GE VERNOVA
HITACHI

BWRX-300: DELIVERING CARBON-FREE ELECTRICITY AT SCALE

Chris Maslak
August 19, 2025

GE Vernova – The Energy of Change

75K
Global employees

100+
Countries

~25%
Of the world's electricity today is generated with GE Vernova installed base

POWER
Gas Power, Hydro Power, Nuclear, Steam Power

WIND
LM Wind Power, Onshore Wind, Offshore Wind,

ELECTRIFICATION
Electrification Software, Grid Solutions, Power Conversion, Solar & Storage Solutions,

ACCELERATORS
Advanced Research, Consulting Services, Financial Services

WE ARE GE VERNOVA

POWER

Gas Power
- Heavy Duty Gas Turbines
- Aeroderivative Gas Turbines
- Steam Turbines/Generators

Steam Power
- US Nuclear, Global Coal
- Steam, Generators, Boilers

Hydro
- Hydro Turbines/Generators
- Pumped Storage

Nuclear
- Boiling Water Reactors
- Fuel
- Small Modular Reactors

WIND

Onshore Wind
- 2 - 3.5 MW platform
- 5 – 6 MW platform
- Services & repowering

Offshore Wind
- Haliade-150 (6 MW)
- Haliade-X (14 MW)

Wind Power
- ONW blades
- Haliade X blades

ELECTRIFICATION

Grid Solutions
- Transmission
- Transformers
- Grid Automation

Power Conversion & Storage
- O&G Electrification
- Naval Electrification
- Microgrids
- Inverters
- Energy Storage

DIGITAL

- Grid Software
  - Opus One Plat.
- Manufacturing
- Power and O&G

FINANCIAL SERVICES

- 3rd Party Financing Support
- Direct Financing though Equity

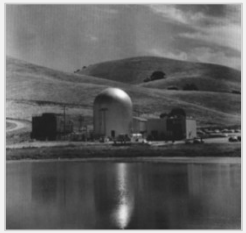
ACCELERATORS

Advanced Research
- Differentiated Technologies
- External Partnerships

Consulting Services
- Power Market Assessments
- Investment Decision Analysis

~75K EMPLOYEES IN 140 COUNTRIES

GE Vernova Hitachi: A Legacy of Turning Ideas into Reality



OVER 80 YEARS OF NUCLEAR EXPERIENCE AND INNOVATION

1939 First GE involvement in nuclear physics

1955 GE Atomic Division established

1957 Vallecitos BWR AEC License #1

1962 NPD achieves full power – 1st reactor in Canada

1974 25th BWR Peach Bottom 3

1986 50th BWR River Bend

1996 1st Gen III reactor (ABWR) built on time on budget

2014 ESBWR U.S. NRC License

2017 BWRX-300 launched

2022 1st commercial contract for BWRX-300 (OPG)

2023 TVA, OPG & SGE invest in BWRX-300 standard design

2024 UK FNEF award; GBN down select; OSGE starts licensing activities

2025 Darlington BWRX-300 Unit 1 approved for construction

*Jointly developed technology with TerraPower

BWR – boiling water reactor
AEC – Atomic Energy Commission
GBN – Great British Nuclear
NPD – Nuclear Power Demonstration
ESBWR – economic simplified boiling water reactor
OSGE – Orlen Synthos Green Energy
NRC – Nuclear Regulatory Commission
TVA – Tennessee Valley Authority
FNEF – UK Future Enabling Fund
OPG – Ontario Power Generation
SGE – Synthos Green Energy

67 Reactors licensed in 10 Countries

Nuclear business overview

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ADVANCED NUCLEAR

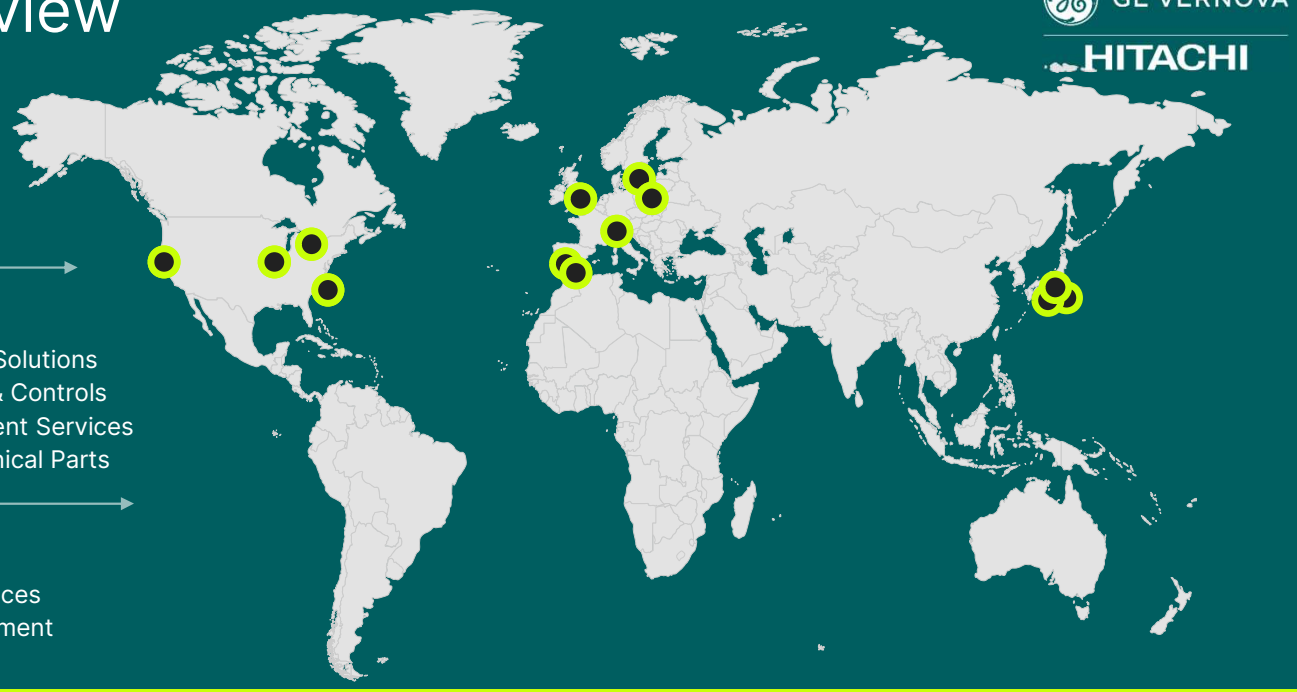
- Small Modular Reactor (BWRX-300)
- Sodium Fast Reactor
  (Working with TerraPower on Natrium™)

SERVICES

- Outage Services
- Inspections
- Plant & Reactor Mods
- Refurbishment Services
- Digital/Software Solutions
- Instrumentation & Controls
- Asset Enhancement Services
- Electrical/Mechanical Parts

FUELS

- Advanced BWR fuel
- Accident Tolerant Fuel
- Engineering Services
- Uranium Management



