

17 November 2009
Tuesday

8.30 am to 12.30 pm

Shangri-La Hotel
Katong Room
Orange Grove Road
Singapore 258350

Registration is FULL for
the dialogue through
www.singapore.iew.com.sg.

For enquiries, please call
Ms May Koh (ESI)
at 6516 6739 or
Ms Caroline Loke (Shell)
at 6215 1218.

ENERGY DIALOGUE



Shell-ESI Energy Dialogue Towards a New Energy Future How will Technology, Efficiency and Security Shape It?

The Energy Dialogue is organised to facilitate the exchange of knowledge and expertise straddling the economic, environmental, security, sociological and technological aspects of energy and discuss issues of interest to Singapore. This second dialogue in our series will be led by Shell's top business leader and chief scientist, and ESI's head of energy security and principal fellow.

Shell will present an overview of the available solutions to address the world's uncertain energy future, and how technologies and changes in habit can improve energy efficiencies. ESI will provide an overview of the energy security outlook at the centre of the supply chain. These talks will be followed by a panel discussion; addressing the question of whether technology holds the solution to the energy challenge and issues pertaining to energy efficiency.

Programme

8.30 am - 9.00 am	Registration
9.00 am - 9.10 am	Welcome and Introductory Remarks Mr Khoo Chin Hean, Executive Director, ESI
9.10 am - 9.40 am	Towards a New Energy Future: From Challenges to Solutions Mr Tan Chong Meng, Executive Vice President Global B2B, Shell
9.40 am - 10.10 am	Quest of Energy Security in the Emerging Multipolarity Dr Hooman Peimani, Head, Energy Security, ESI
10.10 am - 10.45 am	Coffee Break
10.45 am - 12.30 pm	Panel: How Will Technology, Efficiency and Security Shape the New Energy Future?
	Presentations Dr Sergio Kapusta, Chief Scientist - Materials, Shell (15 mins) Dr Michael Quah, Principal Fellow, ESI (15 mins)
	Discussion Members Mr Tan Chong Meng, Dr Hooman Peimani, Dr Sergio Kapusta, Dr Michael Quah
	Moderator Ms Jessica Cheam, Energy Correspondent, The Straits Times

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About the Presentations

“Towards a New Energy Future: From Challenges to Solutions” by Mr Tan Chong Meng

The world is heading for an inevitable energy transition to a new energy future. What can companies, communities and countries do to ensure a smooth transition? The challenge for the energy industry will be to help the world meet its mounting energy needs in economically, environmentally and socially responsible ways. It will have to do so by maximising the production of all available fuels, widening the energy mix and boosting the efficiency of energy use. The presentation will share how Shell is playing its part to do so.

“Quest of Energy Security in the Emerging Multipolarity” by Dr Hooman Peimani

Against a background of growing global consumption of energy, energy security is a key objective for all economies particularly those of large and growing ones. Despite the urgency of reducing greenhouse gasses for environmental purposes, the renewables (non-fossil energy) account for a fraction of the global energy consumption. There is no evidence to suggest any major change in this reality in the foreseeable future with the effect of ensuring reliance on fossil energy as the main source of energy. Within this context, the discovery of many new oil and gas reserves and the technological advancement enabling the extraction of fossil energy from previously impossible geographical regions have answered the question of the availability of adequate oil and gas, added to the existing large coal reserves, to meet global demands for at least a few decades. The remaining question is how the economic, political and military/security developments reflecting the consolidation of the multi-polar international system and a changing global economic outlook prompted by Asia's rising as the 21st century powerhouse will affect the quest for energy security of the major and growing energy consumers. Among other major players in Asia, Europe and the Americas, the activities of China and India will have a significant impact on the global energy markets, including the Southeast Asian one.

Panel: How Will Technology, Efficiency and Security Shape the New Energy Future?

Abstract of Presentation by Dr Sergio Kapusta

As one of Shell's Chief Scientists, Dr Kapusta works on applying research to solving problems encountered by engineers in the production of oil and gas. This might apply to drilling in deep waters or other harsh conditions, or recovering and storing gas on floating platforms far out at sea. The presentation will share insights in how technologies might be adapted from other spheres to help meet the energy challenge.

