Westinghouse

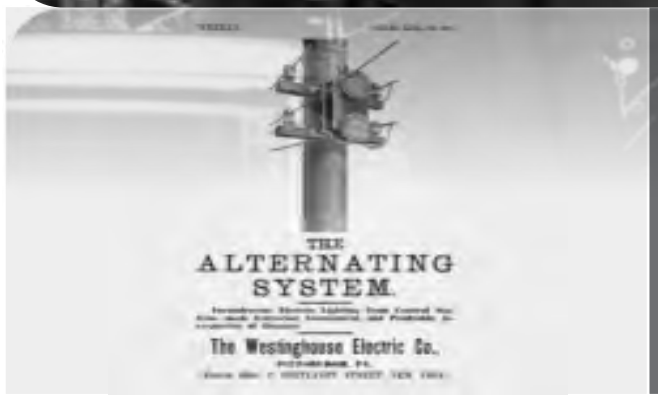
Westinghouse

SNUS April 2026

Petr Brzezina

President, Czech Republic and Slovakia

Westinghouse History



THE INNOVATION CONTINUES

140

YEARS LATER

- Founded by George Westinghouse in 1886

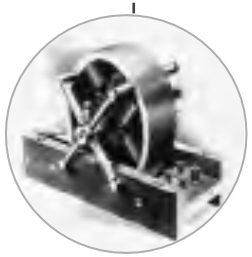
Westinghouse established **59** other companies

He received over **360** patents for his work

- Responsible for some of the world's greatest advances in energy technology
- World's first commercial pressurized water reactor (PWR) in 1957 in Shippingport, Pennsylvania, U.S.

Legacy of Innovation – 140 years

1886



Westinghouse founded after **alternating current system** discovered

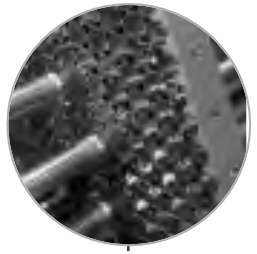
1957

Designs **first U.S. commercial NPP** in Shippingport, Pennsylvania (USA)

2018

First of four **AP1000®** **reactors** begins commercial operation in China

2019



Ukraine's Zaporizhzhia NPP becomes first nuclear reactor loaded exclusively with Westinghouse **VVER-1000 fuel**

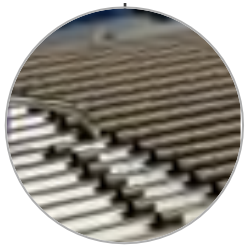
2020

First to install a **3D-printed component** inside of a nuclear reactor

2022

Acquires BHI Energy, becoming the world's **first end-to-end provider of products** and services for the full nuclear plant lifecycle

2023



ADOPT™ **accident tolerant fuel** receives regulatory approval

2023

Announces **AP300™ Small Modular Reactor** (SMR) based on proven AP1000 technology

2023

Announces first Canadian **eVinci™ Microreactor** targeted for Saskatchewan and FEEED contract with U.S. Dept. of Energy

Westinghouse Advantage

Over 70 years of experience developing & implementing new nuclear technologies that enable reliable, clean, safe and economical sources of energy for generations to come.

12,000+ employees located in 23 countries

+90 global best-in-class nuclear & fuel manufacturing facilities

~50% of the world's nuclear power is generated using our technology

6 Gen III+ reactors in operation globally plus **14** more under construction

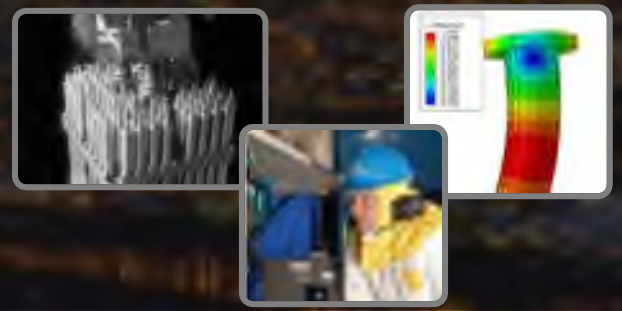
2 Business Units

New Plants

Uniquely focused on the industrialization and execution of new plant projects

Operating Plants

Dedicated to the delivery of our products and services to our operating fleet customers