~2,500+ EMPLOYEES … A FULL-SERVICE PROVIDER WITH GLOBAL PRESENCE

GVH Morris Operation
Morris, IL

GVH SMR Technologies Canada
Toronto, ON

GENUSA Fuel Factory
Salamanca, Spain

GVH Office
Zurich, Switzerland

GVH Office
Warsaw, Poland

BWR Training Center
San Jose, CA

GVH and GNF HQs
Wilmington, NC

GVH & GENUSA Office
Madrid, Spain

GVH Office
London, UK

GVH Office
Stockholm, Sweden

Hitachi, Rinkai Works & GNF-J
Japan

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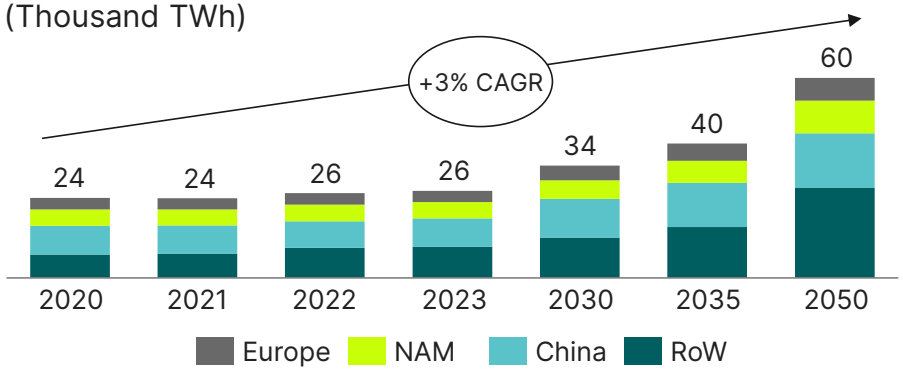
Global energy systems are at a tipping point

Global electricity demand is projected to more than double by 2050 vs. 2023 …

Historical & APS Projected Global Electricity Demand (Thousand TWh)



Regional drivers of growth differ across the world:

New demand	Data centers, EVs, & industrial electrification driving growth in NAM, EU, & China
Electrification	Asia, Africa, and LATAM expanding electricity usage (e.g., HVAC) & increasing grid access

… requiring novel solutions for clean, firm generation that address emerging challenges

Emerging grid reliability concerns

- 8 of 21 North-American regions are at risk for supply gaps
- Growth in renewables requires firm baseload generation to manage reliability

Looming decarbonization timelines

- Net-zero targets create a need for 24/7 cleaner power into the early 2030s
- Staying on a 1.5 °C path means retiring, repowering or retrofitting ~2,900 baseload coal units worldwide by 2030

Energy security and independence requirements

- Europe's TTF gas benchmark spiked in August 2022, raising long-term concerns about external gas dependence

Notes: APS = Announced Pledges Scenario; LATAM = Latin America; NAM = North America; RoW = Rest of World
Source: IEA World Energy Outlook 2024; IEA Global Changes in Electricity Demand 2015-2024; NERC's 2023 Long-Term Reliability Assessment

Nuclear solutions address these major challenges of the energy transition

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Benefits of nuclear power

Grid Reliability	Baseload power with grid stability	Delivers steady-state power plus frequency control to stabilize renewable-heavy grids
	High capacity factor	>90% capacity factor, with flexible outage scheduling
	Flexible load-following	Capable of ramping up or down to complement variable renewables
Decarbonization	Industrial decarbonization	Provides both electricity and thermal energy for sectors like steel, cement, chemicals, desalination, and district heating
	24/7/365* firm, lower carbon electricity	Enables net-zero targets with always-on, dispatchable clean energy—unaffected by weather, time of day, or season
Energy Security	Minimal land use	Significantly higher power density than renewables; ideal for industrial zones and legacy fossil sites
	Long asset life	Lifespan of 60+ years offers decades of predictable, emissions-free generation

*Exclusive of outages

SMRs vs. large nuclear: The case for faster delivery

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1 SMRs deploy 2–3x faster than large-scale nuclear

SMRs can reach commercial operation in 5–6 years versus 10–15 for traditional nuclear, accelerating energy security goals

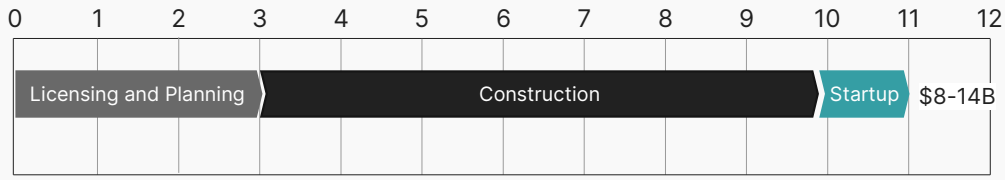
2 Lower capital at risk unlocks financing flexibility

Follow-on unit costs $2–4B vs. $8–14B for large nuclear, reducing exposure and enabling phased, milestone-based investment and financing models

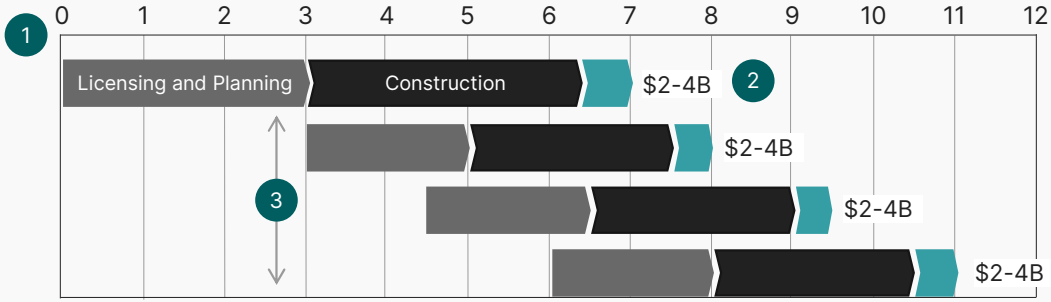
3 Modular build enables phased revenue & reinvestment

Staggered deployment allows cash generation from early units while others are built, improving cost curves and reducing pressure on financing

