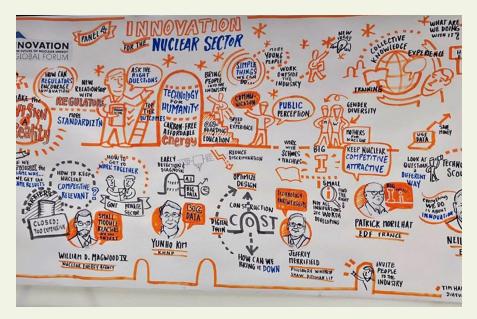
Current and future nuclear energy leaders issue call to action for innovation



Over 250 nuclear industry leaders, regulators, researchers, government representatives and technology providers have issued a 'call to action' to accelerate the use of innovative solutions to sustain and advance the current operational fleet of nuclear power plants (NPPs) around the world. The 'call to action' emphasizes the four innovations identified by the participants of the three-day Global Forum on Innovation for the Future of Nuclear Energy, co-organized by the IAEA and held from 10 to 12 June in Gyeongju, the Republic of Korea.

The key goal of the event was to tackle the most urgent challenges facing the nuclear sector and to examine barriers and opportunities for deploying innovative technological and process solutions to maintain or even enhance nuclear safety while reducing costs. For this, the participants highlighted 28 innovations related to various aspects of operating the current NPP fleet, topped by the following four:

- 1. Digital twinning (the virtual recreation of a process into a computer-based model) to improve NPP performance and to reduce costs;
- 2. Advanced manufacturing, including 3D printing, to address supply chain challenges;

- 3. Machine learning to make better use of the big data already available in the nuclear power sector for optimizing maintenance; and
- 4. Using more innovative frameworks for information exchange, to share data on research and development, operations and maintenance.

The 'call to action' forms the basis of developing actionable items for deployment and implementation beyond the event itself.

The forum was co-organized by the IAEA, the Electric Power Research Institute (EPRI), the United Kingdom's National Nuclear Laboratory (NNL), the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (OECD/NEA) and the Korea Hydro & Nuclear Power Company (KHNP), which hosted the event.

"The nuclear industry is a vital part of the global energy mix, in particular to address climate change because it's a zero-carbon energy source," said Neil Wilmshurst, EPRI Vice President and Chief Nuclear Officer. "This unique forum prioritized critical innovations needed in the nuclear industry, came to an understanding of the barriers and committed to working together to eliminate them."

The event's participants, from early career professionals to industry leaders, were guided by the following: to collaborate, foster change, disrupt and make a difference within their respective organizations — and across the nuclear sector. Sessions focused on topics such as the challenges facing innovation in the nuclear sector today and successful examples of nuclear innovation. A roundtable discussion held with regulators, facilitated by Director-General William D. Magwood, IV of OECD/NEA, provided perspectives from leaders in the field.

"The effective support from the younger generation of nuclear professionals, working in tandem with management, is an inspiring sign that innovation will be driven by the combined dynamism and engagement of current and future leaders," said Ed Bradley, Team Leader for NPP Operation and Engineering Support at the IAEA's Department of Nuclear Energy.

Joan Knight, Innovation Director at Exelon and Chairperson of a discussion session at the forum, added: "I'm pleased to be part of an effort that advances more powerful practices of innovation across the nuclear sector and to shape attitudes that are supportive of related activities."

The event was the first of its kind between the co-organizing institutions and was facilitated by meetings on innovation held in Vienna in 2018 and 2019. Similar forums are expected to take place in the future as platforms for sharing progress on relevant actions, meeting new challenges, strengthening collaboration and fostering new partnerships.

"We are delighted to host the next Global Forum in 2020," added Rob Whittleston, Vice President of NNL, during the closing ceremony.

— By Marianne Nari Fisher and Vincent Roué