

Advanced Reactors: Crucial for a Net-Zero Economy

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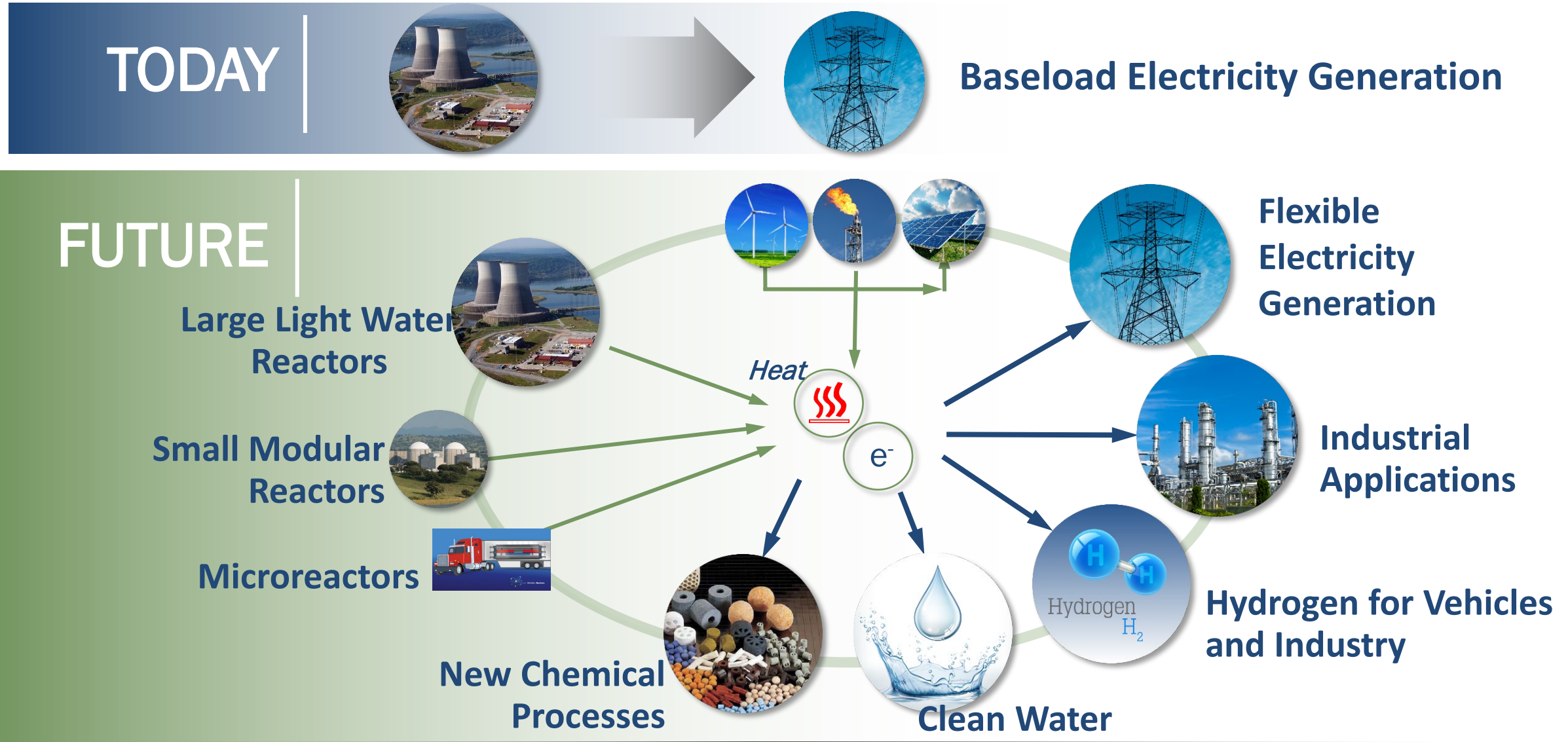
Deputy Assistant Secretary for Reactor Fleet
and Advanced Reactor Deployment

