

An aerial rendering of a large industrial facility, likely a power plant, featuring a prominent curved building with a dark facade and a large open area. A road with a dashed white line runs through the foreground. The sky is filled with dramatic, dark clouds, suggesting a sunset or sunrise. The overall scene is rendered in a realistic style with a focus on architectural details and atmospheric lighting.

# DEPLOYMENT OF THE GEH BWRX-300 EUROPEAN DESIGN IN EUROPE

Fredrik Vitabäck

# BWRX-300 - Overview

Breakthrough innovation coupled with a proven design reduces cost and risk.



## PROVEN

- 10<sup>th</sup> generation boiling water reactor (BWR)
- Based on a licensed design in the U.S.
- Powered by commercially available fuel with qualified manufacturing facilities in the U.S. and Europe (does not need HALEU)
- Leverages existing supply chain and off-of-the-shelf components

## INNOVATIVE

- Significant capital cost reduction
- Less concrete and steel/MW than competitors
- Small footprint and simple layout
- Underground construction using proven methods from other industries

## SIMPLIFIED

- BWR is inherently simple
- Fewer components than other SMR technologies leading to less capital and operating cost
- Patented innovation drives further simplicity

Ideal for electricity generation and industrial applications, including hydrogen production, desalination and district heating.

# BWRX-300 – Constructability and Serviceability

Breakthrough innovation coupled with a proven design reduces cost and risk.



## STANDARD DESIGN

- Tennessee Valley Authority, Ontario Power Generation, Synthos Green Energy and GE Vernova's Nuclear business to share in the investment of approximately \$400 million to develop the BWRX-300 standard design.

## GLOBAL FROM BIRTH

- The BWRX-300 Standard Designs for North America and Europe ensure efficient adaptation to requirements in those regions.

## SERVICE & FUEL

- Outage Services
- Inspections
- Plant and Reactor Modifications
- Fuel Inspections
- Decommissioning Services
- Advanced BWR fuel
- Sodium™ fuel facility\*
- Accident Tolerant Fuel
- Engineering Services
- Uranium Management

Ideal for electricity generation and industrial applications, including hydrogen production, desalination and district heating.

# BWRX-300 – Nuclear but different

Breakthrough innovation coupled with a proven design reduces cost and risk.

<b>AREAS OF PROJECT EXECUTION RISK</b>		<b>BWRX-300</b>	<b>Large Scale</b>
<b>Cost, Schedule &amp; Risk</b>	<ul style="list-style-type: none"> <li>• Less capital at risk for multiple, smaller units staged over time as compared to a single large-scale unit project</li> <li>• Shorter construction time can lead to faster realization of economies of scale</li> </ul>	<b>\$</b>	<b>\$\$\$\$</b>
<b>Workforce Management</b>	<ul style="list-style-type: none"> <li>• Labor pool logistics simplified due to lower peak craft labor per unit</li> <li>• Reduced construction lag &amp; workforce availability risk due to modular, “factory-based” development/deployment</li> </ul>	Peak Craft Labor Per Unit	
		<b>1,000 - 1,600</b>	<b>8,000 - 12,000</b>
<b>Land Usage</b>	<ul style="list-style-type: none"> <li>• Smaller sizing and siting requirements enables new opportunities for industrial applications</li> </ul>	Emergency Planning Zone	
		<b>Site Boundary</b>	<b>10+ Miles</b>
<b>Availability &amp; Reliability</b>	<ul style="list-style-type: none"> <li>• Availability of ~95% per unit</li> <li>• Availability of 99%+ for 3 (of 4) units</li> <li>• Flexible outage timing, not seasonal</li> </ul>	Workforce Optionality	
		<b>Outage Flexibility</b>	<b>Outage Seasons</b>
<b>Grid Stability</b>	<ul style="list-style-type: none"> <li>• Reduced grid impact &amp; requirements based on smaller unit-by-unit generation and siting close to load centers</li> <li>• Limited grid connections for multiple large reactor sites</li> </ul>	Load Rejection	
		<b>300 MWe</b>	<b>1,100-1,200 MWe</b>
<b>Supply Chain</b>	<ul style="list-style-type: none"> <li>• Minimized supply chain risks due to smaller, “off-the-shelf” equipment vs. very large-scale “nuclear” components</li> </ul>	<b>“Normal” Large Construction Equipment</b>	<b>“World’s Largest” Niche Equipment</b>



# BWRX-300 Roadmap - Licensing



# Positioned for global success

## Focus on regional deployment partnerships and localization

### Canada

- In deployment with Ontario Power Generation to complete construction of first unit as early as 2029 – 3 additional units being planned
- Construction License Application submitted with the site already permitted by the Canadian regulator—only Canadian site with a permit
- Canadian Infrastructure Bank has approved nearly \$1 billion in financing
- Agreement with SaskPower to collaborate on project planning and to share expertise for the BWRX-300

### Poland

- The government of Poland has reached a decision in principle and approved six locations for the construction of 24 BWRX-300 small modular reactors.
- U.S. Export-Import Bank and U.S. International Development Finance Corporation sign letters of interest to lend up to \$4 billion to support projects
- Regulator's general opinion concludes BWRX-300 design is compliant with Polish nuclear safety.
- Working on the Preliminary Safety Analysis Report.

### UNITED STATES

- Agreement with Tennessee Valley Authority (TVA) to support a Construction Permit Application (CPA) for deployment at the Clinch River site in Oak Ridge, TN
- Already have U.S. Nuclear Regulatory Commission permit for the site—only site with a permit in the U.S.
- Working with several other U.S. nuclear utilities on early planning work

### UNITED KINGDOM

- GE Vernova's Nuclear business has been awarded a £33.6 million UK Future Nuclear Enabling Fund grant
- BWRX-300 selected to participate in the Great British Nuclear small modular reactor competition.
- GE Vernova's Nuclear business has entered the Generic Design Assessment process for the BWRX-300.

**BWRX-300 is in deployment ... it is not a demonstration project.**

# The Baltic Sea Region – Large demand for nuclear



First mover advantage have positioned Fermi Energia well in the region

Increasing discussions on cross border partnerships

Supporting policy framework enables long term planning

Regional nuclear demand motivates local industry scaling with global partners



GE VERNOVA