

Webinar Invite

Join us on July 27, 2021, 8:30 am EDT (UTC-4)

Evaluating Changing Paradigms Across the Nuclear Industry

Dr. Lovering's recent work focuses on microreactors (SMRs <10MWe), trying to understand the pathways to commercialization and economic competitiveness. To understand their potential, a techno-economic evaluation of microreactors for off-grid and community microgrid applications was first performed. The results indicate that microreactors can be cheaper and more reliable compared with 100% renewables systems, and they can also be cost-competitive with diesel where fuel costs are greater than \$1/liter and the microreactor capital cost is less than \$15,000/kW. However, the levelized cost of electricity (LCOE) for microreactors is most sensitive to the initial capital cost, and whether this technology will ever move beyond niche markets will depend on the learning effects accrued through factory fabrication. Therefore, the hypothetical trade-offs between economies of scale and economies of volume for potential factory-fabricated microreactors are also examined. The break-even volumes necessary for microreactors to become cost-competitive with large reactors and with fossil fuels, using parameters from historic nuclear builds and analogous energy technologies are calculated. Drawing from the literature on learning rates across energy technologies, potential learning rates for various sized microreactors based on historical relations are predicted.

Free webcast!



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Who should attend:
R&D people, NDE operators, Nuclear regulators, Managers, Students, General public



Dr. Jessica Lovering is the co-founder of the Good Energy Collective, a new organization working on progressive nuclear policy. She recently completed her PhD in Engineering and Public Policy at Carnegie Mellon University. Her dissertation focused on how commercial nuclear trade affects international security standards and how very small nuclear reactors could be deployed at the community level. She is a Fellow with the Energy for Growth Hub, looking at how advanced nuclear can be deployed in sub-Saharan Africa. She was formerly the Director of the Energy Program at the Breakthrough Institute, a pioneering research institute changing how people think about energy and the environment. Her work at Breakthrough sought policies to spur innovation in nuclear power technologies to drive down costs and accelerate deployment as part of a solution to climate change and economic development. She received a Bachelor's degree in Astrophysics from the University of California Berkeley and a Master's degree in Energy Policy from the University of Colorado.

Upcoming Webinars

26 August 2021
Comparing and Contrasting Approaches to Quality Assurance for Nuclear Applications, Mr. Vince Chermak, INL, USA

23 September 2021
Experimental R&D in Russia to justify Sodium Fast Reactors, Dr. Uukyzina, IPPE

28 October 2021
Nuclear Waste Management Strategy for Molten Salt Reactor Systems, Dr. John Vienna, PNNL, USA