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Coal-dependent Kentucky considers nuclear with help of GAIN and an NCSU Student

By Donna Kemp Spangler
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Last year, Bill Gates was speaking at the [Nuclear Energy Assembly's](#) virtual conference about his company's plans to build an advanced reactor in Wyoming.

Julian Colvin, a 22-year-old nuclear engineering student at North Carolina State University, was listening and posted a question in the chat: "I'm Julian. I go to NC State, and I wonder what a state like Kentucky could do to attract advanced nuclear projects?"

Colvin, a passionate advocate of nuclear energy, wasn't really expecting a response. "I was sort of half hoping Bill Gates, or some other business tycoon, would see my message and offer some great advice. In the end, I think the response I got was much better," he said.

That response came from another attendee, Christine King, director of the U.S. Department of Energy's Gateway for Accelerated Innovation in Nuclear ([GAIN](#)).

King, a North Carolina State alum, responded in the chat, asking Colvin to contact GAIN, which is led by Idaho National Laboratory.

"I told him to call me, and we would try to help," King said. "After all, GAIN has been working with the states for several years. While Kentucky wasn't one of our engagements at that time, I thought we could share how we do it and see what connections he could make. We were willing to help him get started. He really did the rest."



Julian Colvin and Christine King at a workshop in Kentucky

King introduced Colvin to the staff at [Envoy Public Labs](#), a national market research and stakeholder engagement firm. They advised him on how energy markets work and what other states have done to pave the way for advanced reactor deployment. They also suggested he contact energy policy influencers in Kentucky.

Colvin's research led him to the [Kentucky Office of Energy Policy](#) and key lawmakers. He spent nearly three months exchanging emails with state executives and members of the Kentucky General Assembly before they finally agreed to meet with him.

"He was persistent," said Kenya Stump, the Office of Energy Policy director. She eventually agreed to meet with Colvin, inviting King, Sen. Danny Carroll and Rep. Melinda Prunty, to discuss ways to engage policymakers and utilities about advanced nuclear energy. The meeting was scheduled for 30 minutes but lasted well over an hour as enthusiasm for Colvin's ideas grew.

"It was like a switch flipped," Colvin said.



Participants at the workshop included Sen. Danny Carroll (far right), Kenya Stump (center) GAIN Director Christine King and Deputy Director Andy Worrall and state leaders in Kentucky

It resulted in a partnership between Kentucky's Energy Office and GAIN to host a series of webinars with utilities to discuss what a clean energy transition would look like in the Bluegrass state. At a June 29 workshop utility executives, state government leaders and elected officials brainstormed ways to pursue nuclear energy as an option.

In 2017, Carroll championed legislation to lift Kentucky's moratorium on nuclear energy. Other states eventually followed. This year,

nine states passed laws removing barriers and opening doors for advanced nuclear energy. Similar laws were passed in Wyoming, which paved the way for Gates' TerraPower to build its Natrium plant in Kemmerer, where the coal-fired Naughton power plant is set to close in 2025.

Colvin's efforts in Kentucky have created a statewide conversation that is growing support for nuclear energy in this historically coal-dependent state.

His passion for nuclear is driven not only by visions of a carbon-free future but also by enthusiasm for advanced nuclear energy technology. Advanced nuclear reactors are cheaper to manufacture, safer and more reliable than previous designs, and built in ways that address fuel storage concerns, he wrote in a published [opinion](#) in Louisville’s Courier Journal.

The native Kentuckian will get a close-up view of his nuclear future in 10 months when he commissions as an officer in the U.S. Navy, where he will learn about the nation’s nuclear-powered naval fleet. He plans to return to his home state with a stronger commitment to make Kentucky’s first nuclear power plant a reality.

“I see so much potential in advanced nuclear technology as a clean, safe and affordable energy source, and I want to play a part in transitioning the Commonwealth from our traditionally carbon-heavy sources of electricity to cleaner, safer nuclear power,” Colvin said.

“I want Kentucky to be a safe, healthy, affordable place to live, and that’s ultimately what motivated me to send that message at the Nuclear Energy Assembly last year.”

About Gateway for Accelerated Innovation in Nuclear

DOE’s Office of Nuclear Energy established GAIN to provide the nuclear community with access to the technical, regulatory, and financial support necessary to move innovative nuclear energy technologies toward commercialization while ensuring the continued safe, reliable, and economic operation of the existing nuclear fleet. For more information, visit www.gain.inl.gov. Follow us on social media: [Twitter](#), [Facebook](#), [Instagram](#) and [LinkedIn](#).

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