ENERGY STUDIES INSTITUTE
National University of Singapore

ESI Nuclear Governance Project
A multidisciplinary research project of the Energy Studies Institute

ESI Webinar

Opportunities and Challenges in Deploying Small Modular Reactors in ASEAN

Thursday, 3 September 2020
19:00 – 21:00 (Singapore Time, GMT+8)

Click Here for Online Registration

The need to sustain economic development amid global energy security worries – now compounded by highly uncertain oil prices and the devastation wrought by COVID-19 – means that policymakers must carefully evaluate options to future-proof against uncertainties. In practical terms, countries must meet rising energy demand caused by rapidly growing populations while minimising environmental damage. Moving from the concerns over the conventional large-scale nuclear power plant projects into the new decades, could advance small modular reactors (SMRs) bring new propositions to the Association of South East Asian Nations (ASEAN)?

ASEAN's pre-feasibility report on establishing NPPs in the regional bloc, released in 2018, reflects the region's collective ambition towards reaping the benefits of nuclear power by 2030 and 2050, especially among the regional frontrunners: Indonesia, Malaysia, the Philippines and Vietnam. Considering that the IAEA and ASEAN signed a number of Practical Agreements in 2019 to increase technical and scientific exchanges, it is only a question of when rather than if nuclear will enter ASEAN's energy mix. Now is the time for ASEAN to determine the success factors for nuclear energy deployment in the region. While safety, security and safeguards are of natural importance, the economics, financing, and many other practical aspects of nuclear power project developments are crucial for a successful civilian nuclear programme.

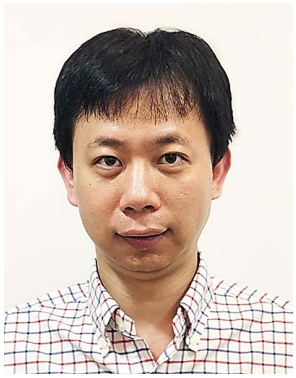
In this workshop, we aim to

- Bring together experts in the nuclear power industry to discuss the opportunities and challenges in making SMRs an economical option for decarbonisation.
- Facilitate experience exchange among participants in developing and promoting next generation SMRs for the global market.
- Establish relationship between the Energy Studies Institute and workshop participants for future collaboration in nuclear energy policy research.

Programme

19:00 – 19:10	**Welcome and Opening Remarks** Dr Victor Nian, Senior Fellow, Energy Studies Institute, National University of Singapore.
19:10 – 19:30	**Small modular reactors for deployments in urban and island states** Eddie M. Guerra, Senior Engineer, Arup and Co-Founder, The Nuclear Alternative Project.
19:30 – 19:50	**SMR project development, financing, and project delivery in ASEAN.** Paul M. Murphy, Founder and Managing Director of Murphy Energy & Infrastructure Consulting, LLC.
19:50 – 20:10	**The role of Government in the assessment and deployment of SMRs – The UK Model.** Amjad Ghori, Managing Director, AGIAS Advisory Limited.
20:10 – 20:30	**Management and governance of nuclear power plant projects for ASEAN countries** Giorgio Locatelli, Chair in Project Business Strategy, University of Leeds.
20:30 – 21:00	**Panel Discussion and Q&A**

Biography



Victor Nian

Dr. Victor Nian is a Senior Research Fellow at the Energy Studies Institute (ESI), National University of Singapore (NUS). Dr. Nian holds a PhD in Mechanical Engineering and a Bachelor in Electrical Engineering with a Minor in Management of Technology, all from NUS. At ESI, main focus of his research is on the peaceful and strategic use of atomic energy. He has been frequently featured in the media space on nuclear energy issues. His research portfolio also covers a wide spectrum of energy issues with focus on technology management and industrial policies. Some of the recent research projects under his leadership include carbon capture and storage, hydrogen economy, energy efficiency, HFC phase-down, and life-cycle techno-economic assessment of energy transition pathways. Dr. Nian is the founder and the Executive Director of UNiLAB on Integrated Systems Analysis Tools, which hosts a research network of more than fifteen academic and research organisations from around the world. He is also a Visiting Fellow at the University of Cambridge and an Adjunct Professor at Tianjin University of Commerce.

Dr. Nian is the Managing Guest Editor of Applied Energy Journal on "Integration of Renewable Energy in Energy Systems: Perspectives on Investment, Technology, and Policy" and Invited Editor of a book, entitled, "Advanced Security and Safeguarding in the Nuclear Power Industry: State of the Art and Future Challenges", https://www.elsevier.com/books/advanced-security-and-safeguarding-in-the-nuclear-power-industry/nian/978-0-12-818256-7.

