



X-energy: News Release

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TRISO-X Fuel Fabrication Facility Oak Ridge TN

## X-energy's TRISO-X Selects Oak Ridge Horizon Center for First Commercial Advanced Reactor Fuel Fabrication Facility in North America

The cross-cutting TRISO-X Fuel Fabrication Facility will be commissioned in Oak Ridge, Tennessee, with support from the U.S. Department of Energy's Advanced Reactor Demonstration Program.



*Artist rendering of the proposed TRISO-X World Headquarters and Commercial Fuel Facility at the Horizon Center Industrial Park, Oak Ridge, TN.*

TRISO-X LLC, a wholly owned subsidiary of X-energy LLC, has selected the Horizon Center Industrial Park in Oak Ridge, Tennessee as the site for its commercial advanced nuclear reactor fuel fabrication facility, the nation's first High-Assay Low-Enriched Uranium (HALEU) based fuel fabrication facility. The TRISO-X Fuel Fabrication Facility (TF3) is being commissioned through funding, in part, from the U.S. Department of Energy's (DOE) Advanced Reactor Demonstration Program (ARDP).

"The Department is pleased with the progress that TRISO-X has made to date in developing a commercial-scale capability to fabricate this robust fuel form in support of our Advanced Reactor Demonstration program, and we

believe that the Oak Ridge area is an excellent choice for this facility based on the availability of a technology-oriented labor force and strong community support for the Department's nuclear mission" said Alice Caponiti, Deputy Assistant Secretary for Reactor Fleet and Advanced Reactor Deployment.

The commercial facility's cross-cutting design will enable manufacturing of fuel for any number of advanced or small nuclear reactors based on TRistructural ISOtropic (TRISO) fuel.

"The Department of Energy calls TRISO the most robust nuclear fuel on Earth," said Dr. Pete Pappano, President at TRISO-X, "TRISO is a technology that's been developed and improved over 60 years. Our facility will bring this game-changing fuel to market, beginning with a proprietary spherical fuel pebble for X-energy's Xe-100 reactor and its utility partner Grant County Public Utility District, in Washington state."

"Since the Tri-Energy Partnership was announced on April 1, 2021, we have strongly supported X-energy's efforts to bring a new, safer fuel source to the marketplace. TRISO-X represents the next evolution of nuclear fuel that the industry and U.S. government have invested millions of dollars ensuring the public's safety," said Kevin Nordt, CRO of Grant County Public Utility District.

Scheduled for commissioning and start-up as early as 2025, the TF3 is projected to generate more than 400 jobs to the Oak Ridge area and attract an investment of nearly \$300 million, building off investments to date of over \$75 million. The facility will initially produce 8 metric tons per year (MTU/year) of fuel that can support about twelve Xe-100 reactors. The TRISO-X team aims to expand the facility's capacity to 16 MTU/year by the early 2030s. Throughout construction of the modular facility, the subsidiary will partner with local community colleges to develop a training program and recruit from the local labor force, helping to create sustainable economic opportunities for the region.

"We've seen growing interest in our work in the last few years, especially since the TRISO-X subsidiary was formed," said Dr. Pappano. "The Department of Defense and NASA are currently two of our government customers. The TF3 will be used to continue to support government funded projects, such as mobile reactors for the military or space nuclear projects."

Dr. Pappano added, "Our team has actually been working in Oak Ridge since 2016. We now have about 40 employees and five locations, two of which are operating facilities: our TRISO-X Pilot Facility located inside Oak Ridge National Laboratory, and the TRISO-X Research and Development Center located in the Centrus Technology Manufacturing Center.



*The TRISO-X Pilot Facility operates inside Oak Ridge National Laboratory via a public-private partnership and produces kilogram quantities of HALEU fuel.*



*The TRISO-X Research & Development Center operates inside the Centrus Technology Manufacturing Center and will be used to train operators for the commercial TF3 (note; image taken in 2021 prior to set-up of proprietary equipment, shown in insert)*

The Oak Ridge Horizon Center is located in the heart of Tennessee's Technology Corridor. As a key community partner, the TF3 will capitalize on its close access to the center's several hubs of science and technology to meet the growing domestic and global demand for TRISO-based fuel.

**Quotes:**

**Quote from Congressman: Chuck Fleischmann**

"I am very excited to see the growth of TRISO-X in Oak Ridge. I was present for the commissioning of the X-energy TRISO-X Pilot Facility in 2018, and am thrilled that they have selected Oak Ridge for their commercial manufacturing facility. This fuel, used to power advanced reactors, will take advantage of the unique talent Oak Ridge has to offer, and bring US technology leadership in clean nuclear energy to the world."