Office of Nuclear Energy

JAEA Sixth Symposium on U.S.-Japan
Nuclear Energy Research Cooperation

February 24, 2023

Advanced Reactors: Integrated Grid for Net-zero Future

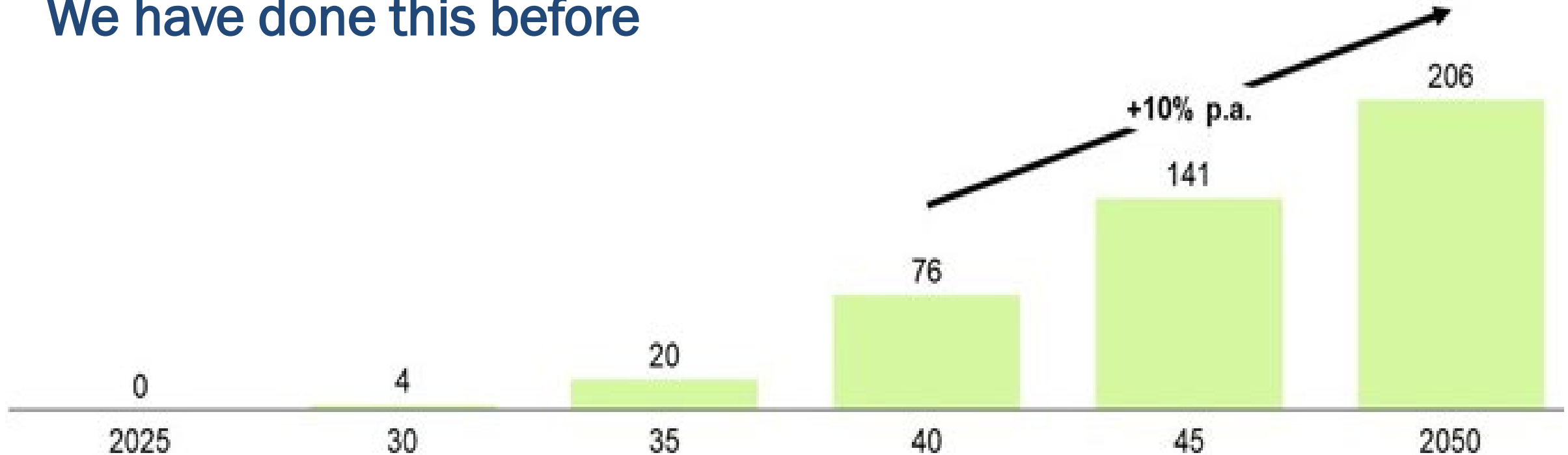


Required Nuclear Buildout – 200 GW by 2050

Annual industrial capacity additions:

