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Nuclear energy still a heavily contested topic

The **S. Rajaratnam School of International Studies Centre for Non-Traditional Security Studies' (RSIS-NTS')** recent workshop showed a clear divide in opinions between energy panellists when debating the environmental, economical and security aspects of nuclear energy, its use in Asia as well as feasibility in Singapore.

Titled 'Nuclear Energy and Human Security: Critical Debates', the workshop featured some of Asia-Pacific's most prominent energy specialists, such as University of New South Wales' Deputy Director of the Institute of Environmental Studies Dr Mark Diesendorf, Executive Director of the Institute of Applied Energy in Japan Dr Kazuaki Matsui, National University of Singapore's Principal Fellow at the Energy Studies Institute Dr Michael Quah, and Singapore Institute of International Affairs Chairman Associate Professor Simon Tay.

Arguing for the safety of nuclear energy to the environment, Lee Kwan Yew School of Public Policy Assistant Professor Dr T S Gopi Rethinaraj said that there are several lines of defence where nuclear power plants are concerned, and that the incidence of core meltdown is low.

"There are risks of course, but talking about inherent risks doesn't make sense," he explained.

He added that nuclear fear has deeper roots, referring to risks from radiation.

"Fear of death from cancer is only a manifestation of a deeper socio-psychological issue," he said, before likening this fear to witch hunting.

In response, Associate Professor Simon Tay said, "There are a number of risks," and elaborated on three points that suggested nuclear plants may not be ecologically sound. He noted thermal pollution "is not just hot air from the air conditioner next to you", that water is in short supply, in reference to cooling towers, and addressed the issue of nuclear waste.

Mr Tay urged for a thorough environmental impact assessment to be conducted before proceeding.

"We should not assume the culture of safety is there, especially when there is no record," he said.

Energy Studies Institute Principal Fellow Dr Michael Quah, who served as one of the commentators for the day, remarked that nothing is 100% safe, and that nuclear waste is a real issue.

"It must be understood in the environmental and sustainability

By **Olivia Choong**
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areas,” and added that, “The environment cannot be the last factor we look at,” underscoring the importance of economic development and not economic growth.

Dr Quah also said that the issue that should be framed is sustainability, and proposed that nuclear be considered as “one of several alternatives in an energy portfolio.”

Looking at the economic aspects, Dr Kazuaki Matsui championed the low cost in generating energy.

“The cheapest options vary depending on local conditions but future measures for carbon pricing could further strengthen the position of nuclear as compared to fossil fuels.”

Dr Mark Diesendorf instead encouraged using a mix of renewable energy.

“Nuclear power is not perfect and needs a back-up,” sharing also that nuclear plants differ depending on the site, and recommended windfarms and solar energy as alternatives to consider.

Panel commentator RSIS-NTS’ Assistant Professor Dr Chang Youngho raised several points, suggesting that a more market-based discount rate be used to determine the cost of building a nuclear plant, since “the decommissioning rate is not low at all.” and “if countries used to advanced technology cannot manage nuclear plants, what about developing countries? How can we trust them to manage it?”

He also asked, “Does low-hanging fruit in technology really exist?” and “What is the real cost of using nuclear energy?”

Addressing security issues of nuclear energy, The University of Tokyo’s Professor of the Global Centre of Excellence Program in Nuclear Education and Research Initiative, Dr Jor-Shan Choi and James Martin Center for Nonproliferation Studies Senior Research Associate Mr Miles Pomper were both on the same page.

Dr Choi and Mr Pomper talked about safety concerns of the physical protection of nuclear facilities and its transportation, International Atomic Energy Agency (IAEA) safeguards, spread of sensitive technologies such as enrichment and reprocessing, and lastly, spent fuel.

Dr Choi suggested that a new approach is necessary, where more co-operation and co-ordination on nuclear security is needed for materials as well as facilities, and ensuring that weapon-usable material be minimised. He also talked about providing nuclear power that is economically-competitive with an assurance of reliable supply and take-back, reduction of proliferation and spent fuel burden for countries wanting only to generate nuclear energy, and encouraged R&D; programmes to treat and dispose of long-life and problematic radionuclide in spent fuel.

Mr Pomper proposed that it is necessary to balance nuclear energy growth and nuclear security, recommending several measures, including nuclear security infrastructure be developed, said that there is a need not only to foster nuclear security culture, but also implement international agreements. In addition, he suggested the reduction or elimination of civilian use of Highly Enriched Uranium, boosting IAEA safeguards, and multilateral approaches to the fuel cycle.

In the final session of the workshop, RSIS-NTS Head, Professor Mely Caballero-Anthony and RSIS-NTS Research Analyst Kevin Christopher Punzalan discussed the roles of Civil Society Organisations (CSOs) in the nuclear energy debate, providing case studies on how CSOs have influenced government policy.

Their joint paper with Jakarta’s Centre for Strategic & International Studies (CSIS) Department of International Relations Researcher Lina A. Alexandra will soon be available for download at their [website](#).

While views remained split on the of feasibility of a nuclear energy plant in Singapore and Asia, all panellists came to a consensus that more research needs to be done with the environment,

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