Abstract of Presentation by Dr Michael Quah

Energy futures cannot be discussed without the recognition that environmental concerns and sustainability challenges are integral to the debate and discussion. As such, in the long-term, we will have to go “back to the future” where renewable sources are paramount. How we transition from security concerns over fossil (and potable water) resources to that future of renewables must be envisioned and planned appropriately with an initial focus on conservation and energy efficiency programs. Technology innovations are an absolutely necessary but totally insufficient condition for our future success. How we develop “systems of systems” integration with spirit, creativity and passion for the planet will be important.

About the Speakers

Mr Tan Chong Meng, Executive Vice President, Global B2B, Shell

As Executive Vice President of Global Business-to-Business (B2B), Chong Meng manages 6 global businesses that sell fuels and speciality products to commercial customers, namely Aviation, Marine, Commercial Fuels, Bitumen, LPG and Sulphur. These businesses are headquartered in London and Singapore. Many of them are world leaders, eg, Shell Aviation which celebrated its centenary this year, has received the Armbrust Award for Top Aviation Refueler Worldwide most consistently over the last decade. The business spans 80 countries with a total sales volume of about 2 million barrels per day.

Chong Meng holds a non-Executive Director position on Showa Shell Japan where Shell owns 35% of the publicly listed subsidiary. He also serves as Independent Director on the board of Fraser and Neave Limited, a property and F&B company listed in Singapore.

Chong Meng acts as the Regional Business Director for Downstream in the East, overseeing the alignment among the global downstream business interests in the 18 Asia Pacific countries where Shell operates.

Dr Hooman Peimani, Head, Energy Security, ESI

Dr. Hooman Peimani is Head, Energy Security, at the Energy Studies Institute (ESI), National University of Singapore. Drawing on his years of work experience with academic, non-academic, private, public, national and international institutions in North America, Europe and West Asia, including UN agencies, he specializes in energy security, particularly relating to South and West Asia. Having over 20 years of research experience, his extensive publications include books, chapters in books, journal/newspaper articles, government/UN documents/reports and book reviews. He has also contributed as an expert to the publications of many news agencies (e.g., Reuters and United Press International) and/or been quoted by them. Since 1997, in the capacity of an expert in energy and security, he has made regular contributions to the programs and publications of *Radio Free Europe/Radio Liberty* and the programs of *Radio France Internationale* and *Deutsche Welle*.

Dr Sergio Kapusta, Chief Scientist - Materials, Nanotechnology Specialist, Shell

An Award-winning specialist in his field of advanced materials, Sergio leads a discipline that solves hard-engineering problems that have gone beyond the scope of even today's advanced steels, alloys and composite materials. The Materials team exists to help safely recover more of the world's oil and gas from existing fields, particularly enable oil and gas exploration at the frontier – which recently has meant ambient temperatures of -40°C or below, highly corrosive environments, or water depths of over 10,000 feet – and working on some of the largest and most innovative structures in energy exploration. It also means a strong focus on new ways to enhance energy efficiency and reduce emissions.

This has inevitably led Sergio into the field of nanotechnology – studying and manipulating things 10,000 times smaller than the width of a human hair – in a bid to harness the next generation of super-strong, super-light materials. Sergio currently leads Shell's in-house Nano team and a range of innovative partnerships, looking to eventually enter a world where pipelines repair themselves, and tiny nanobots might move through oil reservoirs to help recover more oil.

Dr Michael Quah, Principal Fellow, ESI

Dr. Quah has a PhD (1980), MPhil and MSc, all in chemical engineering from Yale University, and a BA (magna cum laude) in chemistry and physics, from Harvard.

He worked for the DuPont Company from 1979 to 1999, including stints with DuPont Japan and Singapore (1990-1993). At DuPont, Dr. Quah held positions in R&D, product and business development, and management. His technical work revolved around membrane technologies for reverse osmosis, gas separations, and electrochemical processes, the last area stimulating his interest in alternative energy innovations. When Dr. Quah worked for DuPont in North Carolina (1993-1999), he also served as Adjunct Professor in Chemical Engineering, at North Carolina State University. After early retirement from DuPont, he held management positions in several small commercial companies and in non-profit organizations, including a stint with the US Army.

Dr. Quah has lectured extensively in the following areas: Nafion* and perfluorinated ionomers for use in electrochemical systems (electrolysis, redox flow cells, and fuel cells), membrane separations, micro-grids, and energy/environmental sustainability.