- 2 GW per year 2029 – 2034
- Ramping to 13 GW per year from 2035 – 2050

We have done this before



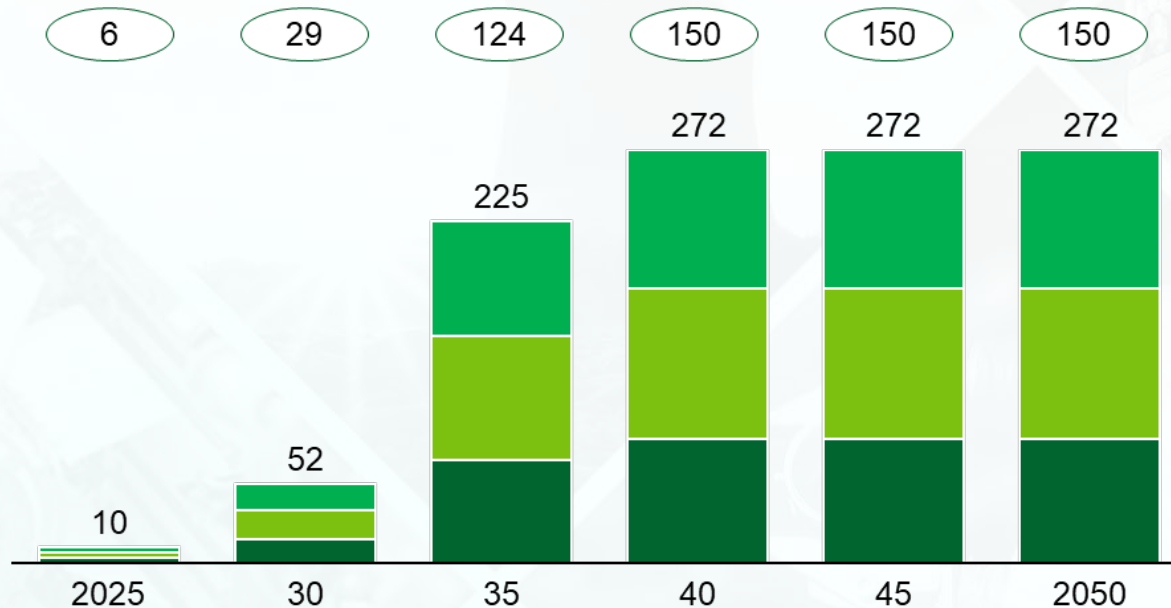
Workforce to Deploy 200 GW by 2050

Manufacturing and construction jobs to stay on track:

- 50 thousand workers by 2030
- 250-300 thousand workers by 2050

Annual construction and manufacturing labor pool to achieve 200GW by 2050, k jobs¹

2 GW/yr ramp rate, immediate



Labor pool

Trades – highly constrained

Includes welders, electricians, metal workers, fabricators, and other construction and manufacturing trades workers

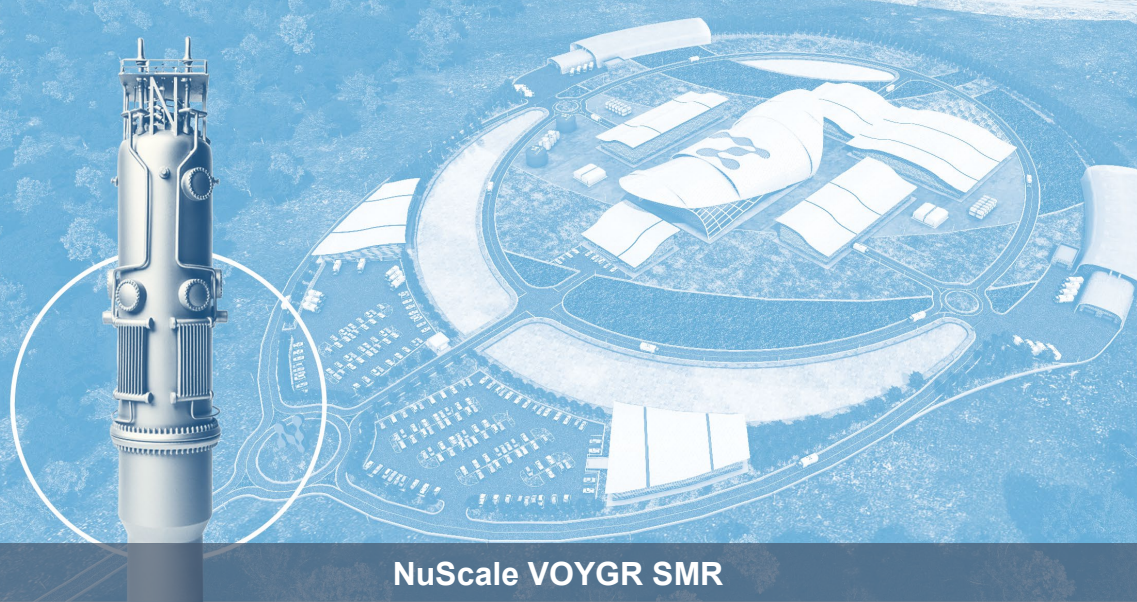
Other direct – med. constrained

Includes engineers, supervisors, direct management, and other production occupations

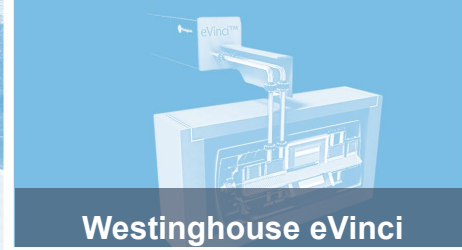
Indirect labor – less constrained

Includes material movers, business operations, sales, information managers, IT, and administration

