as the reprocessing of plutonium to be recycled and used as fuel will increase the risk of weapons development. Given that Singapore has no aspiration to acquire nuclear weapons, the agreement is not deemed restrictive and, in fact, helps to narrow down the technologies that Singapore can pursue.

If Singapore decides to embark on a nuclear programme, it will benefit from cooperation with a knowledge and technology partner that upholds the principles of non-proliferation. The US has been a strong proponent of the global nuclear security agenda, and along with the technology transfer enabled under the agreement, Singapore has a good foundation to build up competence and establish *locus standi* in the nuclear realm.

Cornerstone of Non-Proliferation

The Non-Proliferation Treaty (NPT) entered into force in 1970 and has garnered 191 signatories. It has three pillars: non-proliferation, disarmament, and peaceful use of nuclear energy. Over the past two decades, scepticism has arisen on the effectiveness of the NPT, particularly when North Korea withdrew from the treaty in 2003 and went on to test nuclear bombs. With Iran threatening to leave the treaty and disarmament efforts among the nuclear-weapon states (NWS), namely, China, France, Russia, the UK and the US, coming to a stalemate, the relevance of the NPT under the current security environment has been questioned.

As such, several non-nuclear-weapon states (NNWS) worked on a breakaway treaty, the Treaty on the Prohibition of Nuclear Weapons (TPNW), which entered into force in 2021. The TPNW provides for an outright ban on nuclear weapons, but none of the NWS have signed onto it. Concerted efforts are therefore needed to preserve the NPT. The five NWS are working with all State Parties to the NPT to strengthen elements of the treaty.

The third pillar of the NPT, the peaceful use of nuclear energy, is most pertinent in the current context of sustainable development. The advent of small modular reactors (SMRs) and other Generation IV reactor technologies will disrupt the current non-proliferation mechanisms established for conventional reactors. Hence, it is imperative to ensure that the export of new reactor technology for peaceful use will comply with

the NPT framework, and the 123 Agreement is an important arrangement to safeguard and strengthen this pillar.

Next Step - An ASEAN 123 Agreement?

Southeast Asia has no operating nuclear power plants. Still, all ten ASEAN Member States are signatories to the NPT, and pursuant to Article VII of the treaty, the Southeast Asia Nuclear Weapons Free Zone (SEANWFZ) Treaty was established. To date, Indonesia, the Philippines, Singapore and Vietnam have concluded the 123 Agreement with the US.

It is important for the rest of the ASEAN member states to level up their capacities and competencies to strengthen the regional non-proliferation regime. Singapore entered into nuclear cooperation with the US not because it has decided to adopt nuclear energy. Rather, it is levelling up its capability and preparing for the time when the region could eventually have nuclear power for civilian use.

There are other advantages if the region signs onto the 123 Agreement. Similar to the European Atomic Network Community (Euratom), the ASEAN Network of Regulatory Bodies on Atomic Energy (ASEANTOM), as an entity, can forge a bilateral agreement with the US to prevent the diversion of fissile materials from peaceful uses. ASEANTOM will then be able to streamline its regulatory efforts on nuclear technologies to ensure that the region remains free from the risk of proliferation. It could also open opportunities for closer regional cooperation in the nuclear sphere with common safety and security guidelines.

Conclusion

Nuclear energy plays a key role in helping countries achieve a more sustainable future. For Singapore, it is a viable option to solve its twin challenges of energy security and decarbonisation of its economy. However, the nuclear technology it chooses to embark on when it decides to do so needs to be proliferation-resistant. The 123 Agreement with the US provides the framework to assure the region that Singapore is on the right path in building up its capabilities and capacities in the nuclear sphere.

Alvin Chew is a Senior Fellow at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University (NTU), in Singapore.