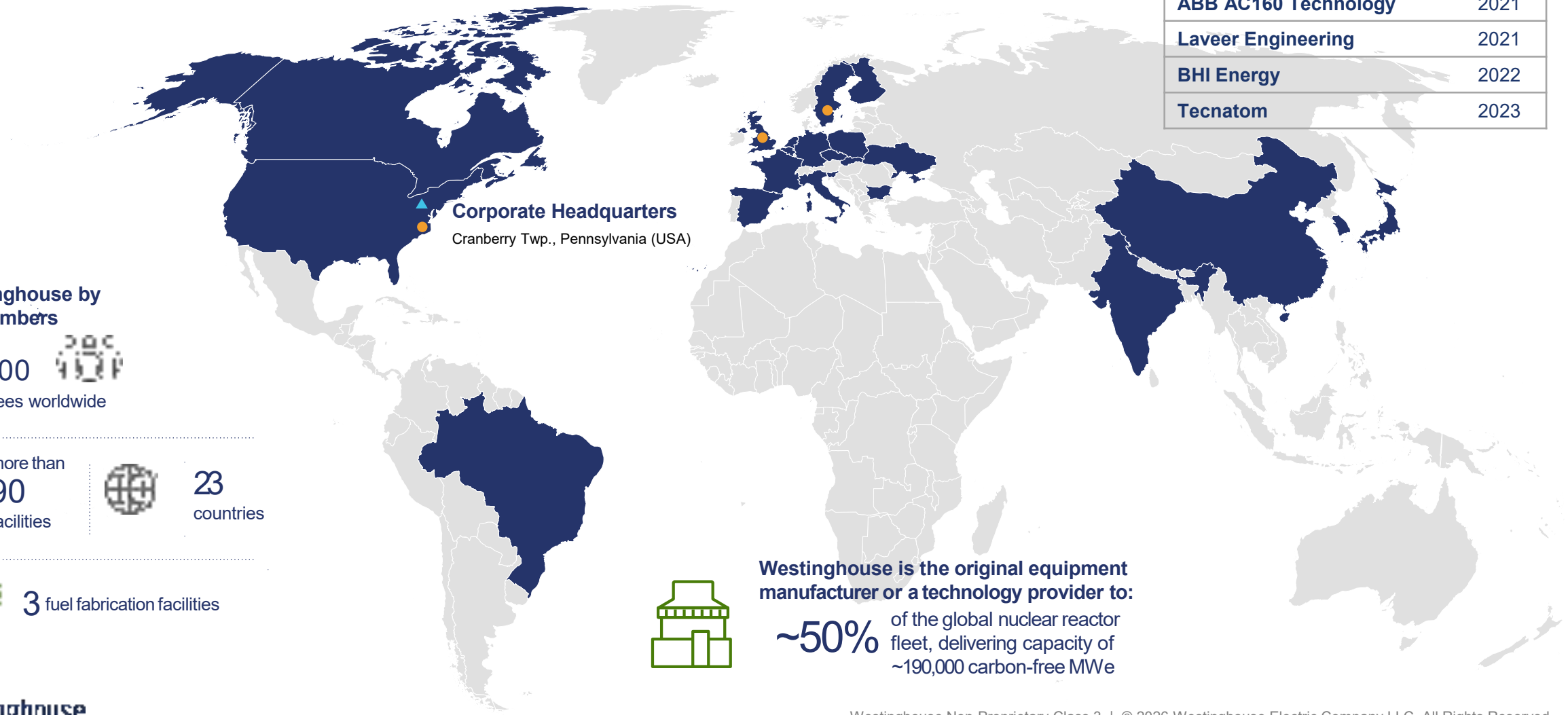
Westinghouse

Global Presence

Legend

- Corporate Headquarters
- Countries with Westinghouse Presence
- Westinghouse Fuel Fabrication Facilities

Strategic Acquisitions	Year
NA Engineering	2019
Inspection Consultants Ltd.	2019
Rolls Royce Civil Nuclear	2020
Paul Fabrications	2020
ABB AC160 Technology	2021
Laveer Engineering	2021
BHI Energy	2022
Tecnatom	2023



Westinghouse by the Numbers

12,000 employees worldwide

more than 90 facilities

23 countries

3 fuel fabrication facilities

Westinghouse is the original equipment manufacturer or a technology provider to:

~50% of the global nuclear reactor fleet, delivering capacity of ~190,000 carbon-free MWe

Westinghouse

Westinghouse

Presence in EMEA

Westinghouse by the Numbers

4,900+ employees in EMEA

more than 40 facilities

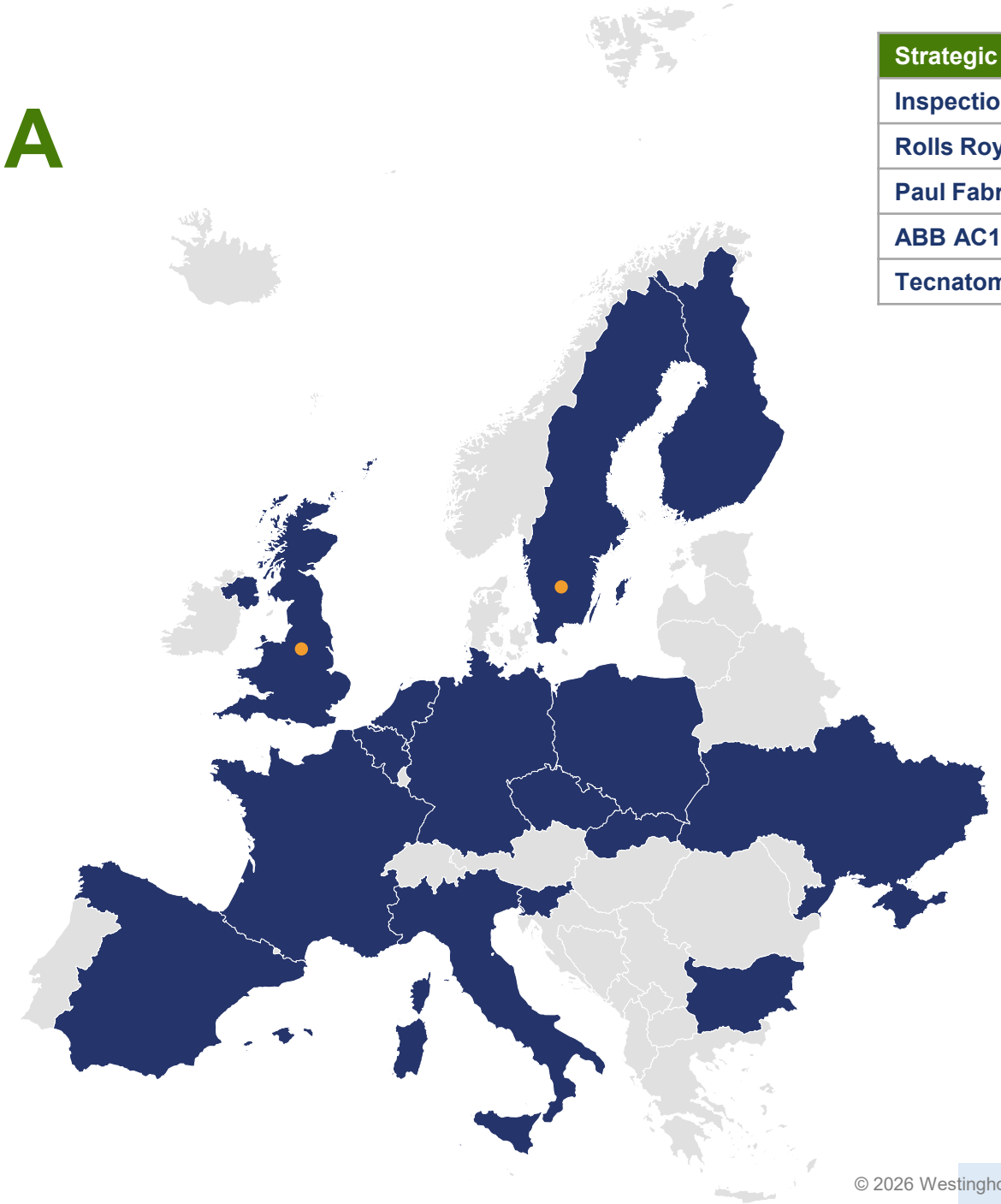
15 countries

2 fuel fabrication facilities

Westinghouse is the original equipment manufacturer or a technology provider to:

