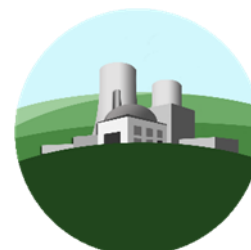


Nuclear Energy Forum: Considerations and Essential Information PROGRAM



MORNING SESSION	
8:00 – 9:00 AM	Registration
9:00 – 9:05 AM	Prayer and Philippine National Anthem Engr. Rosario S. Calderon Vice President, UP Engineering Research and Development Foundation, Inc.
9:05 – 9:15 AM	Opening Remarks Dr. Rizalinda L. De Leon Chairperson, Nuclear Energy Forum Steering Committee Dean, UP College of Engineering Executive Director, UP National Engineering Center Program Leader, Engineering Research and Development for Technology
9:15 – 9:25 AM	Message Sec. Alfonso G. Cusi Secretary Department of Energy
9:25 – 9:35 AM	Message Sec. Fortunato T. de la Peña Secretary Department of Science and Technology
9:35 – 9:45 AM	Message Hon. Sherwin T. Gatchalian Senator and Chairperson Senate of the Philippines Committee on Energy
9:45 – 10:05 AM	Philippine Power Development Plan and Status of Renewable and Fossil Based Power Sources USec. Felix William B. Fuentebella Undersecretary Department of Energy
10:05 – 10:15 AM	Break
10:15 – 10:45 AM	International Atomic Energy Agency (IAEA) Framework and Infrastructures Mr. José Bastos Nuclear Power Infrastructure Development Section International Atomic Energy Agency
10:45 – 11:15 AM	Nuclear Policy and Technology Across the Globe Dr. Ahmed Y. Abdulla Post-doctoral Fellow, University of California San Diego Assistant Professor, Carnegie Mellon University
11:15 – 11:35 AM	Philippine Nuclear Regulatory Framework and Other Applications Dr. Carol M. Yorobe Undersecretary Department of Science and Technology
11:35 – 12:00 NN	Open Forum Moderator: Dr. Allan C. Nerves Professor, UP Electrical and Electronics Engineering Institute
12:00 – 1:00 PM	LUNCH
AFTERNOON SESSION	
1:00 – 1:30 PM	Country Experience on Nuclear Power (Speaker from each country will cover nuclear policy, operating experience, regulation, safeguards, emergency response, and technology) Nuclear Energy Program Implementing Organization (NEPIO) and Philippine Government Plan for Nuclear Policy

	<p>USec. Donato D. Marcos Undersecretary Department of Energy</p>
1:30 – 2:00 PM	<p>NPP Construction/Operation and Nuclear Technology Development: Experience from South Korea</p> <p>Mr. Jeong Kwang-Hee General Manager Global Business Planning and Administration Team Global Nuclear Business Department Korea Hydro and Nuclear Power Co., Ltd. (KHNP)</p>
2:00 – 2:30 PM	<p>Integrated Offer of ROSATOM in Nuclear Energy</p> <p>Mr. Anton V. Moskvin Vice President for Marketing and Business Development Rosatom Overseas, Russia</p>
2:30 – 3:00 PM	<p>Decommissioning and Radioactive Waste Disposal: The Case of Germany</p> <p>Dr. Miranda A. Schreurs Professor, Environment and Climate Policy Bavarian School of Public Policy Technical University of Munich</p>
3:00 – 3:30 PM	<p>Open Forum</p> <p>Moderator: Dr. Alvin B. Culaba Professor, De La Salle University</p>
3:30 – 3:40 PM	Break
3:40 – 4:10 PM	<p>Nuclear Safety, Emergency Planning, Safeguards and Security and Physical Protection: Japanese Experience</p> <p>Mr. Akio Toba Executive Director JAIF International Cooperation Center</p>
4:10 – 4:40 PM	<p>Human Resource, Radioactive Waste, and Industry and Stakeholders' Involvement in the United States of America</p> <p>Dr. Ahmed Y. Abdulla Post-doctoral Fellow, University of California San Diego Assistant Professor, Carnegie Mellon University</p>
4:40 – 5:10 PM	<p>Regulatory & Legislative Framework in compliance to European Directives and WENRA recommendations: Experience from France</p> <p>Mr. Jorge Luis Hernandez International Project Developer Business Unit of International Commercial Development Institut de radioprotection et de sûreté nucléaire Institute for Radiological Protection and Nuclear Safety</p>
5:10 – 5:40 PM	<p>Open Forum</p> <p>Moderator: Dr. Rinlee Butch M. Cervera Assistant Professor, UP Department of Mining, Metallurgical and Materials Engineering</p>
5:40 – 6:00 PM	<p>Synthesis</p> <p>Dr. Mili-Ann M. Tamayao Deputy Executive Director UP National Engineering Center</p>
6:00 – 6:10PM	<p>Closing Remarks</p> <p>Engr. Pedro H. Maniego, Jr. Chairman UP Engineering Research and Development Foundation, Inc.</p>

Dr. Joseph Gerard T. Reyes
Dr. Leslie Joy L. Diaz
Master of Ceremonies

Nuclear Energy Forum: Considerations and Essential Information CONCEPT NOTE



It is envisioned that this Forum will be the first of comprehensive and fact-based discussions and analyses surrounding the issue of integrating nuclear power into the Philippine energy mix.