Eddie M. Guerra

Eddie M. Guerra, P.E. is a senior engineer with Arup's energy group in Houston, Texas and the Co-founder of The Nuclear Alternative Project (NAP). Mr. Guerra has over a decade of civil engineering experience in nuclear projects in the U.S. and internationally. Among his notable projects, Mr. Guerra served in the design of the first Westinghouse AP1000 reactor in Sanmen China, served as the technical lead for the first group of post-Fukushima seismic risk assessments for nuclear plants in the U.S. and led the first U.S. DOE-funded feasibility study for Small Modular Reactors and Microreactors for Puerto Rico. In addition to his project experience, Mr. Guerra serves in committees for nuclear standards for the American Society of Civil Engineers, the American Society of Mechanical Engineers and the American Nuclear Society. He also serves as industry practice advisor for graduate students at the University of Puerto Rico-Mayaguez for the program on seismic design of nuclear infrastructure. He served as a member of the Civil Nuclear Trade Advisory Committee (CINTAC) which advices the U.S. Secretary of Commerce on the Competitiveness of the U.S. nuclear industry. Mr. Guerra holds a Bachelor of Science degree in Civil Engineering from the University of Puerto Rico and a Master's degree in Structural Engineering from Lehigh University. He holds professional engineering licenses in Pennsylvania, Texas and Puerto Rico.

Paul M. Murphy

Paul M. Murphy focuses on multiple aspects of the nuclear industry – from legal and policy matters, including international regulatory and treaty frameworks and issues regarding nuclear liability, to strategies for creating and financing nuclear power programs and the identification and mitigation of associated risks – representing governments, developers/owners, investors, lenders, and contractors on nuclear projects internationally. He is recognized as an expert in the development and financing of nuclear power programs by the International Atomic Energy Agency (IAEA), the OECD's Nuclear Energy Agency (NEA), the International Framework for Nuclear Energy Cooperation (IFNEC), and the US government.

Mr. Murphy regularly teaches financing, contracting, and project development for the IAEA, Argonne National Laboratory, and Texas A&M University for their international training programs. He has served (as a five-time appointee) to the U.S. Secretary of Commerce's Civilian Nuclear Trade Advisory Committee, and he serves on ASME's Clean Energy Technology Advisory Panel. He is also an Affiliate of Nuclear Economics Consulting Group.

Mr. Murphy is a graduate of Princeton University's Woodrow Wilson School for Public and International Affairs and a graduate of Harvard Law School.

For an extended profile for Mr. Murphy, please see: https://nuclear-economics.com/wp-content/uploads/2019/09/Paul-Murphy-full-resume-MEIC-Sept-2019.pdf.

Amjad Ghori

Mr. Amjad Ghori is a seasoned Financial Advisory Executive with more than 25 years of banking and development finance experience and a recognized expert in Nuclear and SMR financing. Mr. Ghori lead Financial Advisory teams in NPP transactions in Bulgaria, Lithuania and Finland during his 11-years as a Managing Director in Credit Agricole – CIB's ("CACIB") Structured Finance Advisory Group based in London.

Between January and June of 2018, Mr. Ghori was part of an Expert Finance Working Group (EFWG) comprising of private finance and nuclear industry experts brought together by UK's Business Energy and Industrial Strategy (BEIS) who were tasked with making recommendations to the UK Government on how best to mobilize private sector finance for the design, development and deployment of SMRs in the UK. The EFWG's findings and recommendations were then presented to the UK Government. (Market framework for financing small nuclear)

Mr. Ghori is a frequent lecturer on nuclear financing and has conducted several workshops for the IAEA in the USA, France, and Sri Lanka. In November 2019, he delivered a presentation on the challenges of SMR development and financing as part of IFNEC's Global Ministerial Conference convened in Washington DC. On June 9, 2020, he delivered a presentation on the role of the host Governments in the design, development, financing and deployment of SMRs as part of IFNEC's SMR Webinar series.

Mr. Ghori holds a Master of Arts from the Johns Hopkins University, School of International Studies (SAIS) and Bachelor of Arts from Boston College, USA. For an extended profile for Mr. Ghori, please see: https://nuclear-economics.com/wp-content/uploads/2018/07/Amjad-Ghori-CV-Jan-2018.pdf.

Giorgio Locatelli

Professor Giorgio Locatelli - Chair in Project Business strategy at the University of Leeds. Educated in Politecnico di Milano, has a Bachelor and Master in mechanical engineering (2006) and a PhD "Cum Laude" in Industrial engineering, economics, and management (2011). His research is about project management in large and complex infrastructure, particularly in the energy and nuclear sector. In this setting he focuses on governance, benchmarking, cost-benefit analysis, risk management, decommissioning, ethics & illegal practices, governance, financing, modularization. He attracted more than £1,000,000 of research founds.

Professor Locatelli also works as a consultant and visiting academic for several institutions, including the IAEA, the UK government etc. He is the author of more than 100 international peer-reviewed publications, with 1000+ citations in Scopus (h-Index 19) and 2000+ in Google Scholar (h-index 27). He sits in the editorial board of the three most prestigious project management journals: the "International Journal of Project Management", the "Project Management Journal" (where is a senior editor) and "Construction Management and Economics", plus "Progress in Nuclear Energy".