



Joint ESI-ISEAS SEMINAR

Excerpts from a Technology Roadmap for Energy Security and Environment Sustainability

Date: Monday, 7 December 2009

Time: 10.30 am — 12.00 noon

Venue: Seminar Room II, ISEAS

About the Speaker

Dr Michael Quah Cheng-Guan

Principal Fellow
Energy Studies Institute
National University of Singapore



Dr Michael Quah Cheng-Guan, after a long career in industry, government, and NGO's, primarily in the United States, has accepted a position in Singapore at ESI/NUS as a Principal Fellow, beginning in October, 2009. He is also an Executive Advisor at the NUS Entrepreneurship Center and a Visiting Fellow at ISEAS. Michael also serves on the Board of Advisors for EnergyCarta.

Michael left Penang, Malaysia, after completing his A-levels in 1969 at St. Xavier's Institution. After undergraduate studies at Harvard University (magna in Chemistry and Physics) and M.S., M.Phil., and Ph.D. (Chemical Engineering, 1980) at Yale University, Michael spent nearly 20 years with E.I. du Pont de Nemours & Co., Inc., where he worked in R&D, product and business development, and management in Wilmington and Glasgow (Delaware), Tokyo (Japan), Singapore, and Fayetteville (North Carolina), and during that last assignment before early retirement from DuPont, he was an Adjunct Professor at North Carolina State University in Chemical Engineering. Other management positions after his 20-year DuPont career were with Lydall Technical Papers (New Hampshire), Ocean Power (California), and two non-profits: NextEnergy (Michigan) and Concurrent Technologies Corporation (Pennsylvania.) And in-between his industrial and non-profit jobs, Michael worked as an independent consultant and in R&D leadership roles in the US Army RDECOM/CERDEC at Fort Belvoir (Virginia.)

Michael has two grown children in Texas and Maryland; and he and his wife, Ruth, live in Michigan, from which he will shuttle back and forth to and from Singapore. Michael is a lector at his parish church in Farmington Hills, Michigan, and he is a member of the American Chemical Society and the Association of the US Army.

Energy Studies Programme



About the Seminar

When Dr Quah was a Visiting Principal Fellow at ESI, he presented an interim report on a work in progress in December, last year, at ISEAS. He has since completed his report and will discuss excerpts of the Technology Roadmap, which provides signposts and guardrails for a transition from the current dependence on fossil fuels to a far future when fossil fuels are prohibitively expensive to extract and process and thus, we will face a back-to-the-future scenario to the "Age of Renewables." Along this long road to the far future, near-term strategies for the next 10 years and mid-term scenarios for 10 to 50 years are discussed. Energy conservation and energy efficiency programs are paramount in the near-term because fossil fuels will continue to play a major role but carbon constraints will reveal the necessity for such programs. The need for high energy density fuels calls for a future where bio-fuels are needed with the requisite balancing act of land (and water areas) for food and fuel. Against a backdrop of the Singapore International Energy Week (just completed in 17 - 20 November), the Copenhagen Conference (7-18 December 2009), the possible depletion of world oil resources faster than expected (Straits Times, 11 November 2009) and extreme weather events (typhoons) impacting upon Southeast Asia, this seminar is most timely and will show the "middle way." This talk provides further elaborations on Dr. Quah's presentations at the Shell-ESI Dialogue and the Plug-In Singapore session at the recent Singapore International Energy Week.

You are cordially invited to the Seminar.