~50% of the global nuclear reactor fleet, delivering capacity of ~190,000 carbon-free MWe

Strategic Acquisitions	Year
Inspection Consultants Ltd.	2019
Rolls Royce Civil Nuclear	2020
Paul Fabrications	2020
ABB AC160 Technology	2021
Tecnatom	2023

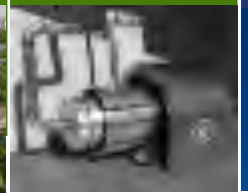


Westinghouse

Full Suite of Nuclear Technology & Services

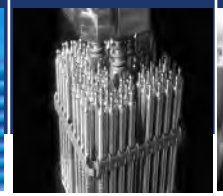
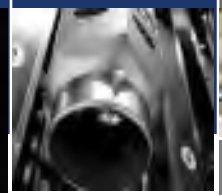
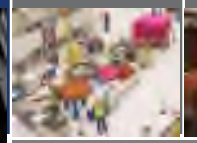
Develop & Deploy Leading Carbon-Free Technology

Design and Build

AP1000 Reactor	AP300 SMR	Energy Storage	eVinci Microreactor
			

Lead All Phases of the Nuclear Operating Plant Lifecycle

Operations and Maintenance

Americas PWR	EMEA/Asia PWR	BWR	VVER	Outage & Maint. Svc.	Engineering Services	I&C	Parts
							

Long-term Operations

Global Operations Services

supports predictable delivery across all business while optimizing global resources and our supply footprint

Provide carbon-free advanced reactor technologies that enable the flex-load, carbon-free grid of the future to commercial and government clients

Maintain leadership in PWR and grow BWR, VVER and other advanced fuel capabilities

Achieve market leadership in digital products and services through innovation and increase penetration of OEM and non-OEM parts market

New Plants Portfolio

Meeting custom ergy landscape

AP1000® PWR
~1200+ MWe

AP300™ SMR
330 MWe

eVinci™ Microreactor
5 MWe

Long Duration Energy Storage
8 hours to 200 hours

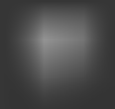
Our reactors can also deliver beyond electricity benefits

Hydrogen Generation and Process Heat

Radioisotope Production

Fuel Cycle Closure and Waste Recycle/Reduction

AP1000 best technology for Jaslovske Bohunice



AP1000 proven technology

China Power Investment Corp | Shandong China

Haiyang 1 & 2 are enabling the switch to clean energy

Customer Overview

2 AP1000 PWR units in operation since 2018

Haiyang 1: Net Capacity: 1,170 MWe Commercial Operation: Oct 2018
Haiyang 2: Net Capacity: 1,170 MWe Commercial Operation: Jan 2019

Record 20 day planned outage duration (previously 57 days)

AP1000 unit output used flexibly to feed the grid and feed heat to applications

- 2020: 1st nuclear heating project in China, commercial heat to 700,000 m^2 area
- 2021: Replacement of 12 coal-fired boilers, heat to 4.5 million m^2 area
- Future Plans: Heat for large scale water desalinization

Image courtesy of Shandong Nuclear Power Company Limited (SNPC)

CNNC | Zhejiang, China

Sanmen 1 & 2 are the world's first AP1000 units

Customer Overview

2 AP1000 PWR units in operation since 2018

Sanmen 1: 1,157 MWe, Commercial Operation Sep 2018
Sanmen 2: 1,157 MWe, Commercial Operation Nov 2018

- Average availability factor above 91% since 2020
- Both units perform extensively in load follow mode during operation
- Each China AP1000 plant first planned outage has broken the China nuclear fleet record for fastest first outage duration

Georgia Power Company | USA

Plant Vogtle is the largest carbon-free generation asset in the country

Customer Overview

2 operating AP1000 PWRs

Vogtle Unit 3 : In commercial operation since July 31st 2023
Vogtle Unit 4: In commercial operation since April 29th 2024

Why Vogtle Matters to Georgia's Energy Future

"Nuclear energy is a 24/7, emission-free power source, giving us a clean energy source for Georgia homes and businesses for the next 60-80 years"

Reliability
Able to generate electricity at full power 24/7

Clean Energy
Clean energy sources that will produce zero air pollution

Growing Georgia
Providing clean, safe, reliable and affordable energy

Video courtesy of Georgia Power Company

Vogtle 3&4: Power Operations

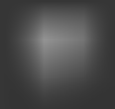
Proven components and design simplicity to achieve high availability factors

GEN III & III+ Plants	Operating Years	Avg Avail
Olkiluoto	2023	96.3%
Taishan 1	2018-20	81.9%
Taishan 2	2019-21	91.5%
Saeul 1	2018-20	68.5%
Saeul 2	2019-21	83.3%
Barakah 1	2021-23	81.4%
Barakah 2	2022-23	92.0%

AP1000 Plants	Avg Avail 2023-25
Vogtle 3	98.4%
Vogtle 4	99.2%

- AP1000 global fleet >93% avg availability
- With lessons learned and optimization – expect future AP1000 plants to achieve similar or higher plant availability factors

AP1000 best technology for Jaslovske Bohunice



Slovak unit will be the part of global and regional fleet

Westinghouse at a glance:

