



# NATRIUM

## R&D Cooperation on Advanced Reactors-ARDP and Beyond

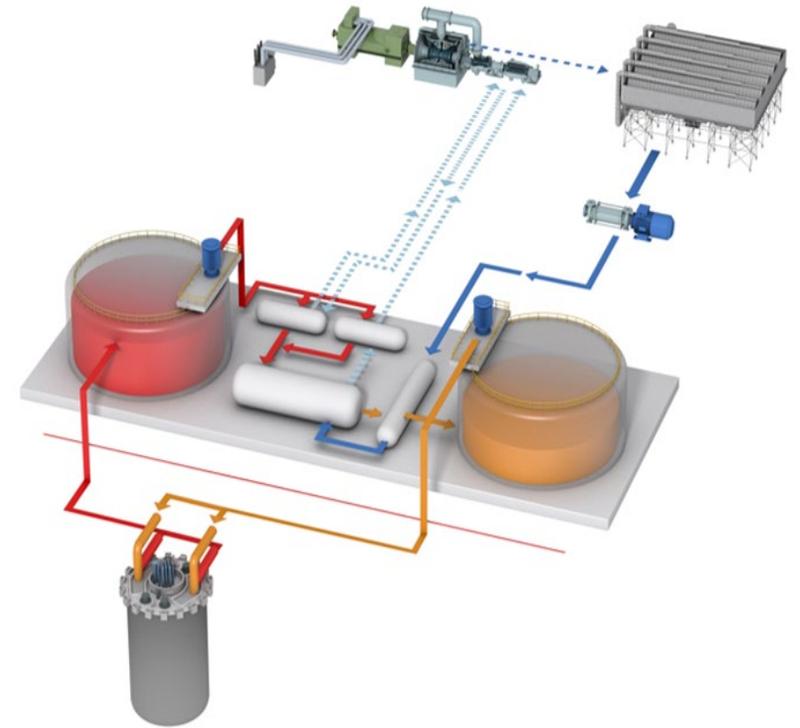
Chris Levesque  
TerraPower President and CEO

A TerraPower and GE Hitachi Technology

SUBJECT TO DOE COOPERATIVE AGREEMENT NO. DE-NE0009054  
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# Introducing the Natrium™ Reactor

- Builds on years of research and development in sodium reactors
- Incorporates learnings from concentrated solar power technologies with a focus on cost competitiveness
- Integrates on and fortifies grids with high renewables penetrations
- 345 MWe reactor that can flex to 500 MWe for 5.5 hours when needed



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# U.S. Advanced Reactor Demonstration Program (ARDP)

- Renewing U.S. leadership in nuclear energy and climate
- Unlocking U.S. national labs' and nuclear technology companies' innovations
- Building on U.S. history of demonstration success



# Groundbreaking Public-Private Partnership

- TerraPower wins U.S. DOE's Advanced Reactor Demonstration Program in Oct. 2020
- U.S. DOE committed to providing nearly \$2 billion and TerraPower will match dollar-for-dollar
- Demonstrate the ability to design, license, construct, startup, operate Natrium reactor
- Build the supply chain for sodium fast reactors in the United States



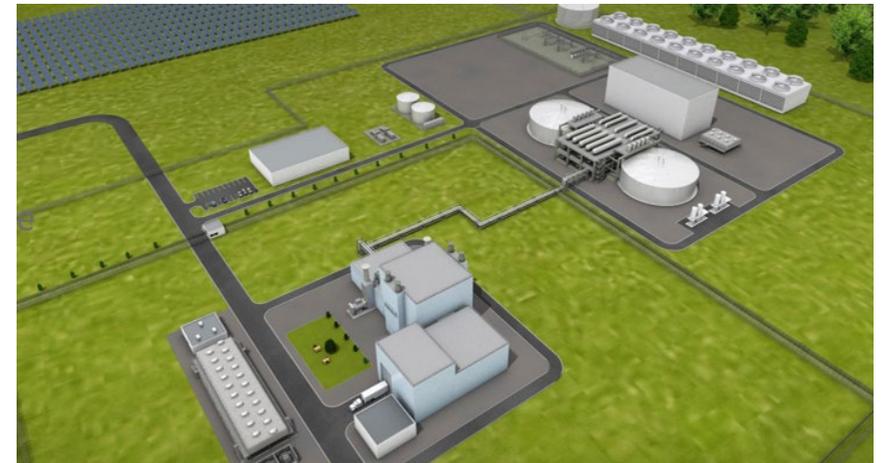
# Rethinking What Nuclear Can Be

## Nuclear redefined

- Eliminates nuclear “sprawl”
  - Design to cost
  - Simplicity
  - Rapid construction
  - Design-specific staffing
- ~41% net thermal efficiency

