

A Partnership to Drive Decarbonization with Nuclear Power

By Chris Warren

If you listen to the talk in some circles, you could assume that nuclear power is circling the drain. But if you look at what people are doing, there's a strong case being made for nuclear to play a critical role in creating a carbon-free economy.

"Look at the United Kingdom. They are building new nuclear power plants—and creating a market that supports new plant construction—and also building a lot of wind farms and solar. China is talking about doubling its generation and transmission capacity, and nuclear is part of the strategy along with renewables," said EPRI Vice President and Chief Nuclear Officer Neil Wilmshurst. "In Japan, even after Fukushima, the government is talking about 30 percent nuclear in the future. The nuclear industry in North America has challenges, but around the world it is playing a critical role in addressing climate change."

All of this raises this question: What is critical to the success of this new wave of nuclear power? The answer is accelerated innovation, which has been hampered by a lack of collaboration among nuclear power companies, regulators, and governments. "If you bring industry, regulators, and governments together, there's a much greater likelihood that you can come to a common understanding about the barriers to innovation and commit to working together to eliminating them," said Wilmshurst.

Enter the [memorandum of understanding \(MOU\) between EPRI and the Nuclear Energy Agency \(NEA\)](#) to advance global nuclear research. Within the framework of the Organisation for Economic Co-operation and Development, the NEA facilitates cooperation among its 33 member countries to help implement safe, economical, environmentally sound nuclear power. Signed in 2017, the five-year MOU aims to help the NEA and EPRI better understand and prioritize nuclear energy research needs, including the perspectives of nuclear utilities, governments, and regulators in research priorities.

"The NEA has traditionally worked more with government and regulators, while EPRI is a globally recognized and sought-after resource for the nuclear industry," said Wilmshurst. "This agreement strengthens NEA's connection with the industry. We have all this technical knowledge of what is possible with nuclear. If regulators and governments can better understand the innovation possibilities, they are more likely to work productively with the industry to advance nuclear power development."

"The evolution of nuclear technology is an integral part of global safety," said NEA Director-General William D. Magwood, IV. "The sector has to evolve. While meeting all required levels of safety, nuclear plants must be more flexible and cost-efficient in order to meet societal needs. EPRI understands the existing and emerging challenges of nuclear plant operations. Its collaborative research activities complement the scope and relevance of our work. As such, EPRI and the NEA can together address the technical and strategic challenges of bringing new technologies to market as required for the safe and effective use of nuclear energy."

The MOU enables EPRI and the NEA to develop joint events, seminars, workshops, and training. It facilitates exchange on research activities in various fields of nuclear energy, including safety, operational experience, waste management, economic analysis, and technology development. This includes topics such as the development of accident-tolerant fuel.

"Through this partnership, EPRI and the NEA can also effectively engage public and private stakeholders to adopt a collective approach to solving identified common issues, while respecting their respective natures and obligations," said Magwood. "For example, we are currently leading efforts to ensure the worldwide availability of a material and fuel testing facility, a key concern for both regulators and industry."

In June 2019, EPRI and the NEA—along with the International Atomic Energy Agency, Korea Hydro & Nuclear Power, and the United Kingdom’s National Nuclear Laboratory—are organizing the [Innovation for the Future of Nuclear Energy](#) forum in South Korea. The event will convene utility leaders, regulators, academic researchers, policymakers, and entrepreneurs from other industries.

Participants will learn how other industries overcame barriers to innovation, identify ready-to-use or almost-ready innovative technologies for deployment, develop consensus on promising areas deserving more attention, and lay the foundation for continued collaboration following the forum. “This is the starting point,” said Wilmshurst. “We will build on what we learn at the forum to help nations harness nuclear power to achieve their energy and climate goals.”