Global Presence

12,000+
employees worldwide

more than **90** facilities

22 countries

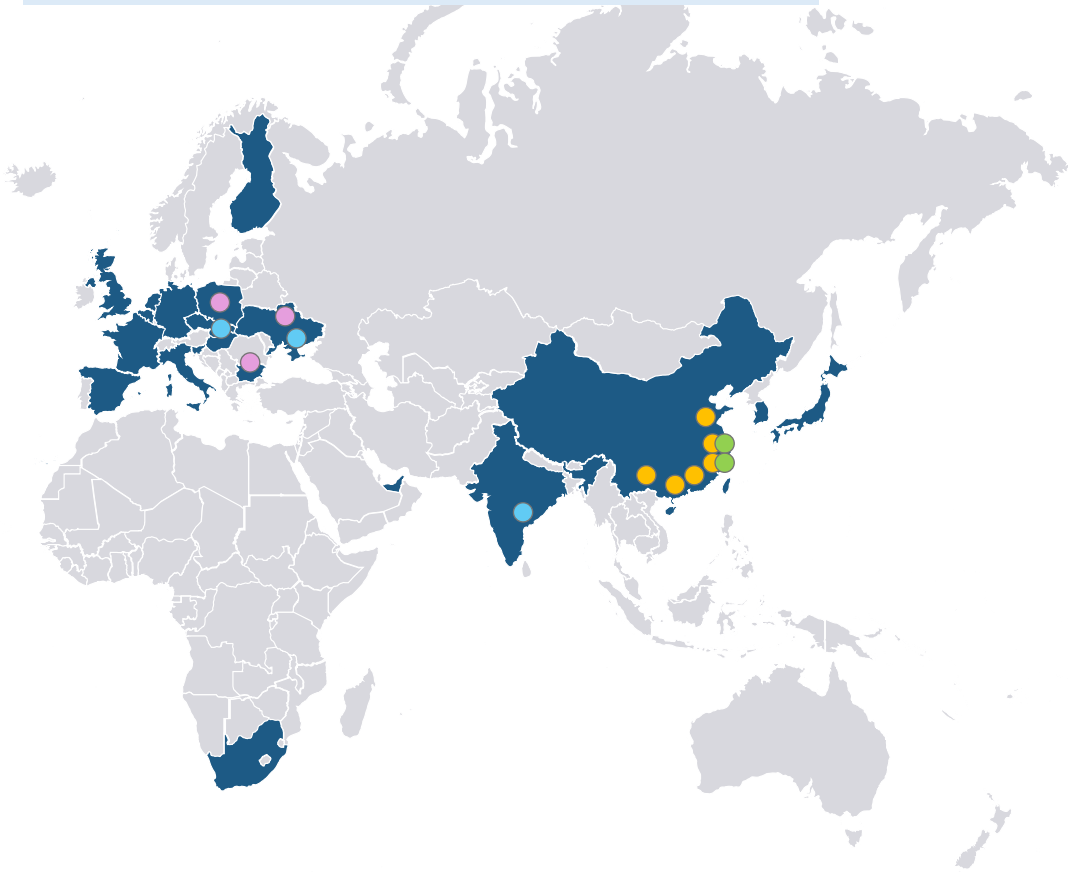
Westinghouse services
~65% of the global nuclear reactor fleet

Most advanced commercially viable reactor technology deployed globally

~2,500
Patents Awarded in 26 Countries Since 1999

Technology OEM for **~50%** of the Nuclear Operating Fleet Globally

AP1000 Reactor Projects
- 6 reactors in commercial operation
- 7 units contracted
- 14 units under construction
- 16 units technology selected



Countries with Westinghouse presence

AP1000 Selections

CUSTOMER CHALLENGES

- **Emission-free Energy**
- **Energy Security**
- **Energy Price Stability**
- **Grid Stability**

CUSTOMERS CONTINUE TO SELECT WESTINGHOUSE

Operating Reactors

- Vogtle 2 AP1000s, 1st new in USA in 30 yrs
- 4 AP1000 reactors in operation in China

Under Contract or Under Construction

- Poland contracts for 3 AP1000s
- Bulgaria contracts for 2 AP1000s
- Ukraine contracts for 2 AP1000s
- 14 CAP1000 units under construction

Technology Selected

- Slovakia selects **1 AP1000 reactor**
- India selects 6 AP1000 reactors
- Ukraine MOU to construct 7 AP1000s