Large light water reactor project duration



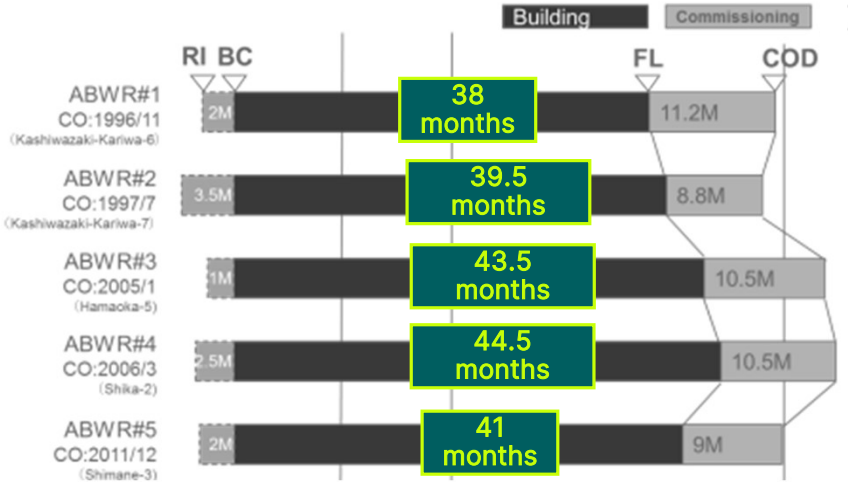
Example SMR multi-unit project duration



Source: GVH internal analysis

Building on ABWR experience

EFFICIENT, REPEATABLE MODEL



First-of-a-kind gen 3 plant built on 38-month construction schedule

SMRs vs. large nuclear: SMRs remove the barriers that held large nuclear back

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	Financial risks	Construction delay	Political resistance	Project execution
Large Nuclear	Typically requires **$8 – 14B capital investment**, creating significant financial exposure	Complex, site-built projects often take **8–12 years,** exposing work to delays, rework, and uncontrollable field conditions	Past accidents and large emergency planning zones fuel **public opposition and legal battles**	Requires **8,000-12,000 skilled craft workers** that are often in short supply
SMRs	**Lower capital exposure & phased investment** **$2-4B cost for follow-on units** mitigates capital risk; staged projects enable earlier revenue generation	**Prefabricated modules** **Factory fabrication** shortens build cycle and improves quality	**Small footprint & safe design** Passive safety features, compact footprint, and lower carbon power **helps build trust with regulators and communities**	**Offsite construction & standardization** Off-site manufacturing reduces **on-site labor to 1,000-1,600** and minimizes field variability

Source: GVH internal analysis

SMR with the advantages of both large-scale nuclear power and smaller-scale power projects

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Modularity
Ease of transportation and connection to infrastructure of the modules result in a more cost-effective alternative to quick to develop and cheaper than plants Conventional.

Lower capital investment
Smaller components and produced the lower the cost of a factory, the lower the plant capacity size will be translates as lower CAPEX.

Location flexibility
Greater flexibility for location than plants due to the small size of the module and need for less infrastructure.

SMR

High efficiency
SMR can be easily integrated into existing networks it provides stability **and** baseload loading attractive alternative to complement the intermittency of traditional renewables.

Safety and clean energy
Free energy production alternative with improved carbon footprint, with better safety and smaller environmental footprint than conventional plants.

International market
Development of standardized designs brings both suppliers and buyers several benefits.

Source: IAEA

BWRX-300: A simpler, safer SMR based on proven technology

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PROVEN

Decades-tested, licensed, fuel-ready nuclear platform

- Builds on 10th-generation BWR technology with 2,500+ reactor-years of operating experience
- Direct design lineage from ESBWR: licensed Gen III+ reactor with NRC-approved passive safety systems
- Uses GNF2 fuel—standardized, widely deployed, no HALEU required

SIMPLIFIED

Fully passive safety with no operator reliance

- 50% reduction in safety-related construction volume compared to competitors
- Off-the-shelf components and standardized design enable faster, lower-risk construction
- Compact power block and minimal land use reduce siting and grid complexity

INNOVATIVE

Smaller, faster, cheaper by intentional design

- Natural circulation cooling eliminates need for pumps, safety-related diesel gensets, or external power during accidents
- Passive Cooling System removes decay heat for 7 days with no operator action
- Integral isolation valves and simplified safety systems reduce failure modes and operator burden

Cost-effective, deployment-ready SMR

BWRX300

Source: GVH internal analysis

Innovative application of existing technology

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Reactor Pressure Vessel with Integral Isolation Valves

Integral Isolation Valve

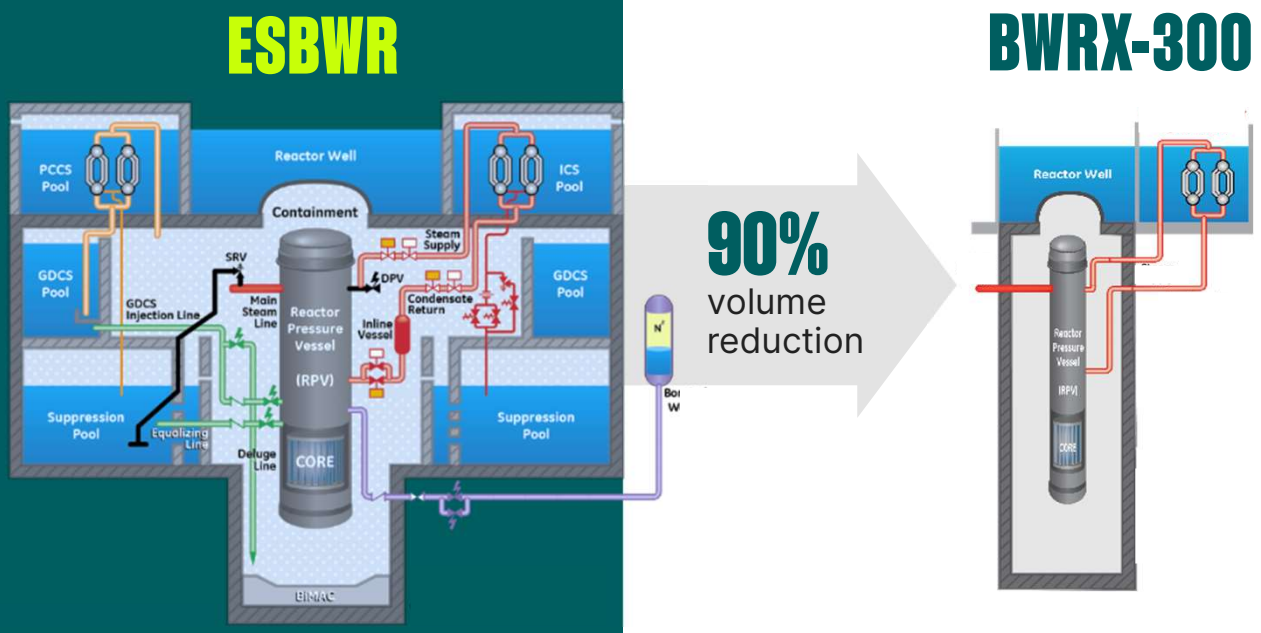
- Part of ASME code boundary for vessel
- Double isolation … independent actuators
- Minimizes inventory loss for large breaks … Loss of Coolant Accident (LOCA)
- Patented/NRC approved
- **Integral isolation and cooling strategy by combining with passive safety (natural circulation) Isolation Condenser System (ICS)**

Isolation Condenser System

- Defense-in-Depth with redundancy and diversity … 3 x 100% trains
- Provides overpressure protection
- Removes decay heat while maintaining water inventory
- Passive safety with no operator action or power… coping time of more than 7 days
- Enables dramatic design simplification and elimination of unnecessary systems

BWRX-300 is a breakthrough innovation driving dramatic simplification and cost reduction

- Patented innovation drives simplicity
- Enables dramatic design simplification and elimination of unnecessary systems
- Leads to more than 50% reduction in construction materials per MW
- Game-changing cost reduction – competitive with other generation sources



Source: GVH internal analysis

From concept to construction:
Customers are choosing BWRX-300 to solve their challenges

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Wide Global Interest

synthos green energy
ONTARIO POWER GENERATION
FERMI.
DUKE ENERGY.
fortum
SaskPower
VATTENFALL
AMERICAN ELECTRIC POWER
TVA
OSGE
ORLEN SYNTHOS GREEN ENERGY

"OPG is leveraging decades of nuclear energy and large project experience to deliver much-needed new, reliable electricity generation to Ontarians."[1]
Ken Hartwick,
OPG President and CEO

