

## ***Session 7: Towards a New Framework***

### ***Chairperson***

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### ***Discussants***

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### ***Role of Technology***

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In today's era of globalisation, technology has become increasingly relied upon to solve almost any problem encountered by humankind, in improving the way of life and to further national goals, such as socioeconomic development. It is in this respect that technology and energy security are so closely related to each other. With global warming becoming a perennial existential threat to humankind nowadays, and in the face of increased energy demand but uncertainty of supply, technology would seem to be the solution. However, tremendous amounts of investments would be required for R&D in the following areas:

- 1) *Traditional fuel sources:* The common perception that fossil fuel supplies would be exhausted in the foreseeable future had been challenged within scientific circles. Therefore, the issue on hand is not the problem with availability of supplies, but rather, the problem of accessibility. However, access to untapped fuel sources in naturally inhospitable regions requires better exploration and extraction techniques.
- 2) *Alternative fuel sources:* Continued dependence on traditional energy sources could only constitute a short term measure due to their price and supply volatility as well as environmental side-effects. Therefore, cleaner, alternative energy would constitute the long-term solution.
- 3) *Supply chains:* The energy supply chain is not concerned only with exploration and extraction, but also the refinement and distribution processes. Geographical limitations and security risks on the supply chain would require technological solutions. For instance, technological innovations could facilitate easier energy transportation, such as liquefying natural gas to reduce reliance on overland pipelines subject to geopolitical disruptions.

4) *Energy efficiency and conservation*: More attention should be devoted to curbing energy demand through technological solutions for households and industries to conserve energy, thereby sustaining energy resources.

That being said, however, technology could not be the sole solution to all energy security problems. Insofar as alternative energy sources are concerned, costs count as one of the factors which preclude widespread adoption, at least at the present moment, not to forget the adverse consequences of harnessing technology, as evident in the historical antecedents of nuclear accidents and their impact on the environment and humankind at large.

While a broad range of issues had been discussed during the sessions, a new framework remains far from becoming a conceptual reality. Indeed, the holistic, albeit bewildering, range of issues to be incorporated into the energy security discourse would risk making a framework too wide-ranging and unwieldy to manage.

Reconciliation of many longstanding and emergent issues so diverse as to include matters relating to governance, technology, markets, geopolitics and socioeconomic development would be no easy feat. To cope with a specific energy security situation, specific actions rather than a generic framework might be necessary, given the unique sets of objectives, constraints and different national and regional contexts which characterise the particular problem. Taking the case of ASEAN as an example, no doubt the long-term energy security formula would rest upon the development and safe use of nuclear energy, which would necessitate a regional framework which, if successful in its formulation and implementation, could well serve as an example of a framework designed to address context-specific energy security issues. One thing, however, is clear: energy security as a paradigm needs to continue to look beyond the state-centric framework in order to devise suitable measures which take into consideration human security issues, in order to ensure energy security in the long term.