Operating Reactors

Vogtle 2 AP1000s, 1st new in USA in 30 yrs

4 AP1000 reactors in operation in China

Under Construction and Contracted to Build

Restart VC Summer construction, 2 AP1000s

14 CAP1000 units under construction

Poland contracts for 3 AP1000s

Bulgaria contracts for 2 AP1000s

Ukraine contracts for 2 AP1000s

Technology Selected

$80 billion USG AP1000 project support

Fermi America selects 4 AP1000s

Energy Alberta selects 2 AP1000s

India selects 6 AP1000 reactors

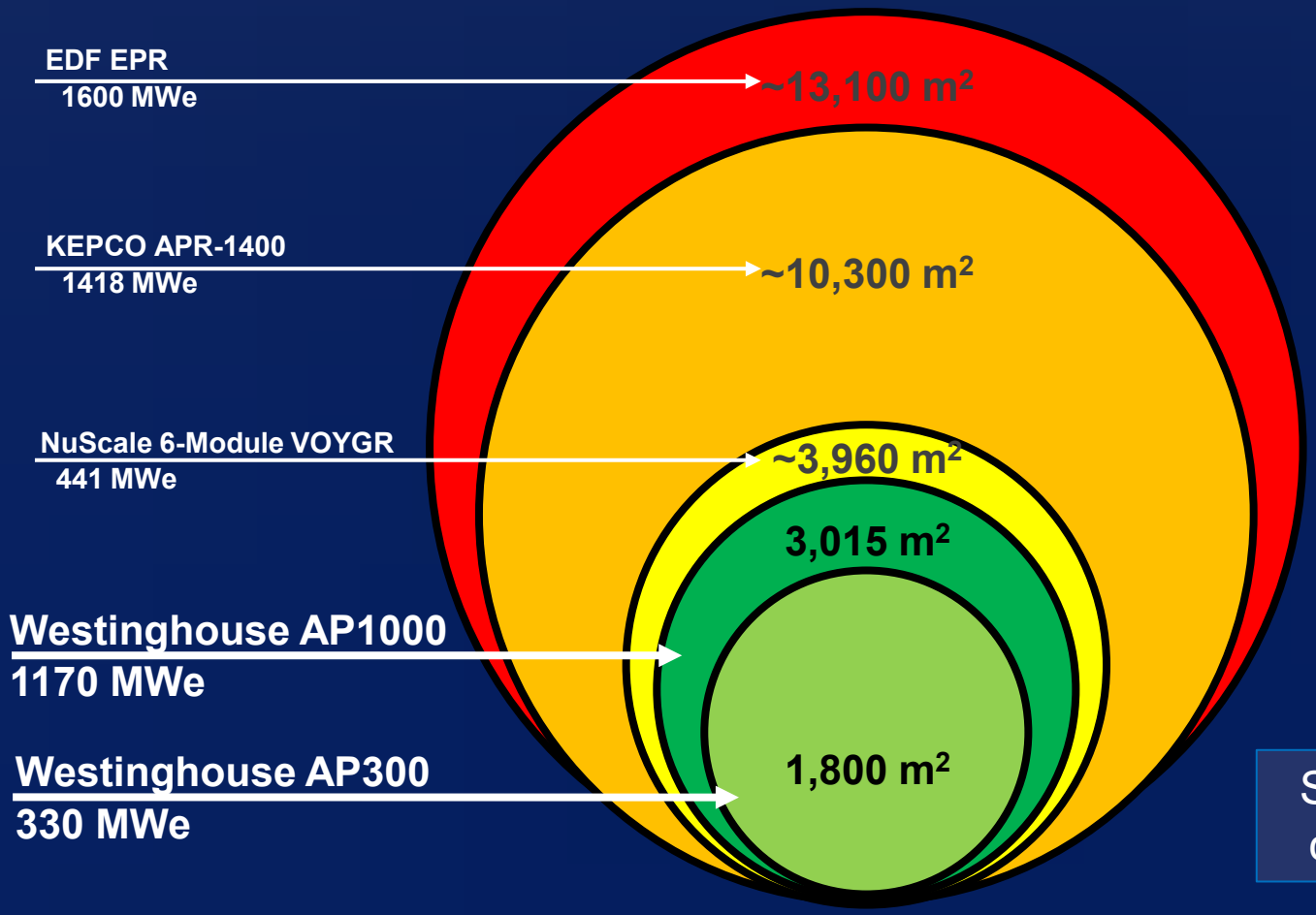
Ukraine MOU to construct 7 AP1000s

AP1000 best technology for Jaslovske Bohunice

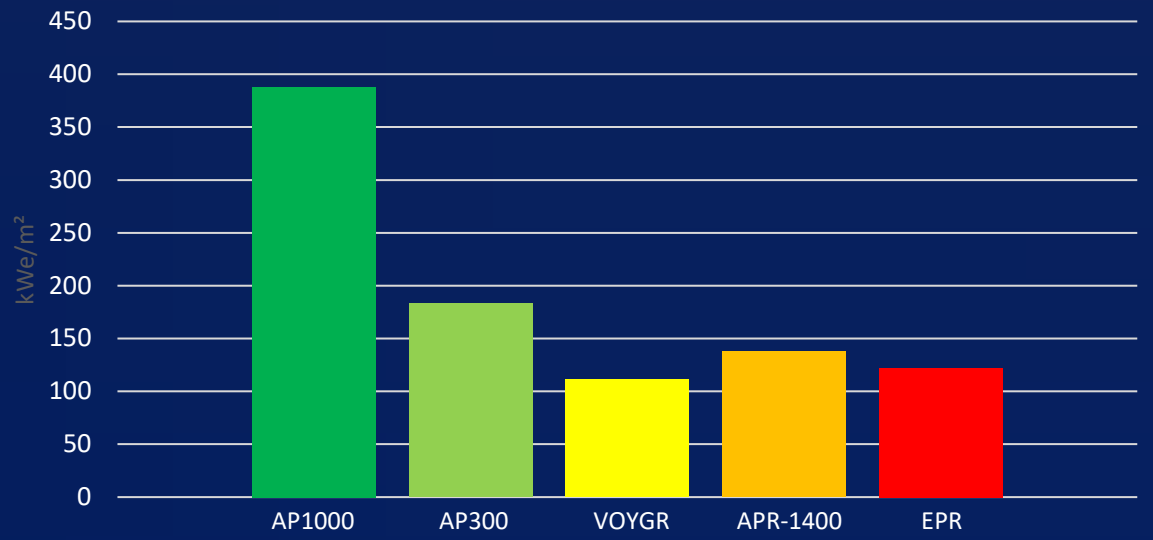
Small footprint - possibility to build a second unit in Bohunice site in future

AP1000 / AP300 Plant Industry-Leading Compact Footprint

Nuclear Island Footprint



AP1000 and AP300 plants produce more power on a per square meter basis



Smaller footprint drives lower construction quantities, commodities, and labor hours resulting in lower cost

Notes:

- Net power output for AP1000 (Haiyang), EPR (Olkiluoto) and APR1400 (Shin Kori) data from World Nuclear Association; NuScale 77 MWe power gross/module provided from www.Nuscalepower.com (net MWe per NuScale SMR Technology: An Ideal Solution for Repurposing U.S Coal)
- NuScale NI footprint per NuScale DCD (https://www.nrc.gov/docs/ML2300/ML23001A016.pdf); EPR footprint per Hinkley Point C Site Parameter plan HINK-A1-SL-00-GA-002 (https://infrastructure.planninginspectorate.gov.uk), APR-1400 footprint is per APR-1400 DCD (https://www.nrc.gov/docs/ML1822/ML18228A650.pdf). EPR footprint includes Emergency Diesel Generator buildings.