"TVA … [is] creating a path for other utilities who choose to build the same technology,"[2]
Dan Moul,
TVA President and CEO

1. OPG 2. World Nuclear News

U.S. utilities team up to accelerate deployment of GE Vernova Hitachi's BWRX-300 small modular reactor

Led by Tennessee Valley Authority (TVA), the coalition, which has submitted an application for $800 million in funding from the U.S. Department of Energy's Generation III+ SMR program, includes

- Bechtel
- BWX Technologies (BWXT)
- Duke Energy
- Electric Power Research Institute (EPRI)
- GE Vernova Hitachi Nuclear Energy
- Indiana Michigan Power – an AEP company
- Oak Ridge Associated Universities
- Sargent & Lundy, Scot Forge
- Other utilities and advanced nuclear project developers and the State of Tennessee

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TENNESEE VALLEY AUTHORITY LEADS coalition applying for $800 million U.S. Department of Energy SMR program grant

DUKE ENERGY TO INVEST in activities to advance the standard design and licensing of the GE Vernova BWRX-300

AMERICAN ELECTRIC POWER SELECTS BWRX-300 technology for potential deployment at power plant site in Indiana

Tier 1 application resubmitted April '25

Darlington New Nuclear Project: The first SMR project in the western world and a blueprint for success

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Project overview:

- Canada's first grid-scale Small Modular Reactor (SMR) project, first of any G7 country
- Located at Ontario Power Generation's Darlington site
- A cornerstone of Ontario's clean energy expansion

History and milestones:

- 1980s: Original Darlington Nuclear Generating Station constructed
- 2020: OPG selects GE Hitachi BWRX-300 SMR technology
- 2024–2025: Construction begins on first unit
  - **May 2025: Final Investment Decision**
- 2030: Planned commercial operation
- Sustainable Innovation with GE Vernova

GE Vernova is enabling the future of global energy—scalable, clean, and dependable nuclear power that adapts to the world's growing energy needs.

OPG Darlington New Nuclear Plant Construction

Momentum around the world: Global interest in BWRX-300 is growing

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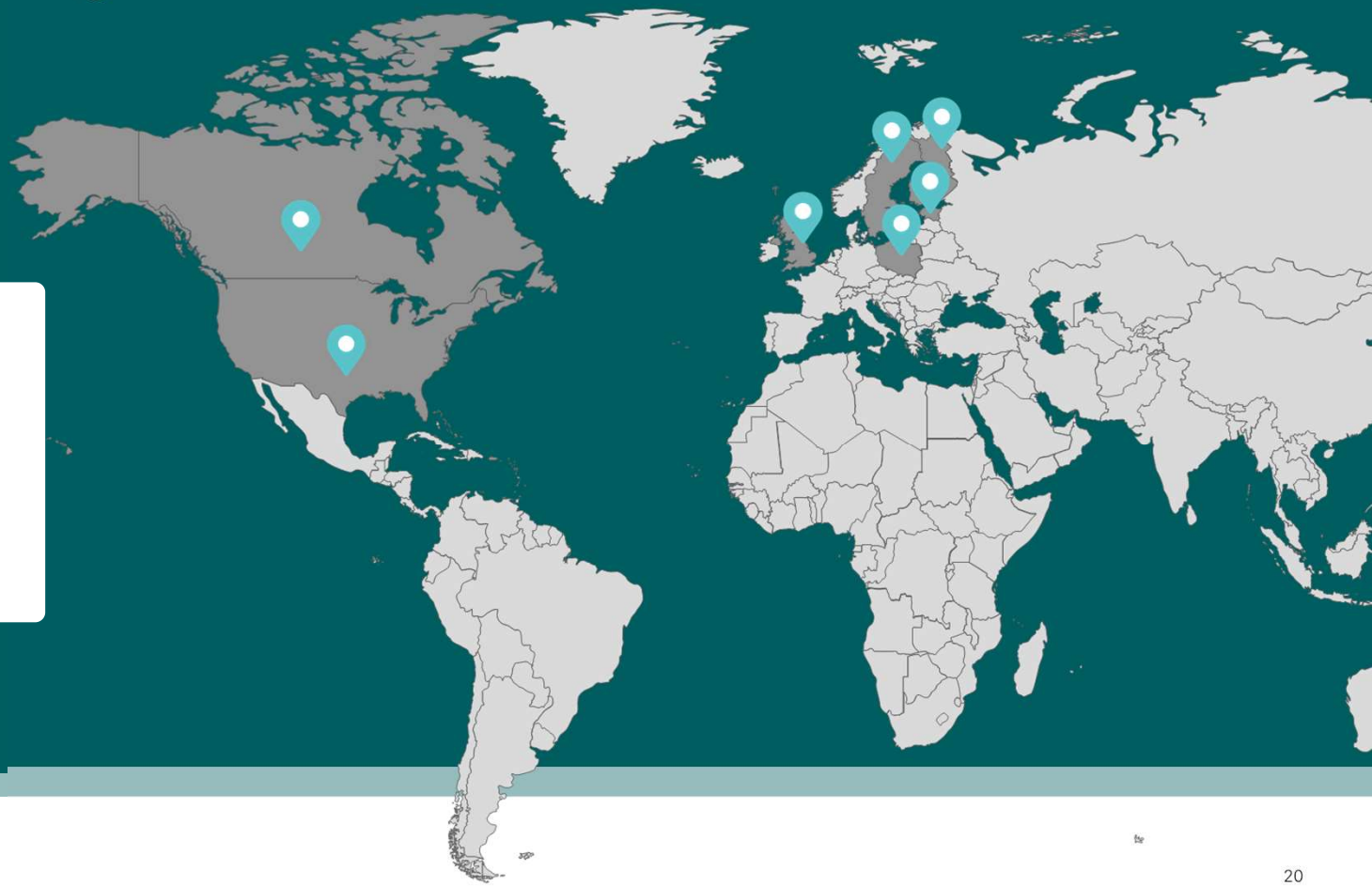
Countries with significant interest:

- Canada
- U.S.
- UK
- Estonia
- Poland
- Sweden
- Finland



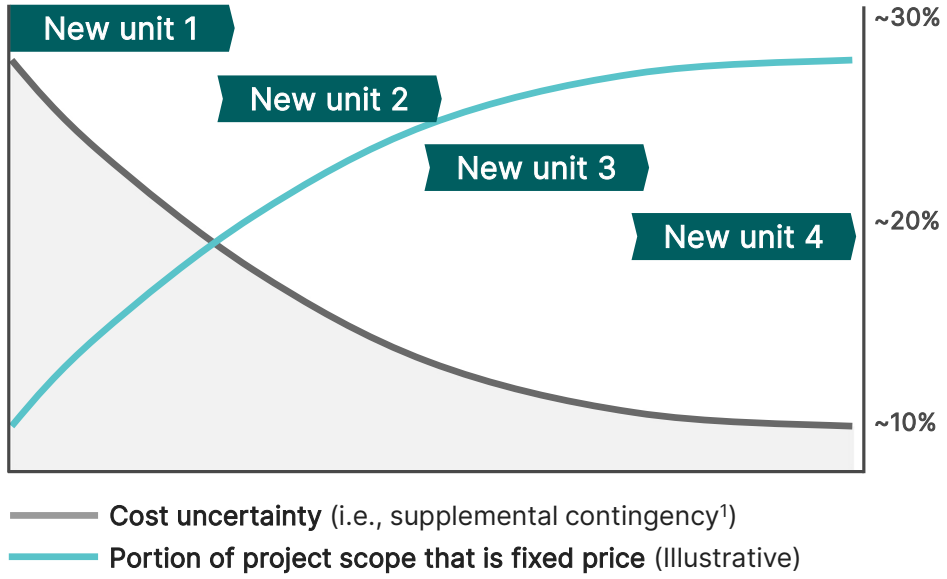
A blueprint for success: GE Vernova-Hitachi 's leading experience de-risks your deployment

