

Washington State’s First of a Kind Initiative

The state of Washington’s commitment to cutting greenhouse gas emissions was cemented when Governor Jay Inslee signed the [Clean Energy Transformation Act](#) in 2019. The law applies to all electric utilities serving retail customers and sets specific milestones to reach a 100% clean electric supply by 2045 using renewable or non-emitting generating sources. Consequently, this rulemaking left utilities with two key questions:

1. What are optimal electricity portfolios to achieve deep decarbonization in the Pacific Northwest?
2. How does the availability of different zero-emitting generation technologies, like advanced nuclear energy, affect the cost of achieving deep decarbonization?

A [2020 study conducted by E3](#) concluded that utilities could achieve very deep electric emission reductions at manageable costs, provided firm generating capacity is available. Using data from NuScale Power and the National Renewable Energy Laboratory, the study found the use of advanced reactor technologies could competitively help achieve a zero-emissions energy portfolio.

To meet its future energy needs, Energy Northwest, which provides at-cost power to public utilities across the northwest, began exploring options to develop advanced reactor projects. Considering Energy Northwest’s experience with nuclear power, it is in an excellent position to launch a new generation of nuclear energy.

In late 2020, the U.S. Department of Energy (DOE) made two awards to X-Energy and TerraPower under the Advanced Reactor Demonstration Program to build two advanced nuclear reactors that will be operational within seven years. Under the agreement, DOE will invest a total of \$3.2 billion over seven years for TerraPower and X-energy to demonstrate their advanced reactor designs. TerraPower’s [Natrium](#) technology, a sodium-cooled fast reactor coupled with a molten salt energy storage system will demonstrate nuclear load-following capabilities (See Wyoming Case Study). X-energy’s [Xe-100 advanced reactor](#), a high temperature gas-cooled reactor, will demonstrate Tri-structural Isotropic fuel technology and jump-start fuel cycle investments. Under the ARDP agreement, Energy Northwest will serve as a utility partner for both of these projects and will also provide licensing assistance for both designs. Energy Northwest will also provide operating experience to the TerraPower-GE Hitachi team.

In April 2021, X-energy, the Grant County Public Utility District (Grant PUD), and Energy Northwest [announced their partnership](#) to evaluate, develop, and build four Xe-100 reactors, at the Columbia Generating Station in Washington state, adding an additional generation station with 320 megawatts of zero-emission electricity to Grant PUD’s and Energy Northwest’s portfolio. The announcement signals one of the first modern commercial advanced reactor designs that will be built in the United States and is described as a [“game-changer”](#) by Congressman Dan Newhouse (R-WA). This [TRi Energy Partnership](#), as it’s referred to, signals the success of cost-sharing and public-private partnerships programs, like the ARDP, in developing advanced reactor technology.