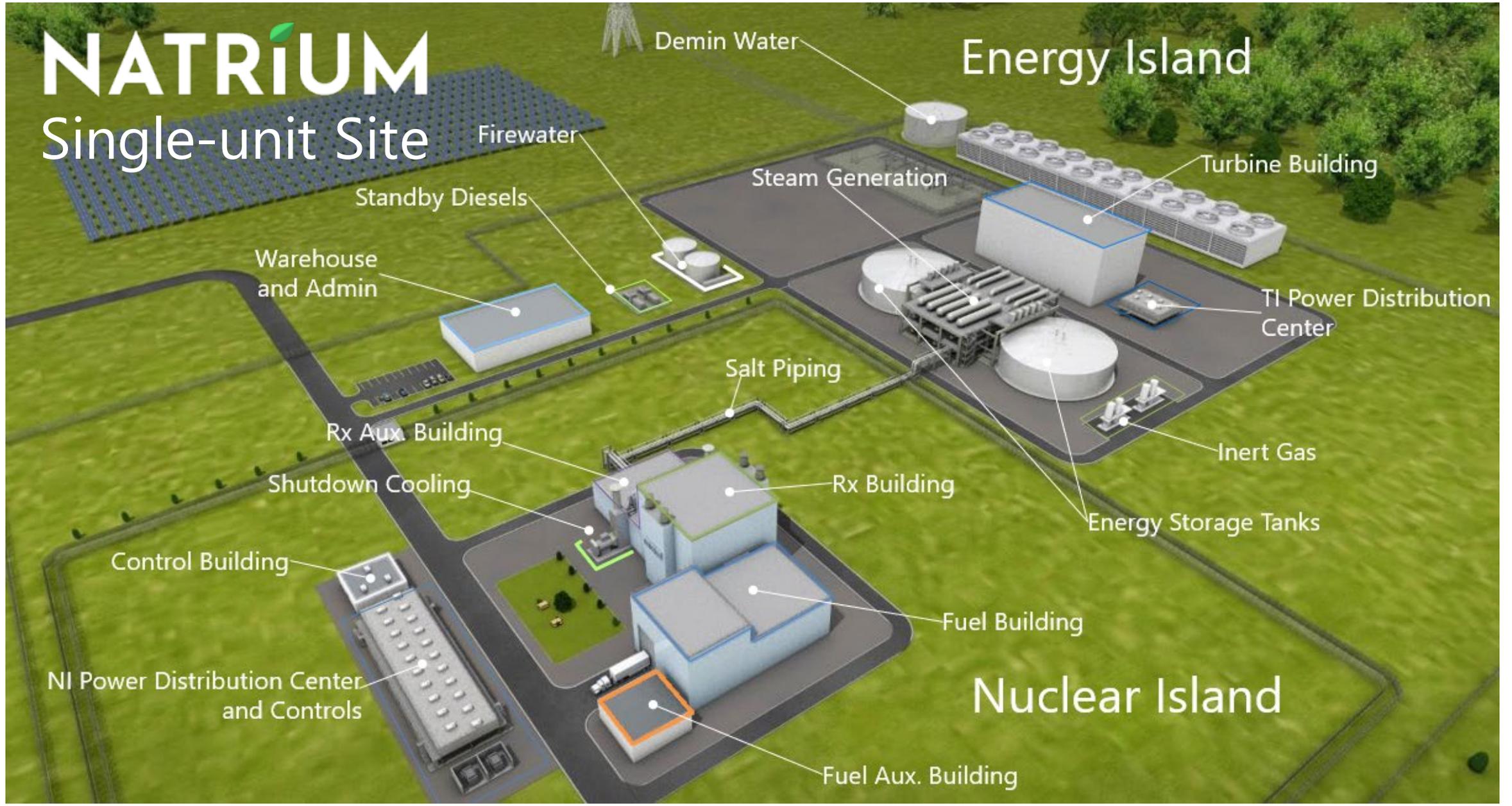
## Integrating with renewables

- Zero-emission, dispatchable resource
- Price follower with reactor at 100% power 24/7
- 345 MWe nominal
- Flex to 500 MWe for 5.5 hours with energy storage



# NATRIUM

## Single-unit Site



# JAEA Oarai Facility Visit

- Toured the Japan Atomic Energy Agency Oarai Research & Development Institute on January 22, 2020.
- Toured the JOYO Test Reactor and the sodium fast reactor test facilities including:
  - SWAT-3R
  - PLANDTL
  - AtheNa



AtheNa



**THANK YOU.**