GVH is de-risking every new unit and every new project by …

- Selectively improving the BWRX-300 standard design while not affecting licensing
- Building a qualified global supply chain
- Standardizing licensing and leveraging 10 generations of BWR licensing experience
- Deepening EPC partnerships to maximize and share construction learnings

Your BWRX-300 deployment will benefit from a repeatable standard design

With product/site learnings post-FOAK, uncertainty decreases and potential for price firming increases



1. Illustrative supplemental contingency as a measure of cost uncertainty throughout the project lifecycle

Five key phases define the end-to-end BWRX-300 project lifecycle

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Pre-development	Development	Pre-construction	Construction	Operation
Align stakeholders, secure development financing, and select contractors/technology to begin project development	Advance design and regulatory/licensing effort to position for Construction Permit Application; begin long-lead item procurement	Finalize design and regulatory filings to position for Final Investment Decision; site preparation and construction readiness	Execution of construction activities, quality assurance, and licensing support culminating in mechanical completion, fuel loading, and operational testing to achieve first power	Commercial plant operation, maintenance and servicing, performance management and optimization, refueling

KEY TOPICS TO FOLLOW ...

From first interest to first power and beyond:
Key project milestones and activities

From first interest to first power and beyond:
Illustrating roles throughout the project

FID lookahead: **GVH is your partner in defining the building blocks of the FID business case**

INITIAL STEPS:
Kickstarting pre-development

Schedule: A realistic and repeatable delivery schedule*

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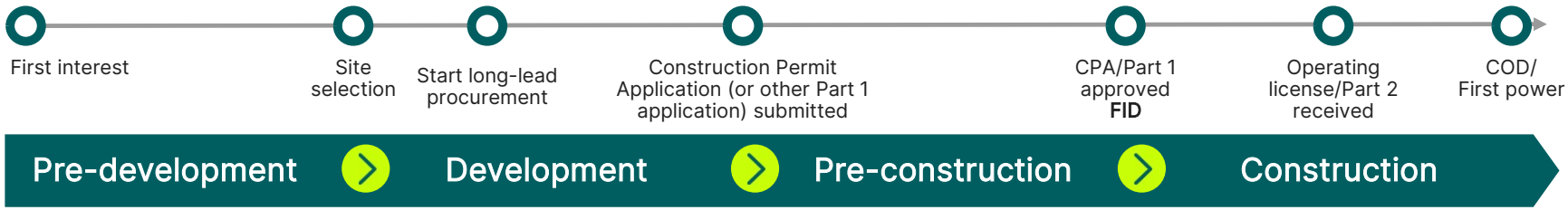
Site A: ~7-8 yr. schedule estimate for Unit 1 will improve to under 4 years by Unit 4



Note: Units are not deployed in parallel, sequencing overview to follow

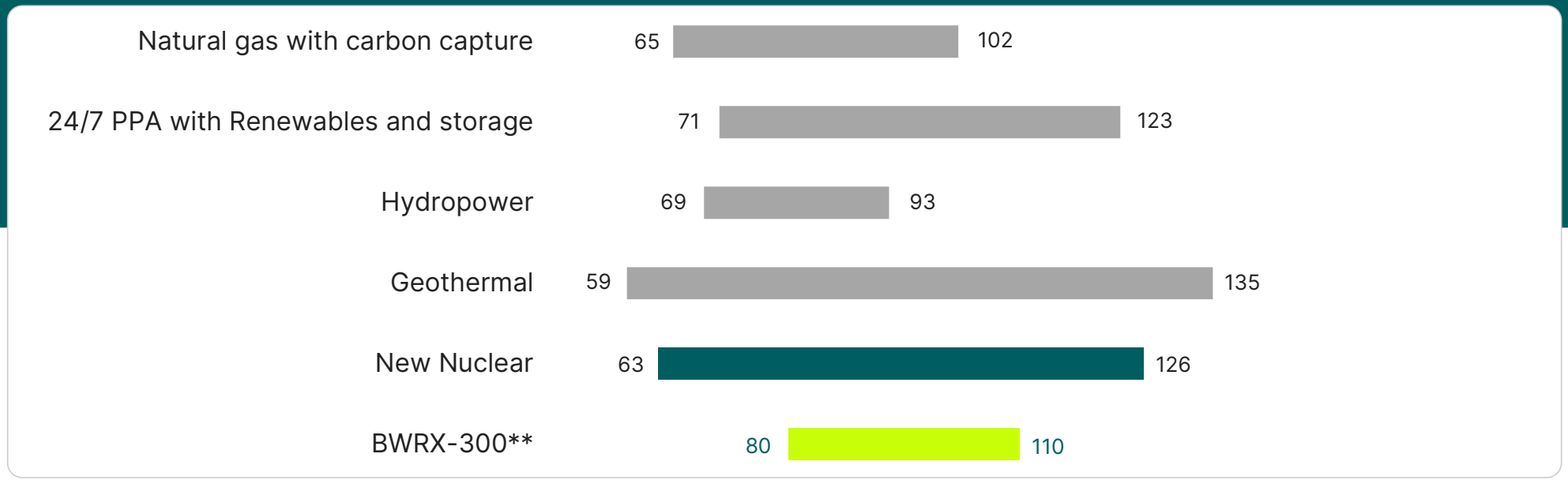
Unit 1: ~7-8 yrs.	~6 months	~6 months	~18 months	~48 months
Unit 2: ~4 yrs. 9 mos.	-	~6 months	~9 months	~42 months
Unit 3: ~4 yrs.	-	~3 months	~6 months	~39 months
Unit 4: ~3 yrs. 9 mos.	-	~3 months	~6 months	~36 months

GE Vernova-Hitachi and partners are actively evaluating accelerated schedule options

*Indicative for a reference project, does not reflect a project-specific commercial offer

Cost: Clear and comparable project LCOE*

On a levelized basis, BWRX-300 is directly competitive with other sources of firm lower carbon power



Sources: US DOE, Pathways to Commercial Liftoff: Advanced Nuclear, September 2024, GVH analysis
* Ranges are generally "early of a kind," meaning between FOAK and NOAK
** High-end represents first unit of U.S. multi-unit reference project, Low-end represents 5th unit of U.S. multi-unit reference project.
Normalized to DOE assumptions for New Nuclear – 80% debt financing @5%, 30% ITC, 5-year MACRS applied.