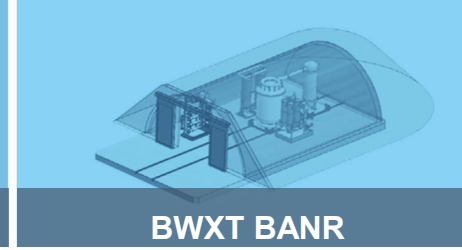
X Induced jobs



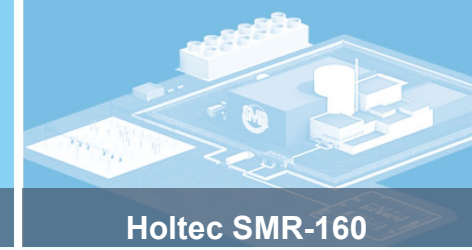
NuScale VOYGR SMR



Westinghouse eVinci



BWXT BANR



Holtec SMR-160



TP Molten Chloride Fast Reactor

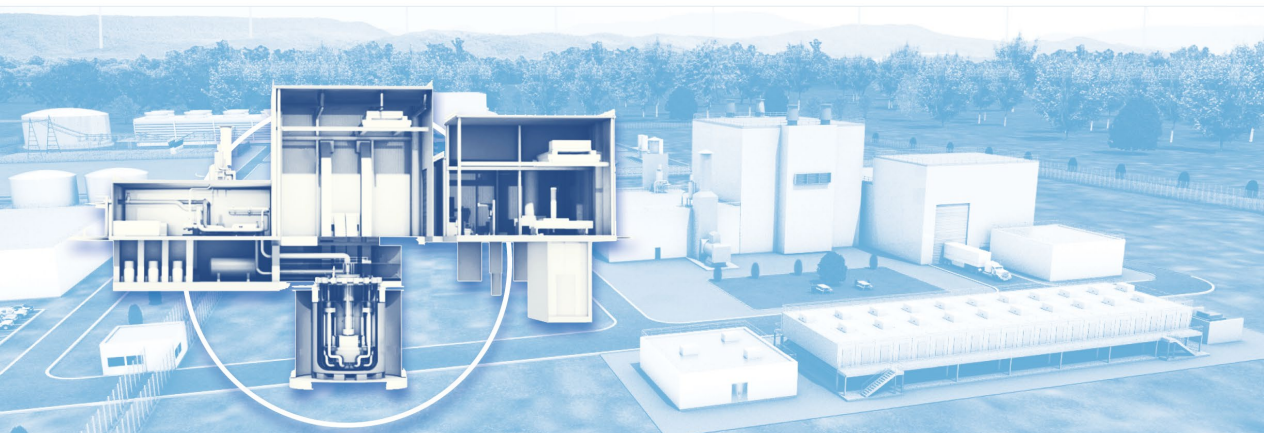


Kairos KP-FHR

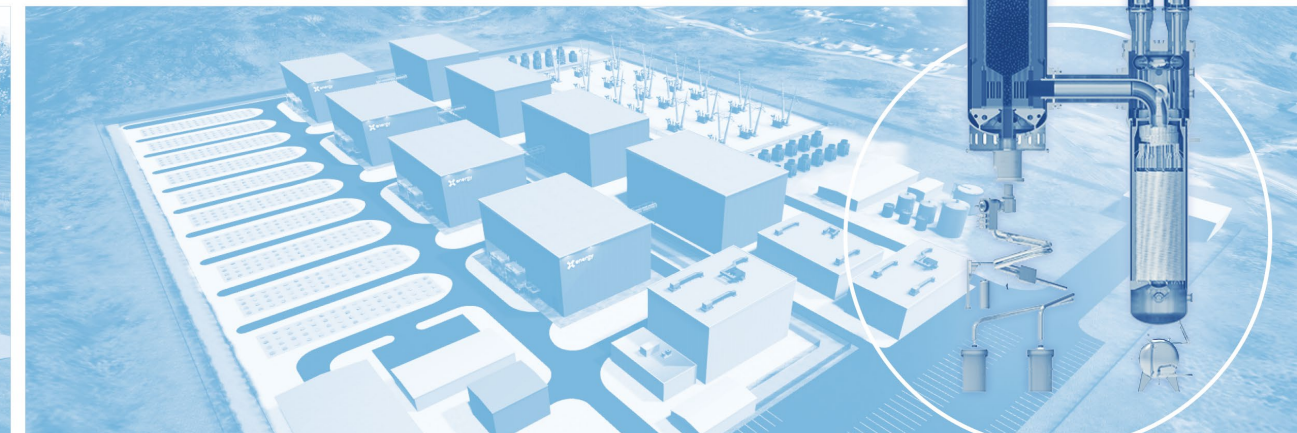
Advanced Nuclear Public-Private Partnerships