AP1000 best technology for Jaslovske Bohunice

Building a robust supply chain in Europe for the fleet - opportunity for Slovak industry not limited to Slovak unit

Westinghouse Non-Negotiables for our Suppliers

Focus and Polices around "Zero-Accidents"
Management and personnel dedication to safety first

Dedication to Excellence
Implementation and documentation of the requirements and deviations

Procurement Integrity
Compliance and prompt reporting of violations or potential violations

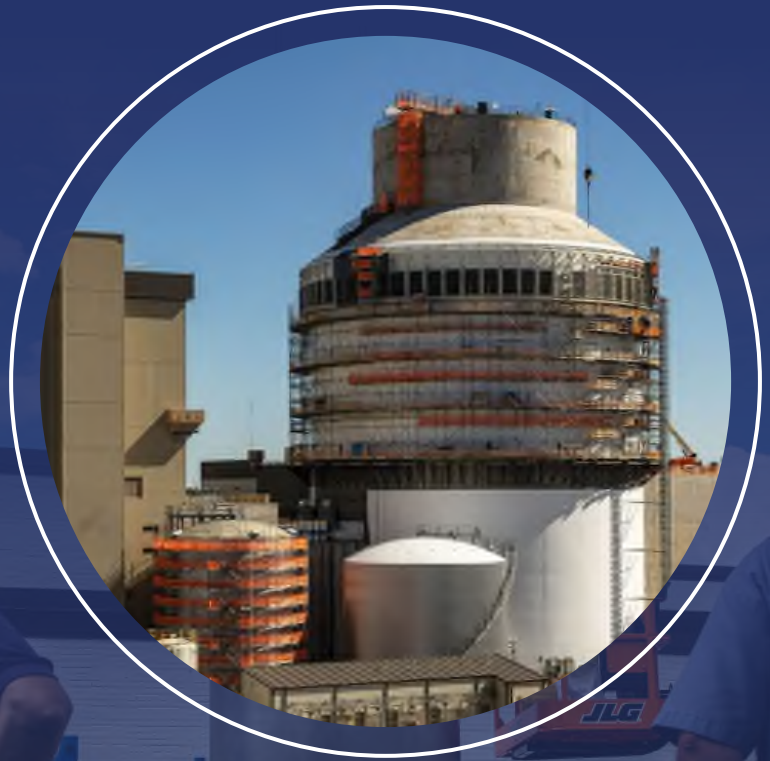
Supply Chain Partnerships

Westinghouse invites suppliers to engage with us and explore meaningful partnership opportunities that support our shared commitment to excellence.

Our Approach

We collaborate with suppliers and subcontractors as partners, working together to deliver innovative solutions worldwide.

Our success is built on a commitment to ethical, safe, and fair business practices, and we expect the same from all partners.



What We Look For

Westinghouse values supplier partnerships where our core values align with empowering ethical growth, inspiring integrity through collaboration and compliance, as well as stewardship of our people, planet and practices.

Introduction to Westinghouse Sourcing Process for AP1000®/AP300™ Plant

1 - Scope Definition
Critical requirements, export control, spec globalization needs

2 - Supplier Identification
Evaluate existing supply base and potential new suppliers considering BU potential needs for localization

3 - Preliminary Supplier Assessment
Desktop supplier evaluations, issue and review RFQ's, down select to target suppliers

4 - Technical & Quality Eval.
Detailed evaluation (gap analysis) for development needs

5 - Quality Audits
Supplier audits and onboarding to ASL/QSL

6 - Supplier Development
Address supplier gap analysis, perform qualifications (as-needed), audits finalize oversight plans

7 - Supplier Management
Oversight plan execution and surveillance

8 - Product Delivery
Predictive delivery to support construction needs

AP1000®/AP300™ Plant Supply Base Classification – Geographic Categories

Global Supplier

- Complex equipment with increased quality requirements (SR, ASME and/or EQ) and significant design impact to plant
- Large capital investment to engage in market with significant lead times (>4 yrs) driving limited global supply base
- IP constraints
- Examples include:
  - Steam Generators
  - Reactor Pressure Vessels
  - RCPs
  - RCL Piping


Squib Valve

Steam Generator


Reactor Vessel


RCP

Regional Suppliers

- Complex equipment with increased quality requirements to non-safety or commercial fabrication
- Would require significant supplier development and qualification for some commodities
- Certain commodities would require capital investment to engage in market with significant lead times (>3 yrs)
- Examples include:
  - Structural Modules
  - Shield Building Segments
  - Fuel Handling Equipment
  - Cranes, Valves, Tanks, Pumps, etc.
  - Smaller Mechanical Modules
  - Electrical/I&C Equipment



Large Structural Modules


Containment Vessel

Local Suppliers

- Typically, non-safety or commercial fabrication requirements (limited additional qualification needed)
- Lead times allow for schedule float
- Multiple Sourcing Options
- Examples include:
  - Existing global suppliers leveraging local resources
  - Significant Construction Commodities (non-WEC scope)


Non-Safety Valve


Transformers

Supplier Evaluation Process Map

Focusing on Quality and Flawless Execution as Essential Components of the Program

Regional and local suppliers are key to the success of these projects

- Improves **Efficiency and Effectiveness** by pooling resources, talent and effort collaborating in a way that creates more effective planning
- Improves **Quality of Life** by connecting individuals to more transportation, economy, housing, workforce and social activity
- **Advocates for the region** with collective voice to for policies and funding at the state and federal level that will support the region’s shared priorities.

We Buy Where We Build

Regional and local suppliers are key to the success of projects

Promotes **efficiency and effectiveness** by pooling regional resources and talent.

Improves **Quality of Life** by connecting individuals to more transportation, economy, housing, workforce and social activity.

Advocates for the region by promoting shared priorities at the state and federal levels.

