

Advanced Nuclear: A Look Back at 2015



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Away from most of the headlines, advanced nuclear innovation earned its first meaningful support from Washington in 2015. This included significant steps by the White House, Department of Energy, and Congress to increase access to federal resources for nuclear innovation and initial steps by Congress and the Nuclear Regulatory Commission to improve the licensing process for advanced reactors.

This marks an enormous shift from early 2014, when Third Way first began our work on advanced nuclear technology. Then, Washington regarded this field as a mere smattering of high-concept projects. Instead, Third Way found nearly 50 companies, backed by \$1.5 billion in private capital, seeking to harness the enormous potential of advanced nuclear energy to reduce carbon emissions and meet rising global energy demand. What we found these companies needed most was progress in Washington, and in 2015 they started to get it.

Of course, it was just a start. Ultimately, advanced nuclear developers will need a public-private test center to conduct experiments and build prototypes, as well as a pathway for

predictable, affordable, and transparent licensing of new reactor designs. Still, the progress in 2015 marked an important step toward maintaining nuclear innovation in the United States. It included, among other things:

White House Hosts First Summit on Nuclear Energy

- In November, the White House hosted the first-ever Summit on Nuclear Energy. On a panel moderated by Third Way President Jon Cowan, the Administration announced a new initiative to support nuclear innovation to “ensure that nuclear power remains a vibrant component of the United States’ clean energy strategy.”¹

Nuclear Included in the Global Climate Agreement

- The Obama Administration fought for nuclear to be included in the Paris climate negotiations and secured a final agreement that encourages a technology-neutral approach to addressing climate change. This marks a significant shift—the global community has finally accepted the use of *all* zero-emitting technologies, including nuclear, to fight climate change.²

Bipartisan Congressional Action backs Nuclear Innovation

Congress, both Republicans and Democrats, advanced a series of bills in both chambers encouraging DOE to support the R&D efforts of America’s advanced nuclear entrepreneurs. This action includes:

- The Senate Energy Committee overwhelmingly passed a proposal, backed by Chair Lisa Murkowski (R-AK) and Ranking Democrat Maria Cantwell (D-WA) that, among other things, requires the Secretary of Energy to report on the capability of the DOE to host privately funded fusion and fission reactor prototypes and ways that the DOE laboratories can support privately funded advanced nuclear entrepreneurs.³

- The House passed the America COMPETES Reauthorization Act, which included support for the Secretary of Energy to develop an advanced reactor innovation test bed that could enable the construction of privately funded reactor prototypes. ⁴
- The House Science Committee began consideration of the bipartisan Nuclear Energy Innovation Capabilities Act, which directs the DOE to prioritize R&D infrastructure that will enable private sector investment in advanced reactor technologies. The proposal was introduced by Energy Subcommittee Chair Randy Weber (R-TX) and is co-sponsored by members on both sides of the aisle, including Science Committee Ranking Member Eddie Bernice Johnson (D-TX). ⁵

Department of Energy Expands Resources for Nuclear Innovators

- At the White House Nuclear Summit, the Department of Energy (DOE) announced the Gateway for Accelerated Innovation in Nuclear (GAIN), which will make DOE's facilities, scientists, laboratories, and knowledge more accessible to entrepreneurs and scientists working to create the next generation of nuclear reactors. This includes making a nuclear energy infrastructure database available to companies, providing them assistance in navigating the regulatory process, and creating a voucher program that will give financial awards to entrepreneurs to help pay for the work they do at DOE's labs. ⁶

Creating an Efficient Licensing Process for Advanced Reactors

- Acknowledging the differences between today's light water reactors (built by established manufacturers) and tomorrow's advanced reactors (being developed by startup companies and others), the NRC and DOE held their first joint public workshop to consider how to license advanced non-light water reactors for commercial use. This workshop focused on ways the federal government could make the licensing process more efficient and responsive to new reactor designs, a process that will continue in the spring of 2016 with a second workshop.⁷

Advanced Nuclear Qualifies for Loan Guarantees

- The Obama Administration opened its \$12.5 billion loan guarantee solicitation for nuclear energy projects to advanced reactor construction and design certification, which is a necessary part of the licensing process. This sets an important precedent for advanced nuclear technologies, making them eligible for the DOE loan guarantee program once they are ready for commercial deployment.⁸

Continuing Progress for Small Modular Light Water Reactors

- The Administration reiterated its support for Small Modular Reactors (SMRs), with a new commitment to make computing tools available to SMR developers and investment in the licensing of the first SMR design application, expected to be submitted to the NRC in 2016.⁹

Advanced nuclear's progress in 2015 shows that there is growing awareness of the vital role that this technology can play in providing reliable, scalable, clean, and affordable energy for a world dealing with growing energy demand and climate change. The next step is just as important. The pace of progress must continue to grow in coming years for advanced nuclear to meet its promise and be developed and commercialized in the United States.

END NOTES

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- 7.** United States, Nuclear Regulatory Commission, “NRC-DOE Advanced Non-Light Water Reactors Workshop,” November 19, 2015. Accessed January 14, 2016. Available at: <http://www.nrc.gov/public-involve/conference-symposia/adv-rx-non-lwr-ws.html>.
- 8.** United States, Executive Office of the President, Office of the Press Secretary, “Obama Administration Announces Actions to Ensure that Nuclear Energy Remains a Vibrant Component of the United States’ Clean Energy Strategy.”
- 9.** United States, Executive Office of the President, Office of the Press Secretary, “Obama Administration Announces Actions to Ensure that Nuclear Energy Remains a Vibrant Component of the United States’ Clean Energy Strategy.”