About X-energy

Founded in 2009

16 years of investment and business development

Rockville, MD Headquarters

Rooted in the nuclear community with proximity to DOE and the Nuclear Regulatory Commission (NRC)

50+ Years of R&D

Our technology builds upon decades of R&D in high-temperature gas reactors

>850 Employees

Leading Generation IV nuclear reactor development

$1.2b Federal Award (50/50 cost share)

One of two companies selected for DOE's Advanced Reactor Demonstration Program

$1.8b Raised from Investors

One of the highest amounts of private capital raised of any advanced nuclear company

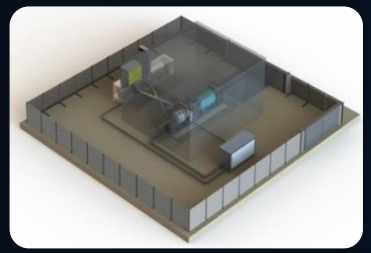
X-energy designs & develops advanced nuclear reactors and fuel

Xe-100 Small Modular Reactor (SMR)

- X-energy's flagship product is a High-Temperature Gas-cooled Reactor (HTGR) that can produce both high efficiency electricity and industrial steam
- Four or more 80 MWe reactors (320 MWe total "4-packs") are bundled to optimize economics and performance

TRISO-X Fuel Fabrication

- Our reactors use tri-structural isotropic (TRISO) coated particle fuel approved for use by the NRC
- TRISO-X developed a proprietary version with improved supply and quality control processes



XENITH Microreactor

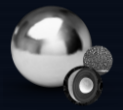
- The 3-10 MW XENITH microreactor can generate electricity for both military and commercial applications
- Development funded by $60M+ investment from DoD microreactor programs (Project Pele)

X-energy's History

2009 - 2014 — Initial Concept

- **Founded by Kam Ghaffarian**
- **Reactor engineering team in place**, led by Dr. Eben Mulder & Dr. Martin Van Staden
- Completed market study and design choices, and **finalized design parameters for the Xe-100**

2015 - 2018 — Technical Development Focus



- X-energy hired fuel team and **began development of TRISO-X**
- Established pebble fuel manufacturing capability
- **Began regulatory engagement with the NRC**

2019 - 2021 — Commercialization Preparation

- **Clay Sell appointed CEO**
- **Selected for DOE's Advanced Reactor Demonstration Program (ARDP)** - one of two demonstration awards out of many applicants)

2022 - 2025 — Customer Wins & Commercialization Acceleration

- **Signed agreement** to develop a four-unit Xe-100 at one of Dow's Texas sites utilizing ARDP funding
- **Announced partnership with Amazon to bring >5 GW of Xe-100 projects online by 2039** (largest commercial deployment target of SMRs to date)
- **Signed agreement** to deploy up to 12 Xe-100 reactors in central Washington
- **Signed Joint Development Agreement** with Centrica targeting ~6 GWe in the United Kingdom

2025 — Execution

- Closed oversubscribed **$700mm Series D capital raise**
- **Submitted Construction Permit Application** to the NRC for Dow project
- TRISO-X **allocated first tranche of HALEU** from DOE
- TX-1 vertical construction **begins in September 2025**

TRISO-X Fuel

TRISO Fuel Development Process

The U.S. Department of Energy describes TRISO fuel as "the most robust nuclear fuel on Earth," which is why X-energy has invested in establishing it as the fuel of the future.

- ✓ **Tri-structural isotropic (TRISO) fuel has** a 60+ year demonstrated track record through prototype and full-scale reactors, supported by the U.S. Department of Energy
- ✓ **DOE has spent over $500mm** developing, irradiating, and testing TRISO fuel, concluding TRISO as the most melt-proof and proliferation-proof fuel available
- ✓ **TRISO fuel retains waste and fission products** during all foreseeable adverse conditions, even worst-case accidents and natural disasters

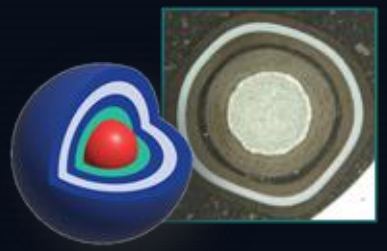
Fuel Process

Step 1

~15.5% HALEU Kernel

Feedstock sourced from third parties

Step 2



TRISO Fuel Particle

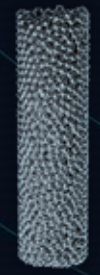
Millimeter-size kernel encased in carbon and ceramic layers