Contracting: Flexible contracting models can share and manage risk

Recommended for early deployments

	Integrated Project Delivery (IPD)	EPC(M)[1] COST-REIMBURSABLE	EPC(M)[1] FIXED-PRICE
SMR-specific considerations	Creates a pooled risk environment for SMR construction and repetitive unit delivery; can adapt quickly to FOAK lessons for follow-on units.	More efficient governance structure; adapts many of the EPC contracting structures while retaining cost-reimbursable nature. Power block delivery team could enter into an **overarching alliance agreement** among other project vendors for overall project success.	Provides a single point of responsibility for modular unit integration and standardized manufacturing; FOAK risks have been retired.
Risk and reward sharing	✓	✓	✗
Suitability for BWRX-300	More suitable for early deployments (inc. FOAK)		More suitable for later deployments (e.g., later units, multi-site)

Supporting financing with investing and structuring expertise

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Hybrid equity from more investors

- Round out capital stack and develop a cost overrun strategy as further project details become available

Loans and guarantees (e.g., DOE LPO)

- Secure government loan and/or loan guarantees
- Owners' consortium for overrun insurance

Tax equity funding

- Serve to create a maximally capital efficient structure for the project and materially reduce overall financing costs

Specialized asset financing arrangements

- Apply to long-lead components to smooth out capital requirements during the early stages

Transferring select project assets

- Take advantage of rate-based funding where available

GE Vernova-Hitachi Financial Services is a global leader in financing solutions

At-a-glance

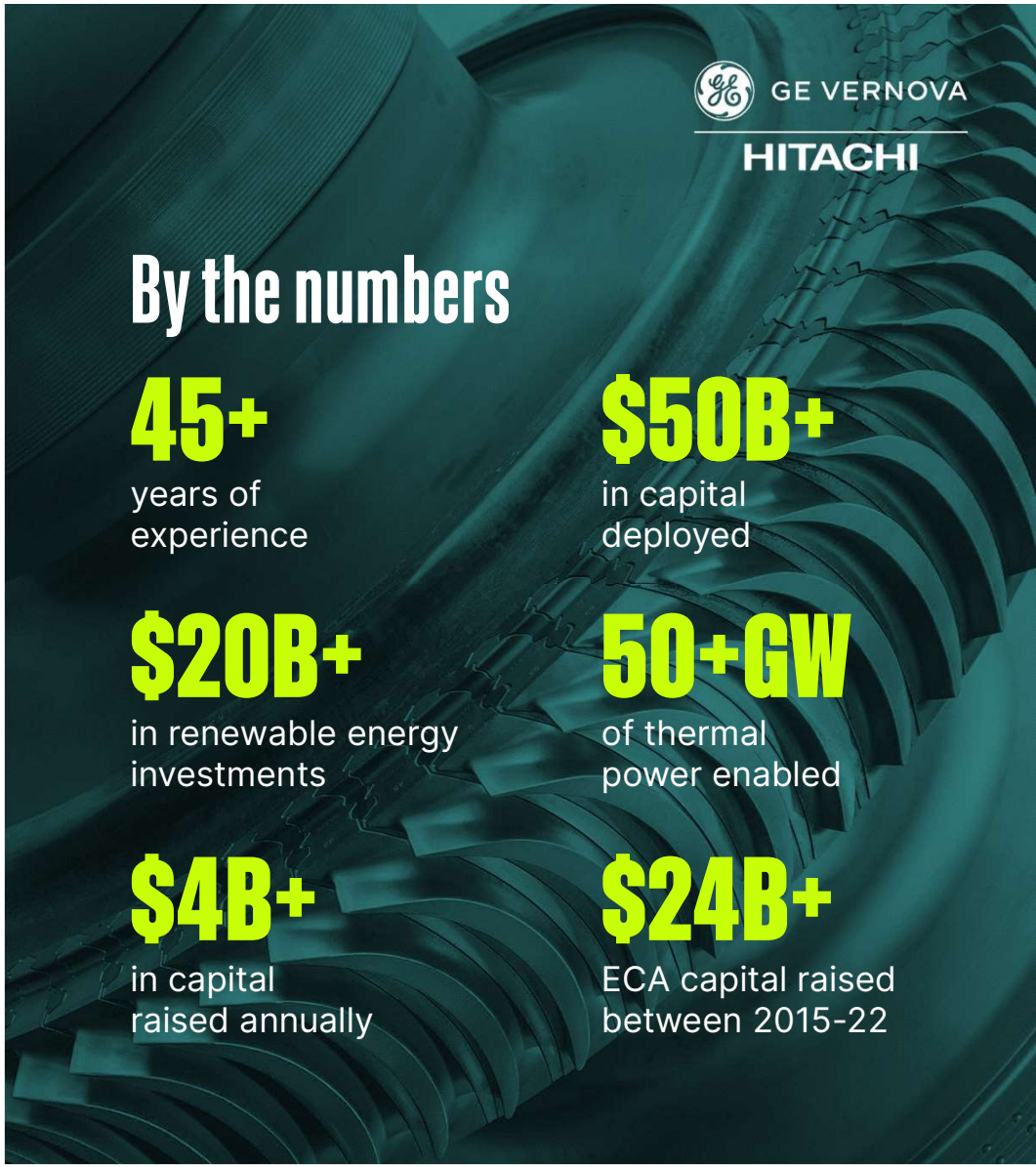
A **market leader** in energy project finance

Leading US **tax equity** investor

Deep access to the global **capital markets**

Customized deal structuring

Backed by GVH's strong **industrial brand**



BWRX-300 sourcing & supply chain strategy follows three principles to enable cost and schedule certainty

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Standardized

BWRX-300 standard design allows for a **de-risked supply chain that benefits from learnings**

Cost-competitive

Leverage modularization and a global network of suppliers to enable **cost efficiencies**

Scalable

Grow confidence of suppliers' capabilities to reliably **deliver growing number of units per year**

COST AND SCHEDULE

CERTAINTY

Efficiently and reliably deliver **multiple BWRX-300s with cost and schedule certainty**

GE Vernova-Hitachi supply chain for construction is built on collaboration with top-tier partners around the world

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STANDARDIZED ENGINEERING AND PROCUREMENT

Equipment partners with capability and capacity

HITACHI

BWXT
BWX Technologies, Inc.

worley chemetics

Reuter-Stokes
a Baker Hughes business

VELAN

arabelle solutions
EDF GROUP

AE and engineering partners

BLACK & VEATCH

AtkinsRéalis

Sargent & Lundy

SCALABLE CONSTRUCTION

Constructors with scale to deliver

AECON

Kiewit

FLUOR

SAMSUNG SAMSUNG C&T

BECHTEL

Using proven technology

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Dryer:
Same features as ABWR* and ESBWR
Same as upgrades for existing fleet
Size nearly identical to KKM**

Steam separators:
Same as ABWR* and ESBWR
Similar to others in the BWR fleet

GNF2 fuel:
>27,000 assemblies delivered
Utilized by ~70% of BWR fleet

Control rod blades:
Same as ABWR*
Longer than ESBWR
Almost identical to latest design for BWR fleet

Reactor pressure vessel:
Same material and fabrication processes as ABWR*, ESBWR and many of the BWR fleet
Diameter almost identical to KKM**

Chimney:
Uses ESBWR and Dodewaard***
Simplified technology

Nuclear Instrumentation:
Fixed in-core Wide Range Neutron Monitors and Local Power Range Monitors