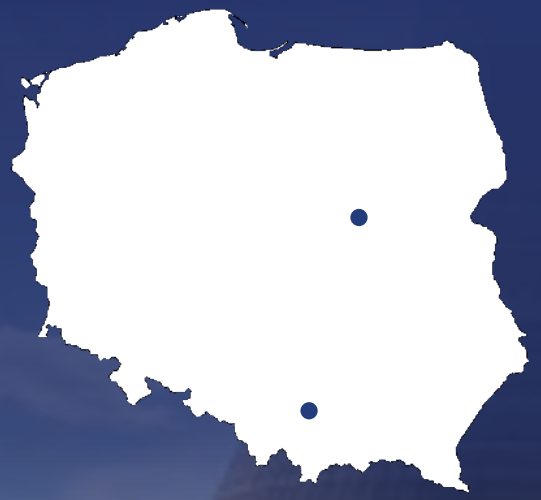
AP1000 best technology for Jaslovske Bohunice

Existing education and research capabilities for nuclear in Slovak universities and R&D institutions, attraction of new technical generation

Example Poland

Westinghouse in Poland

Nearly
400 employees



Offices in Warsaw and Kraków

Westinghouse is one of the
largest employers
in the nuclear sector in Poland

Cooperation with

National Centre for Nuclear Research

- joint research
- training programs
- workforce development initiatives

Westinghouse contributes to workforce development by:

developing nuclear engineering talent

supporting the nuclear supply chain ecosystem

promoting nuclear safety culture

Workforce Needs – Long-Term Nuclear Program

According to the PwC economic impact analysis, the deployment of six AP1000 reactors in Poland would create significant workforce demand.

KEY PROJECTIONS

~2,400 direct jobs
in the nuclear project workforce.

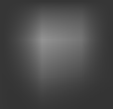
~16,300 jobs supported annually
across the Polish economy.

~204,990 person-years of employment
over the project lifecycle.

These jobs will require expertise in areas such as:

- nuclear engineering
- fuel engineering
- construction and project management
- supply chain and manufacturing
- nuclear safety and regulation

AP1000 best technology for Jaslovske Bohunice



WEC is the partner for Slovak nuclear industry for many years

Trusted Partner of Slovakia's Nuclear Industry

Decades of partnership

- Long-standing collaboration with the Slovak nuclear sector
- Support across the full lifecycle: decommissioning, fuel, new build

Local footprint

- Engineering office in Trnava (since 2017)
- Local team delivering key nuclear projects
- Know-how transfer to Slovak industry

Strategic cooperation

- Partnership with JAVYS and Slovak stakeholders
- 2023 agreements covering:
  - AP1000® reactors
  - AP300™ SMR deployment

Energy security impact

- Supports clean, reliable nuclear generation
- Enables diversification away from Russian supply

Other slides

Why Nuclear? Why Now?

Interest in nuclear power driven by shift towards sustainable energy & energy security as evidenced by favorable government policies and industry initiatives

Load Growth

Increased power demand driven by electrification, EVs, population growth and high-power data centers

Energy Price Stability

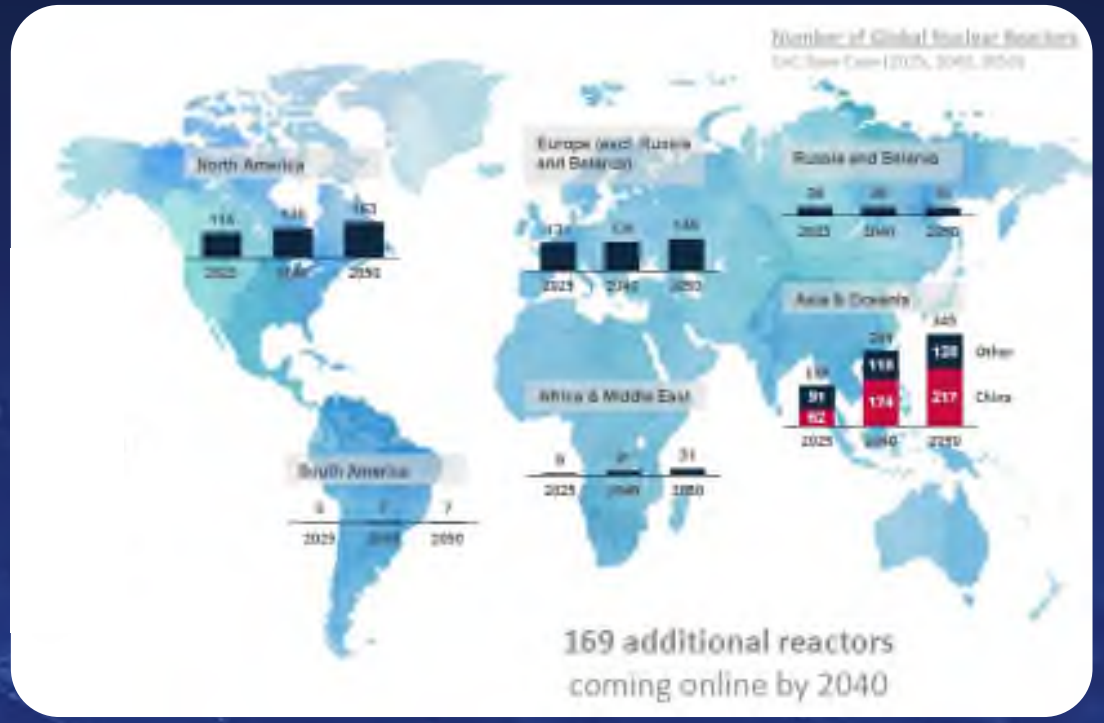
Pricing volatility of fossil fuel and variability of renewable generation output underscore baseload nuclear advantages

Energy Security

Geopolitical events have focused attention on energy security, prompting government backing

Public Acceptance

“Support for nuclear energy stays at record levels, fourth year in a row.”