The Philippines has one of the highest electricity rates in Asia and it has recently ratified the COP21 where it pledged a target for carbon emissions reduction. The Department of Energy also reports that with the absence of increase in capacity, the country may face significant energy problems given continued economic growth. Nuclear power is seen as a pathway to sustainable energy provision due to its competitive leveled cost of electricity, low carbon footprint, and base load contribution.

However, as Abdulla and Morgan (2017)¹ wrote in their piece, “Nuclear Power for the Developing World,”

“...nuclear power raises deep misgivings among many decision makers and ordinary people. Concerns about safety have been rekindled by the Fukushima Daiichi nuclear disaster in Japan. There are also long-standing worries over proliferation and spent fuel management.”

and

“Few developing countries have, or are able to develop, the capacity to respond appropriately to a major accident. While commercial suppliers might adopt a BOOR approach, it seems most unlikely that they would include a full-scale emergency response as part of the package.”

Speculations over the rehabilitation of the highly controversial and lone nuclear power facility of the Philippines, the Bataan Nuclear Power Plant (BNPP), has sparked national debate that is hoped to result in definitive steps towards a resolution of this three-decade issue. As pointed out by Tamayao (2017)²,

“... although the plant has been fully paid for, the country continues to spend for plant upkeep amounting to PhP 24M to P50M³ annually... The government’s decision on BNPP utilization, in particular, and nuclear energy adoption, in general, will have a long-term impact on the country. This policy decision is one that is best resolved using well-researched and careful technical analysis.”

This national policy conundrum calls for technological and scientific expertise. Factual information as well as careful consideration of public perception must inform political debates and ultimately, decision making at the national level. The National Engineering Center (NEC) in collaboration with the UP Engineering Research Development Foundation Inc. (UPERDFI) and the Engineering Research and Development for Technology Program (ERDT) will conduct the Nuclear Energy Forum: Essential Information and Considerations. The Forum aims to inform the public on essential facts and experiences from other countries regarding nuclear power and to provide an avenue for discussion on key considerations with an overall goal of assisting the government in formulating a nuclear energy policy for the Philippines.

The program was developed to include the 19 Nuclear Infrastructure Issues under the Milestone Approach developed by the International Atomic Energy Agency based on best practices across the world⁴. To complete the life cycle, the German decommissioning and spent fuel disposal experience was also included. To contextualize the need for this nuclear power discussion, decision makers from key agencies including the Department of Energy, Department of Science and Technology, and the Senate Energy Committee were invited to talk on electric energy planning, the nuclear regulatory framework, and the legislative process related to nuclear power, respectively.

¹ Abdulla, A. and Morgan, G. 2017. Nuclear Power for the Developing World. Issues in Science and Technology Winter 2015:55-61.

² Tamayao, M.M.. 2017. Planning for Nuclear Energy Forum: Evidence-based, multi-sectoral discussion of nuclear energy use in the Philippines.” National Engineering Center. University of the Philippines, Diliman, Quezon City. Accessible at: www.upnec.com

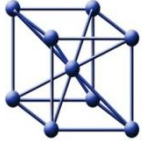
³ Values vary across different sources

⁴ International Atomic Energy Agency. 2017. The IAEA Milestone Approach. accessible online: <https://www.iaea.org/NuclearPower/Infrastructure/milestone/index.html>

Nuclear Energy Forum: Considerations and Essential Information PROFILE OF THE ORGANIZERS



National Engineering Center



The National Engineering Center (NEC) was established on January 27, 1978 as a distinct and separate unit of the University of the Philippines (UP) by virtue of Presidential Decree No. 1295. The creation was a response to the country's continuing efforts at national development, which require progressive and adequate utilization and diffusion of technology, as well as a steady and expanding supply of technical manpower with expertise in the various fields of technology and engineering. The NEC was envisioned to provide a venue for continuing interaction among government, industry, and the university which will be beneficial to all concerned and, at the same time, serve the interests of national development.

The NEC is mandated to provide experts to whom public and private entities may turn for assistance in the solution of engineering problems and to develop technologies that utilize local resources that are adapted to the needs of a developing country.

Engineering Research and Development for Technology



The Engineering Research and Development for Technology or ERDT is a human resource development project funded by the Philippine government through the Department of Science and Technology. It is implemented through a consortium of universities. Ateneo de Manila University, Central Luzon State University, De La Salle University, Mapua Institute of Technology, Mindanao State University – Iligan Institute of Technology, University of the Philippines Diliman and Los Baños and University of San Carlos constitute the consortium.

The ERDT is created to deliver high impact researches aligned with the country's National Science and Technology Plan (NSTP) and the Medium-Term Development Plan (MTDP), to attain a critical mass of MS and PhD graduates, to upgrade the qualifications of practicing engineers, and to develop a culture of Research and Development).

UP Engineering Research Development Foundation Inc. (UPERDFI)



Founded in 1972, the UPERDFI is a non-stock, non-profit private foundation that is committed to support the UP Diliman College of Engineering (UPDCOE) and the National Engineering Center by generating financial resources; managing endowment funds; enabling professorial chair awards and faculty grants; administering student scholarships, grants, awards and project financial support; administering financial and in-kind donations for buildings, classrooms and research/instructional laboratories; and advocating for and facilitating linkages with government and industry that focus on research and academics.

It has 128 members who are mostly UPDCOE alumni, and works hand in hand with the UP Alumni Engineers Association, Inc. (UPAE) in mobilizing support from individuals and corporations.