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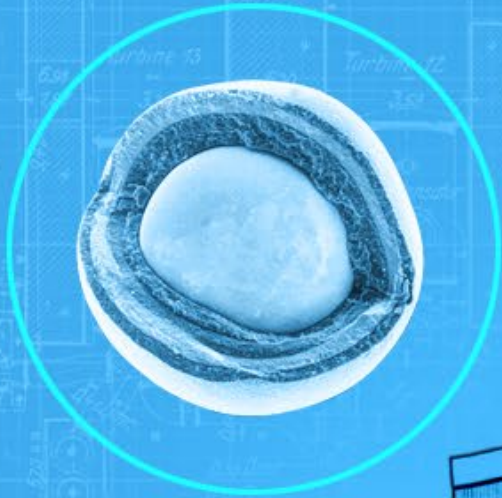
TerraPower Natrium Reactor



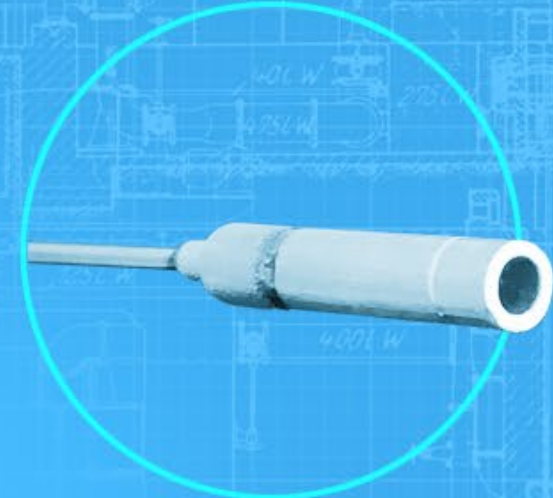
X-energy XE-100

National Laboratories

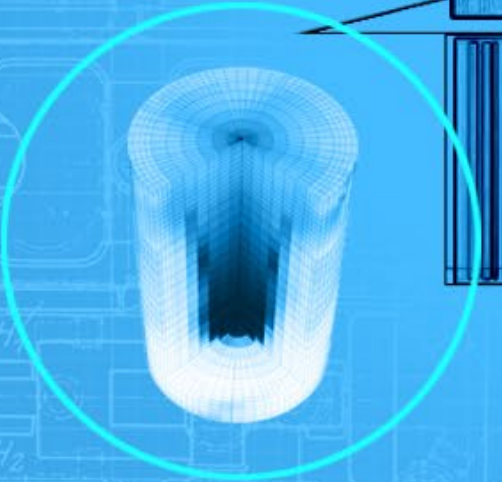
Drive Foundational Innovation



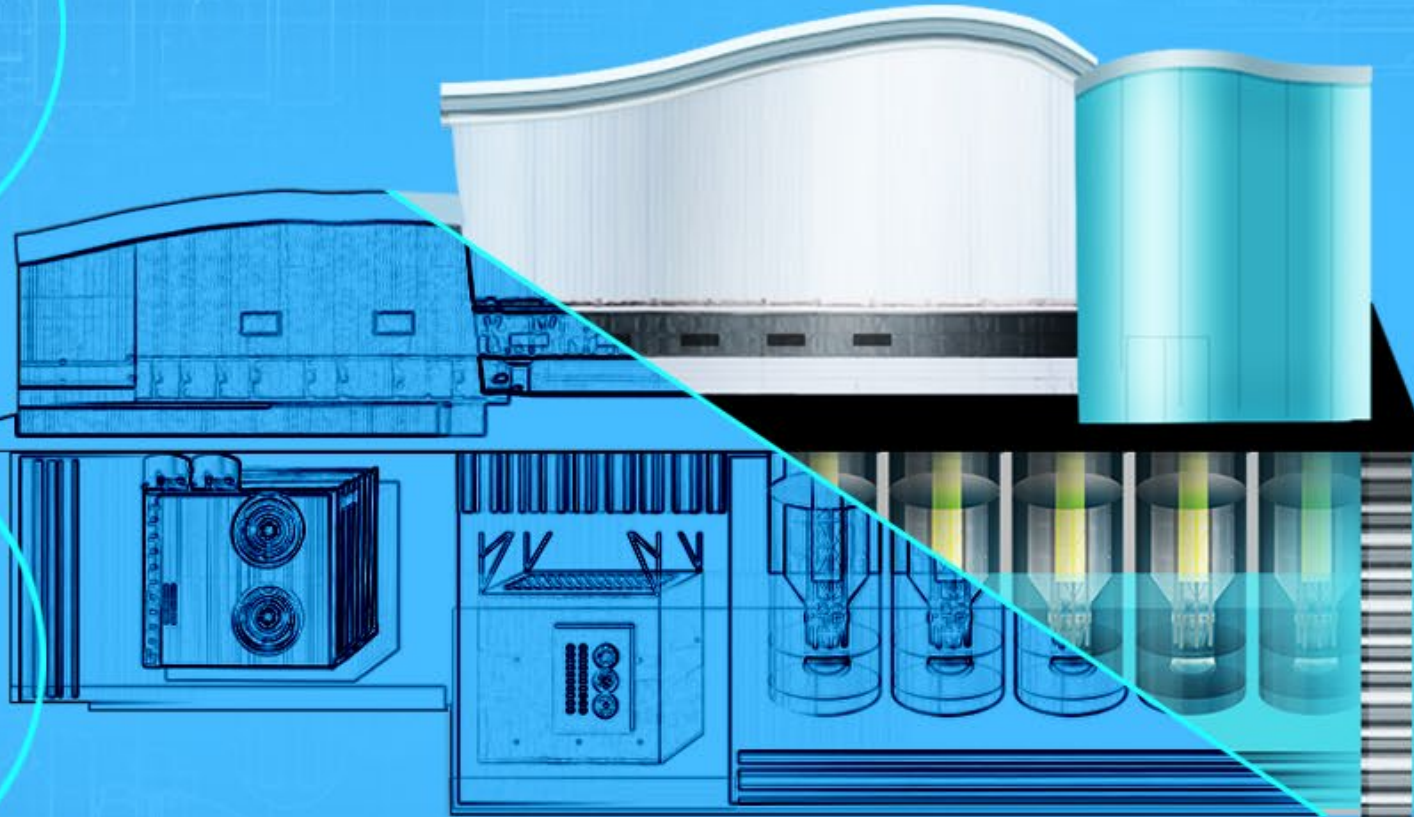
Advanced Fuels



Sensors and Instrumentation



Modeling and Simulation



Advanced Materials and Manufacturing

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Opportunities for US-Japan Collaboration

- **University-led Research**

- Innovation and workforce development

- **National Laboratories**

- Collaborative research
- Unique world-class R&D infrastructure

- **Private-public partnerships**

- First-of-a-kind demonstrations
- Address key technology and regulatory risks
- Stimulate supply chain development
- Build confidence for capital investment

The background is a collage of various nuclear energy components, including fuel rods, reactor cores, and piping, all rendered in shades of blue and teal. The text "Thank you!" is centered in a white, italicized font.

Thank you!

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