Fine motion control rod drives:
Similar to ABWR* and ESBWR

BWRX300

*ABWR fleet has combined 22+ years of operating experience | **Kernkraftwerk Mühleberg (KKM): 355 MWe BWR/4 1972 – 2019 | ***Dodewaard: 58MWe natural circulation BWR, 1969 ~ 1997

Proven components, prior testing, and operational history greatly accelerate deployment

Supply chain for major components is global and proven via OPG DNNP

Major component	Key suppliers chosen for OPG DNNP-1
Reactor Pressure Vessel	BWXT
Fine Motion Control Rod Drive	HGNE
Hydraulic Control Unit	HNGE
Large Reactor Internals	HGNE
Integral Isolation Valve	Velan
Isolation Condenser System	Chemetics
Steam Turbine & Generator	EDF Group

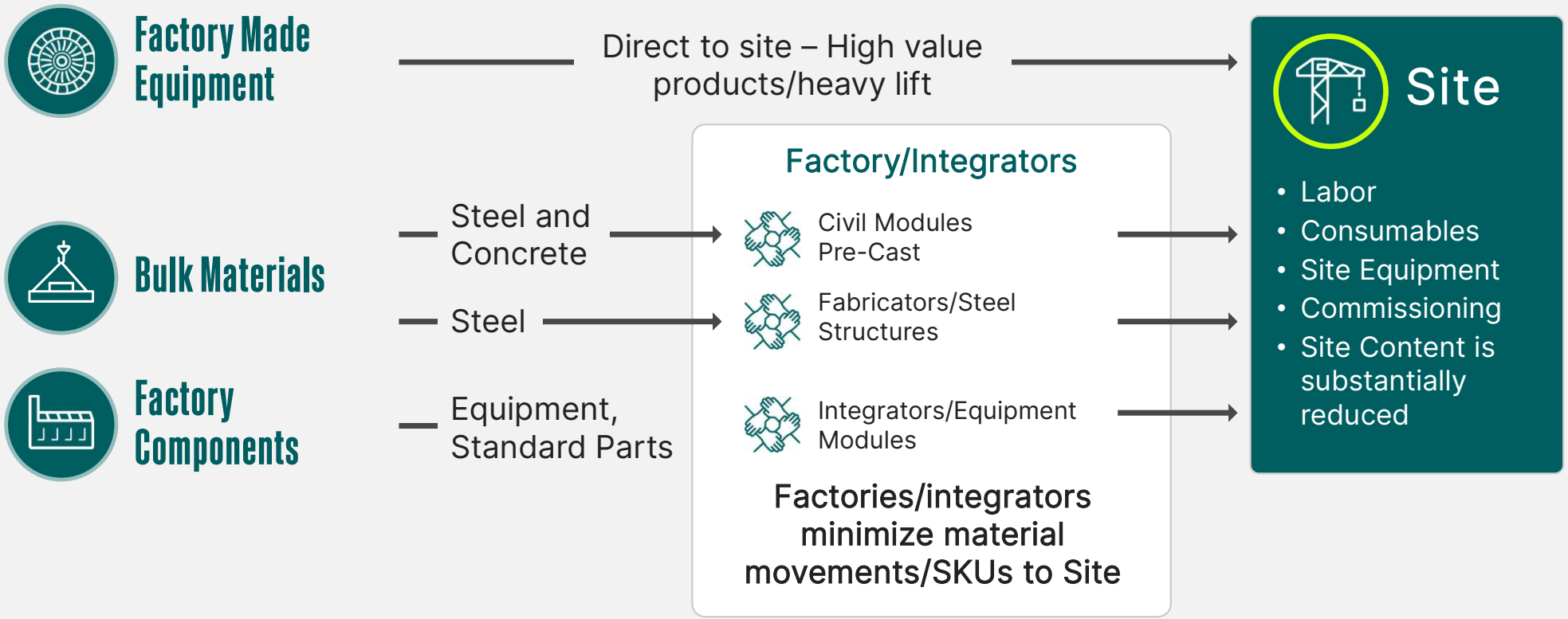
Future global supply chain

GLOBAL BWRX-300 SUPPLY CHAIN will be scaled from the foundation developed for Darlington

Additional detail:

- **GNF2 Fuel, Safety Controls and Control Rod Blades manufactured in-house by GVH** (Wilmington NC)
- **GVH has fuel capabilities in EU, USA, and Japan to serve a global footprint**

Detail: Modularization focuses on movement of high-value goods to site instead of materials



BWRX-300 licensing approach is in practice globally

North America

United States (US)

Tennessee Valley Authority (TVA)

- Planning and preliminary licensing underway for potential deployment of a BWRX-300 at the Clinch River Site near Oak Ridge, Tennessee
- PSAR[1] /CPA[2] has been submitted to USNRC[3] in May 2025 (accelerated from June 2025)

Canada

Ontario Power Generation (OPG)

- Early site preparation completed for deployment of the first BWRX-300 small modular reactor at OPG's Darlington site. Three additional units planned
- PSAR/LTC[4] Approved by CNSC
- POSAR/LTO[5] is under development

SaskPower

- Entered an agreement with GVH to collaborate on project planning and to share expertise for the BWRX-300.
- PSAR under development by GVH. (SaskPower Lead)

Europe

Poland

- Orlen Synthos Green Energy (OSGE) worked with government of Poland to approve six locations for construction of 24 BWRX-300 SMRs
- Generic PSAR is under development

United Kingdom (UK)

- Generic Design Assessment (GDA) under Office of Nuclear Regulations (ONR) review – anticipated completion 2025

Sweden/Finland

- Vattenfall down selected GVH as one of two candidates for SMR selection

Note: Pre-licensing activities (without a site) are typically led by OEM, site-specific licensing activities are led by customers / 1. Preliminary Safety Analysis Report; 2. Construction Permit Application; 3.US Nuclear Regulatory Commission; 4. License to Construct; 5. Pre-Operational Safety Analysis Report/License to Operate

US licensing: BWRX-300 licensing path is more flexible and streamlined than others' Part 52 approach