**Quote from TVA: Jeff Lyash**

"TRISO-X is on the leading edge of new nuclear technology, providing innovative solutions to help the utility industry – and the nation – achieve net-zero carbon emissions," said Tennessee Valley Authority President and CEO Jeff Lyash. "At TVA, we believe advanced nuclear energy is the best choice for clean, low-cost, around-the-clock generation, and I am honored to welcome TRISO-X as they join other innovators in Oak Ridge to shape our energy future."

**Quote from Lt. Governor McNally**

"I am tremendously grateful to TRISO-X for making this kind of investment in our community. TRISO-X's mission works in perfect synergy with our unique and innovative technology corridor here in Oak Ridge. These high quality jobs will invigorate the technology sector and our economy. This is a big win for our state and Oak Ridge."

**Quote from Senator Ken Yager**

"We've always known the heart of Tennessee's Innovation Corridor is Oak Ridge and Roane County, and the addition of TRISO-X to our community solidifies our importance in developing jobs and infrastructure for future generations. Commercial production of next generation energy technology is crucial not only to our region but our entire country, and I'm so proud that our community plays such an important role in this endeavor."

**Quote from Oak Ridge Mayor Warren Gooch**

"The City of Oak Ridge welcomes TRISO-X to our community, and we are pleased to be part of the team that supports their vital work. Oak Ridge has a history of leading the world in advanced nuclear technologies. The expertise and resources are here to assist this innovative company as they fabricate fuel for the next generation of safe and reliable energy production."

**Quote from Roane County Mayor: Ron Woody**

"Our region, more than 80 years ago began new technology development and production with the Atomic Energy Commission (DOE), the Tennessee Valley Authority, and supporting companies. Nuclear energy was born. A new generation of nuclear energy and nuclear renaissance is now developing in the region and we are proud that TRISO-X will be a cornerstone of this development."

**Quote from IDB Chair: David Wilson**

I am thrilled TRISO-X has chosen Oak Ridge and Horizon Center as the location of its new manufacturing facility proving Oak Ridge continues to lead the way toward advancements in energy and technology. The job creation, tax revenue, and co-location of supporting industry that I anticipate this project will bring to our community has the potential to create economic growth that will benefit all of Oak Ridge and surrounding areas.

**Quote from City Manager: Mark Watson**

"The City of Oak Ridge is pleased to announce the coming of TRISO-X to our community. As a base industry for the creation of nuclear fuels now and into the future, TRISO-X is part of a growing recognition of the value of nuclear energy," said Mark Watson, City Manager, "In Oak Ridge, our community understands and welcomes being a part of this future for America. The \$300 million in investment and the 400 jobs projected as part of this industry, will confirm Oak Ridge as the leading community in nuclear fuel production for powering the nation."

**Key Facts:**

- The TRISO-X Fuel Fabrication Facility will be a first-of-a-kind US Nuclear Regulatory Commission (NRC) Category II licensed TRISO-based fuel fabrication facility. The facility will utilize uranium enriched to less than 20 percent to manufacture nuclear fuel products for a variety of advanced and small modular reactors, plus specialty fuels for space nuclear projects.
- Site preparation and construction of the facility will get underway in 2022, with NRC commissioning and start-up scheduled for as early as 2025.
- The ARDP aims to spur the development of advanced reactor technology in the United States and for the global export market.
- In October 2020, the [DOE announced X-energy](#) as one of two awardees for its ARDP, advancing the development of the Xe-100 and the establishment of the commercial scale TRISO-X Fuel Fabrication Facility.
- In March 2021, X-energy signed the [ARDP Cooperative Agreement](#), officially marking the start of the company's participation in the advanced reactor program. This project enables X-energy to build the world's first commercial scale advanced nuclear reactor and TRISO-X to partially fund its T-FFF facility.
- In August 2021, X-energy established [TRISO-X as a subsidiary](#) to commercialize its advanced nuclear fuel.
- In November 2021, [Congress appropriated approximately \\$1.1 billion](#) to X-energy's ARDP Project with Historic Legislation Recognizing Clean Energy Supply as vital to US Infrastructure and Economic Health.

- This site selection for the TRISO-X Fuel Fabrication Facility advances X-energy's commitments under the ARDP to support the projected fleet of TRISO-based fuel reactors in the United States and worldwide.

**About X-energy**

X-energy is redefining nuclear energy. Through TRISO-X, it manufactures fuel that seals uranium particles in a protective coating, which makes meltdown impossible and retains the waste inside forever. X-energy also designs plants that unlock the fuel's potential in a process that's as clean as wind or solar. When combined, the result is reliable carbon-free baseload power, produced more safely and affordably than ever before and available anywhere, at any time. For more information, visit <https://x-energy.com> or connect with us on [Twitter](#), [LinkedIn](#) or [Instagram](#).

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More information about how to be part of this exciting project will be made available in 30 days