

Maine Joint Committee on Energy, Utilities and Technology – Chair Lawrence & Chair Sachs
LD 342 Testimony – FOR
March 13, 2025

- Good afternoon and thank you to Chair Lawrence & Chair Sachs, and the Committee for the opportunity to express our support for LD 342. My name is Kati Austgen; I'm a nuclear engineer and Director of Public Engagement & New Nuclear at the Nuclear Energy Institute, or NEI. NEI is the nuclear energy industry's premier trade group, representing 345 members from all facets of industry, universities, research laboratories, and labor unions.
- NEI applauds the bill sponsors for introducing this bill and recognizing the opportunity to plan for Maine's use of nuclear among our clean energy resources. Currently, nuclear energy provides 100 GW of emissions-free electricity across the U.S. Nuclear energy is also reliable – operating 24/7/365 – with greater than 90% capacity factor over the last 20 plus years. This provides energy security for communities around the clock, in the cold of winter and the heat of summer.
- Looking to the future, more than 90% of today's nuclear energy facilities are planning to extend their operational lifetime to at least 80 years, and there are over 25 new nuclear projects planned or considered in 16 states with another half dozen in Canada. Additionally, there is global interest in deploying new nuclear energy as evidenced most recently at the 28th Conference of the Parties (COP28) by the leaders of 24 countries signing on in agreement to triple nuclear energy worldwide by 2050.
- In a recent study, Vibrant Clean Energy¹ found that pairing nuclear with wind and solar is the most cost-effective means to decarbonize electricity generation. This lowest cost scenario projects nuclear energy could provide nearly 43% of all generation in 2050 with wind and solar producing almost 50%. A significant portion of the anticipated 300 GWe of advanced nuclear capacity that is needed could repurpose hundreds of fossil generation sites. A second scenario, where nuclear energy is constrained, would result in over \$400 billion in higher costs to consumers.
- Nuclear energy's affordability is further illustrated in a report published by Bank of America Global Research on "the nuclear necessity," in which they

¹ <https://www.vibrantcleanenergy.com/wp-content/uploads/2022/06/VCE-NEI-17June2022.pdf>

describe metrics of affordability.² Many are familiar with the term levelized cost of electricity (LCOE) a measure of an energy source's lifetime costs divided by energy output and a common standard for comparing different energy projects. When LCOE analyses accurately compare technologies with similar functions – as the U.S. Department of Energy Pathways to Commercial Lift-off: Nuclear³ report or Kutak Rock⁴ have done looking at clean, firm generation technologies we see that small modular reactors (SMRs) are certainly a cost-effective option. Moreover, when accounting for the full system costs that include balancing and supply obligations nuclear appears to be the cheapest scalable, clean energy source by far. While initial capital costs for nuclear may be high, energy payback, as measured by the “energy return on investment” (EROI), is in a league of its own. EROI measures the quantity of energy supplied per quantity of energy used in the supply process.

- Thank you for your time. I would be happy to share more about nuclear energy at the Committee's discretion.

² <https://advisoranalyst.com/wp-content/uploads/2023/05/bofa-the-ric-report-the-nuclear-necessity-20230509.pdf>

³ https://liftoff.energy.gov/wp-content/uploads/2024/10/LIFTOFF_DOE_Advanced-Nuclear_Updated-2.5.25.pdf

⁴ <https://www.kutakrock.com/-/media/files/news-and-publications/publications/2023/november/what-is-the-cost-of-carbon-free-baseload-power-a-c.pdf?rev=c95fe2528d5b4192b964f2526f2f1bd1&hash=2EB975AE7C06A83A6670F7D4858E3A4A>