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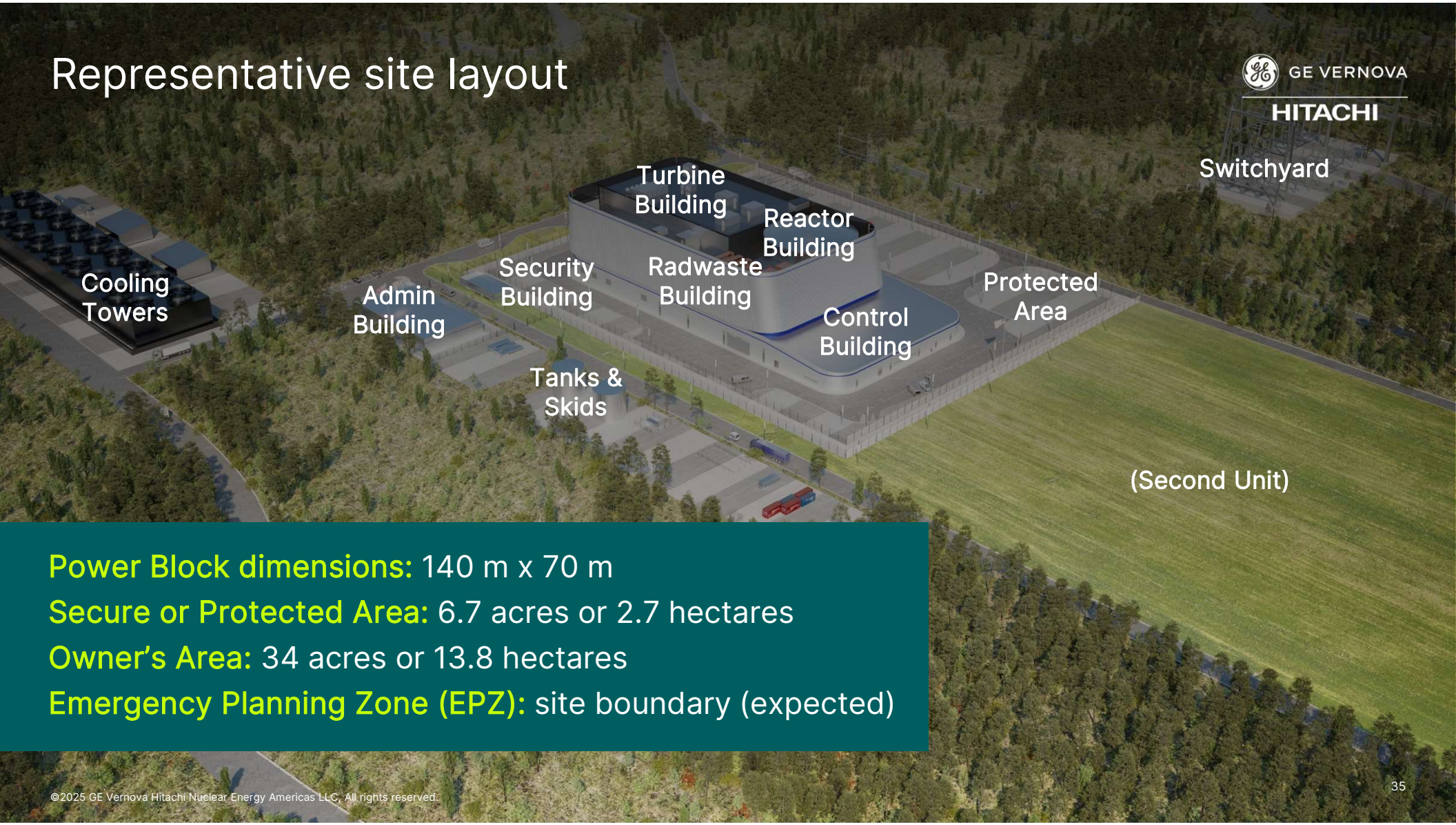
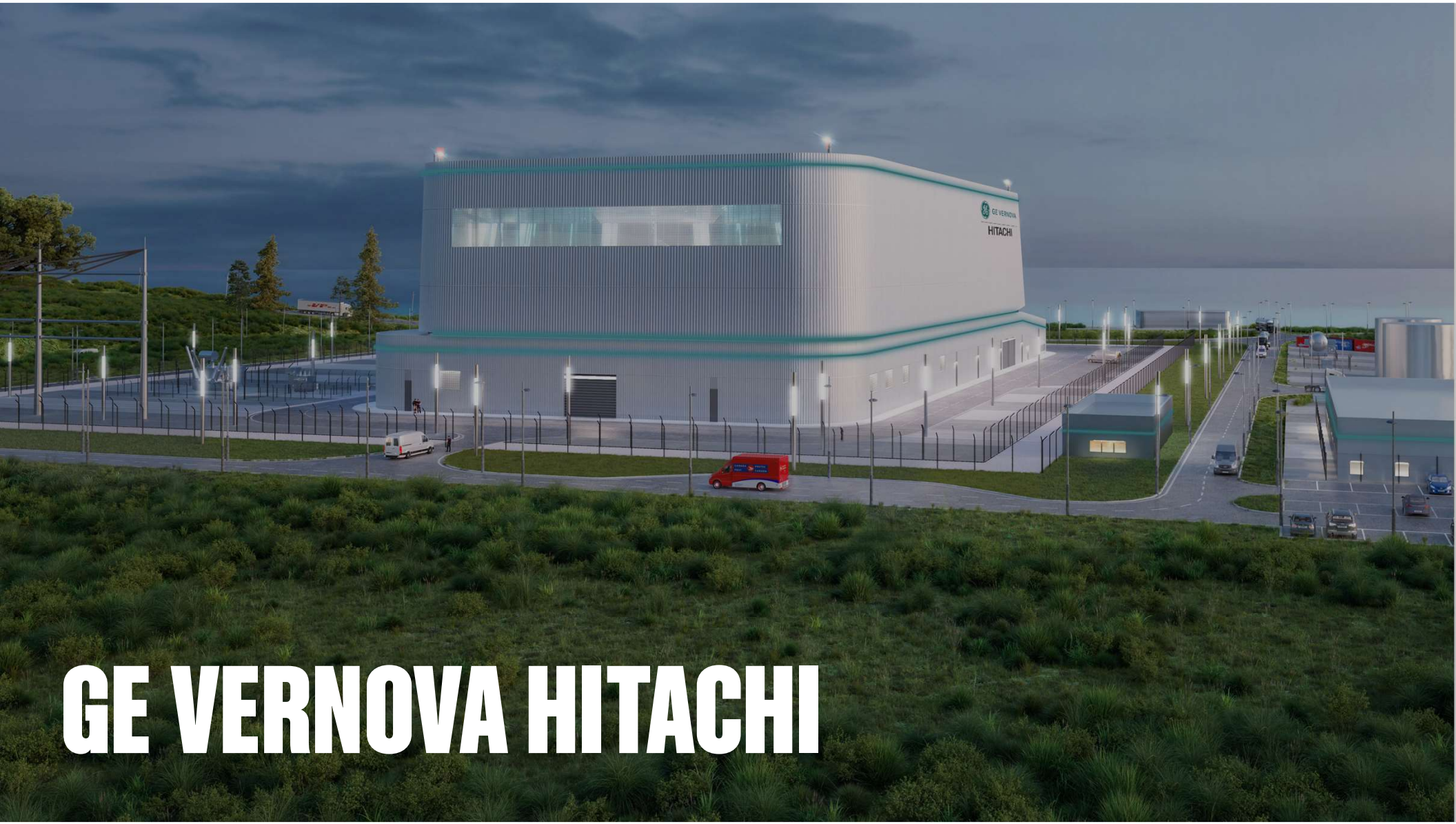
As used by BWRX-300

Key Factor	Part 52 Approach	Part 50 Approach
Upfront approval gives investment credibility for new reactor designs	Yes	No
Design approval can de-risk lack of regulatory familiarity (e.g., for non-US designs)	Yes	No
Construction can start before final operating license is received	No	Yes
Operating license application reflects as-built plant	No	Yes
Site can be licensed before design is finalized	No	Yes
Suited for integrating product design learnings	No	Yes
Project execution can be de-risked in phases	No	Yes

Representative site layout



Power Block dimensions: 140 m x 70 m
Secure or Protected Area: 6.7 acres or 2.7 hectares
Owner's Area: 34 acres or 13.8 hectares
Emergency Planning Zone (EPZ): site boundary (expected)



GE VERNOVA HITACHI