Step 3

TRISO-X Fuel Pebble

~19,000 TRISO particles per pebble set in graphite matrix

Step 4

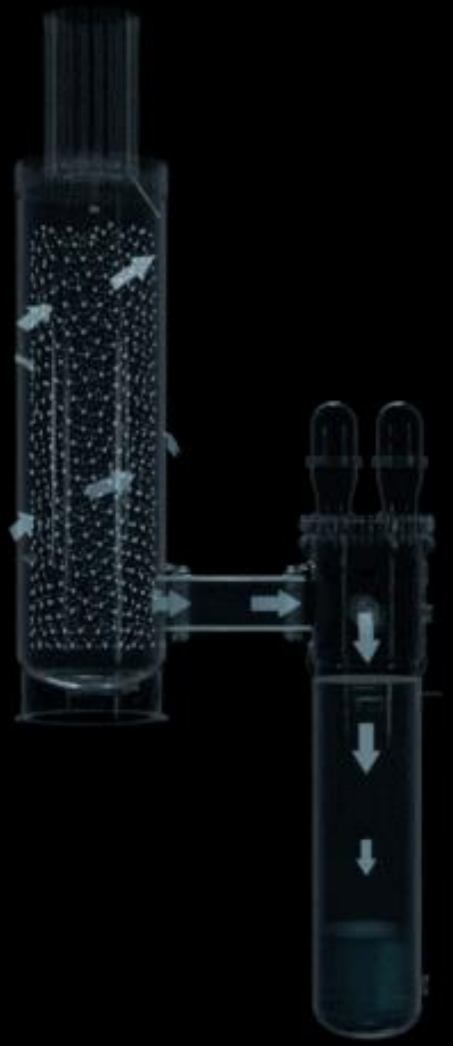


Pebble Bed

>220,000 pebbles form the core of each Xe-100 reactor

Xe-100 Reactor

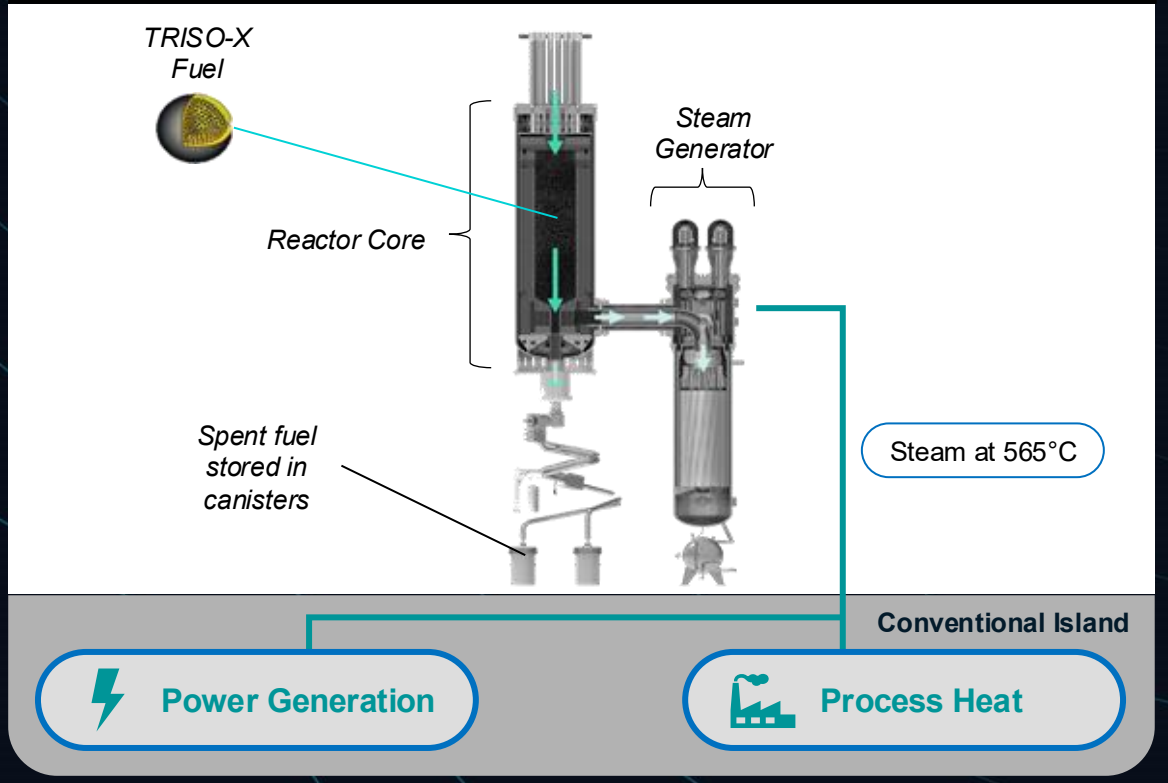
Xe-100 Reactor



Xe-100 Advanced Reactor Attributes

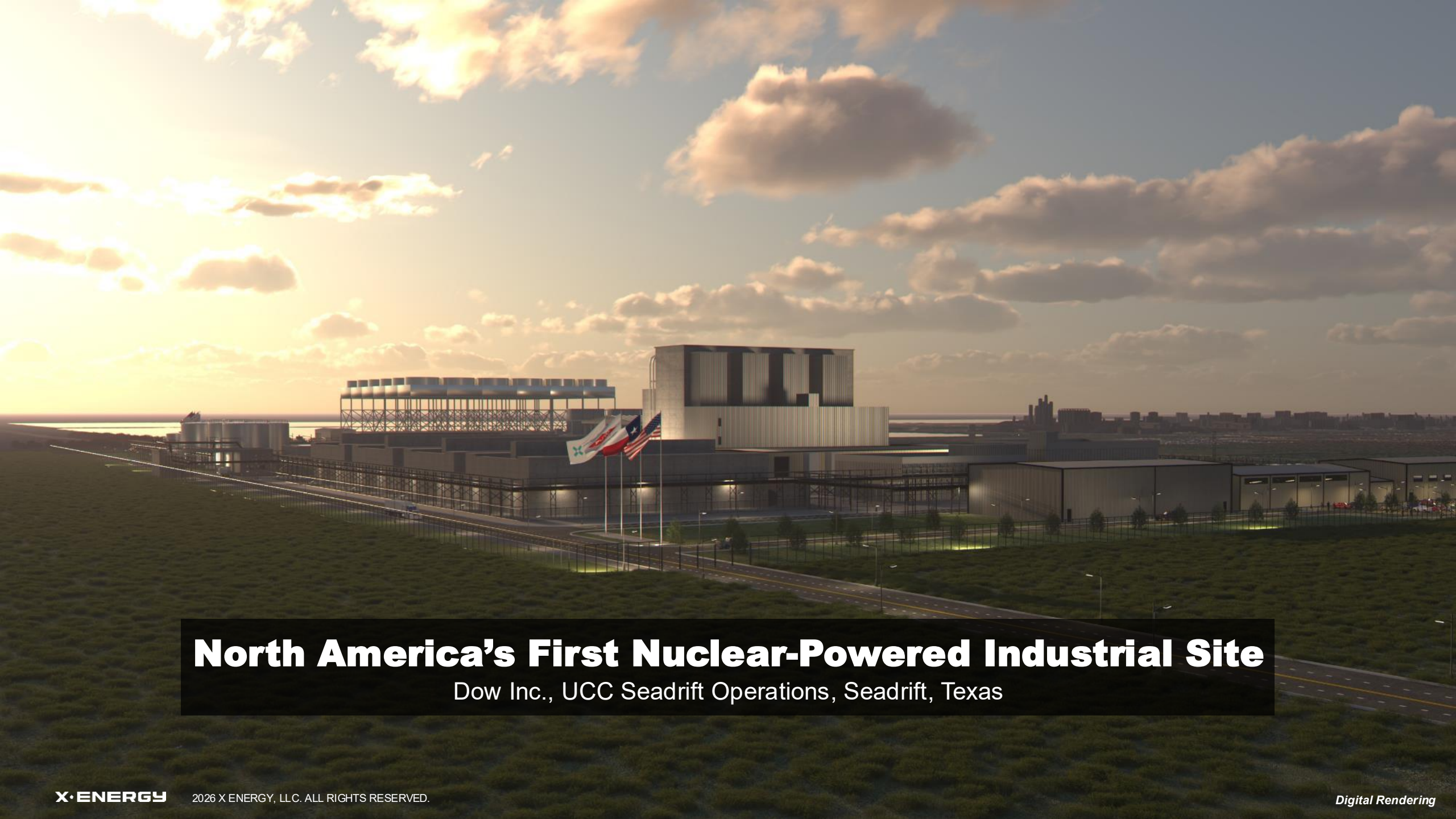
- Clean[1]
- Firm & reliable (“always on”)
- Intrinsic safety features
- More secure than traditional nuclear reactors
- Scalable over time
- Streamlined design (off-the-shelf components)
- Versatility for both electricity & steam
- Load-following

Xe-100 Schematic (illustrative)



One Xe-100 plant with four reactors produces 320 MWe

[1] The Xe-100 does not generate any carbon emissions during operation



North America's First Nuclear-Powered Industrial Site

Dow Inc., UCC Seadrift Operations, Seadrift, Texas

X·ENERGY

Digital Rendering

Cascade Advanced Energy Facility

Energy Northwest, Richland, Washington

X·ENERGY

Digital Rendering

America's First Commercial Category II Nuclear Fuel Facility

TRISO-X, Oak Ridge, Tennessee

Digital Rendering

TRISO-X Fuel Facility Under Construction Today

TRISO-X, Oak Ridge, Tennessee