Building an Equitable Energy Economy

Our vision to be the nuclear energy industry's first choice for safe and efficient solutions

- **Community Engagement:** early engagement sharing plans with region, local community and associations around skills development, job creation, climate, and safety
- **Labor Engagement:** supply chain localization strategy investing in supplier quality program enhancement and facility expansion, and innovation in new manufacturing techniques to deliver specialized equipment
- **Invest in Quality Jobs:** AP1000 and AP300 project localization strategy include skills development activities and working with local education institutions to help provide cutting-edge nuclear skills.
- **Workforce Development:** Westinghouse's world-class training programs and internship programs for local students has been created to develop the next nuclear workforce
- **Strengthening Communities:** High-skilled roles created including tradespeople, engineers, chemists and nuclear technicians, with plans to aid in the training of local employees to work at AP1000 and AP300 plants once operational.

AP1000® PWR

Most Advanced Generation III+ Pressurized Water Reactor

Westinghouse AP1000 PWR

Setting the standard with unmatched safety, economic competitiveness and enhanced operations.

Reliable

Operates 24/7/365 – no matter the weather. Proven sites operating across the globe.

Cost Effective

Simplified design means lower construction, operating and maintenance costs.

Sustainable

Provides clean, carbon-free energy.

Safe

Automated passive safety systems reduce need for operator intervention and reduce possibility of error.

Innovative

The first proven Generation III+ pressurized water reactor + passive safety plant.

Ingenious

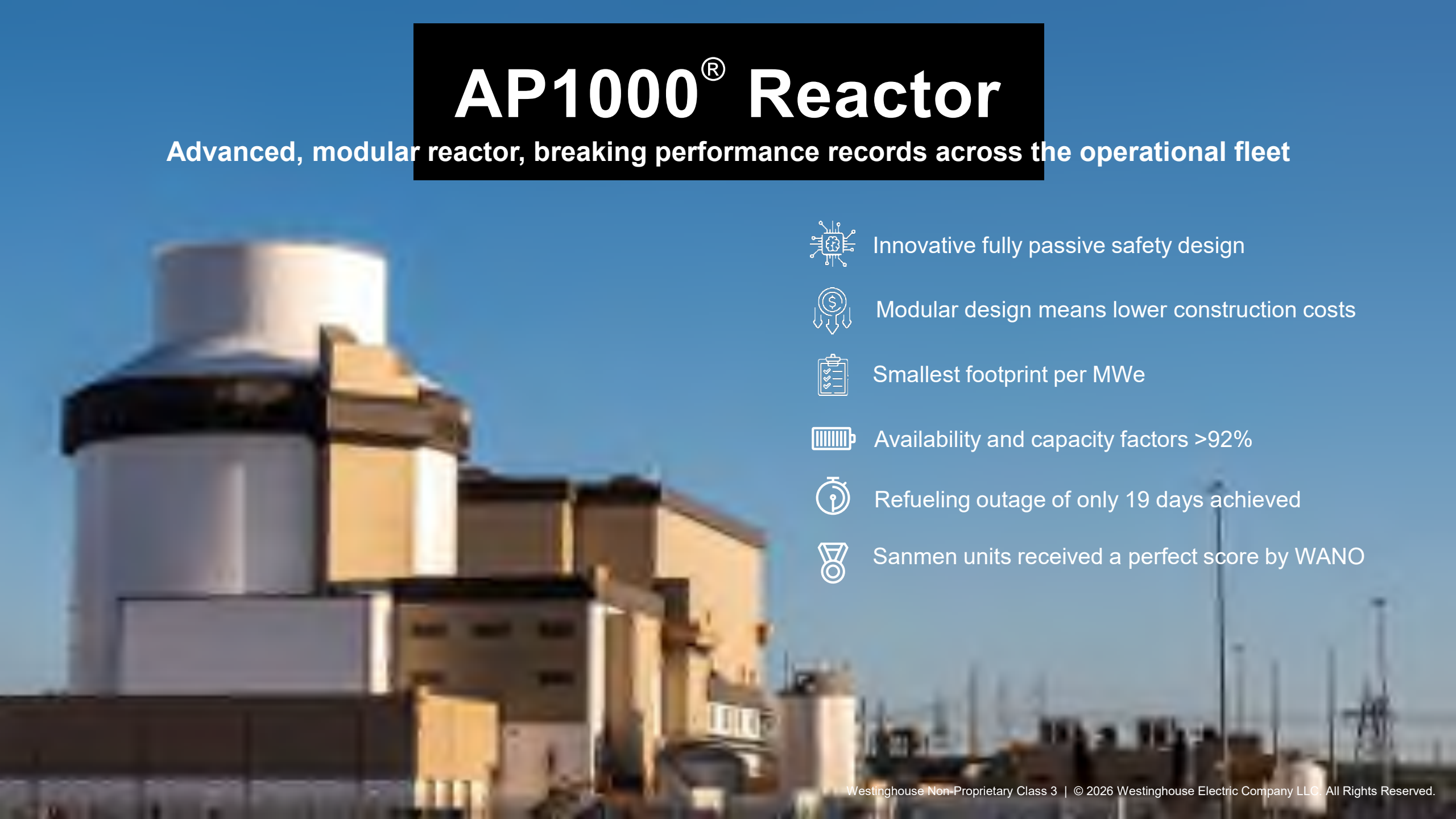
Keeps core from overheating using natural forces, like gravity, natural circulation and compressed gases

Community

Creates jobs for your community & provides reliable, carbon-free energy.

AP1000® Reactor

Advanced, modular reactor, breaking performance records across the operational fleet



- Innovative fully passive safety design
- Modular design means lower construction costs
- Smallest footprint per MWe
- Availability and capacity factors >92%
- Refueling outage of only 19 days achieved
- Sanmen units received a perfect score by WANO

AP1000 Plant Licensing Pedigree

United States / USNRC

- Design Certification under10CFR52 (2006 & 2011)
- Multiple approvals of utility COL applications (2012)
- Construction inspections (ongoing)

China / NNSA

- PSAR Review / Construction Permits (2009)
- FSAR Review / Fuel Load Permit (2018)

United Kingdom / ONR

- Generic Design Assessment concluded with issuance of Design Acceptance Certificate (2017)

Canada / CNSC

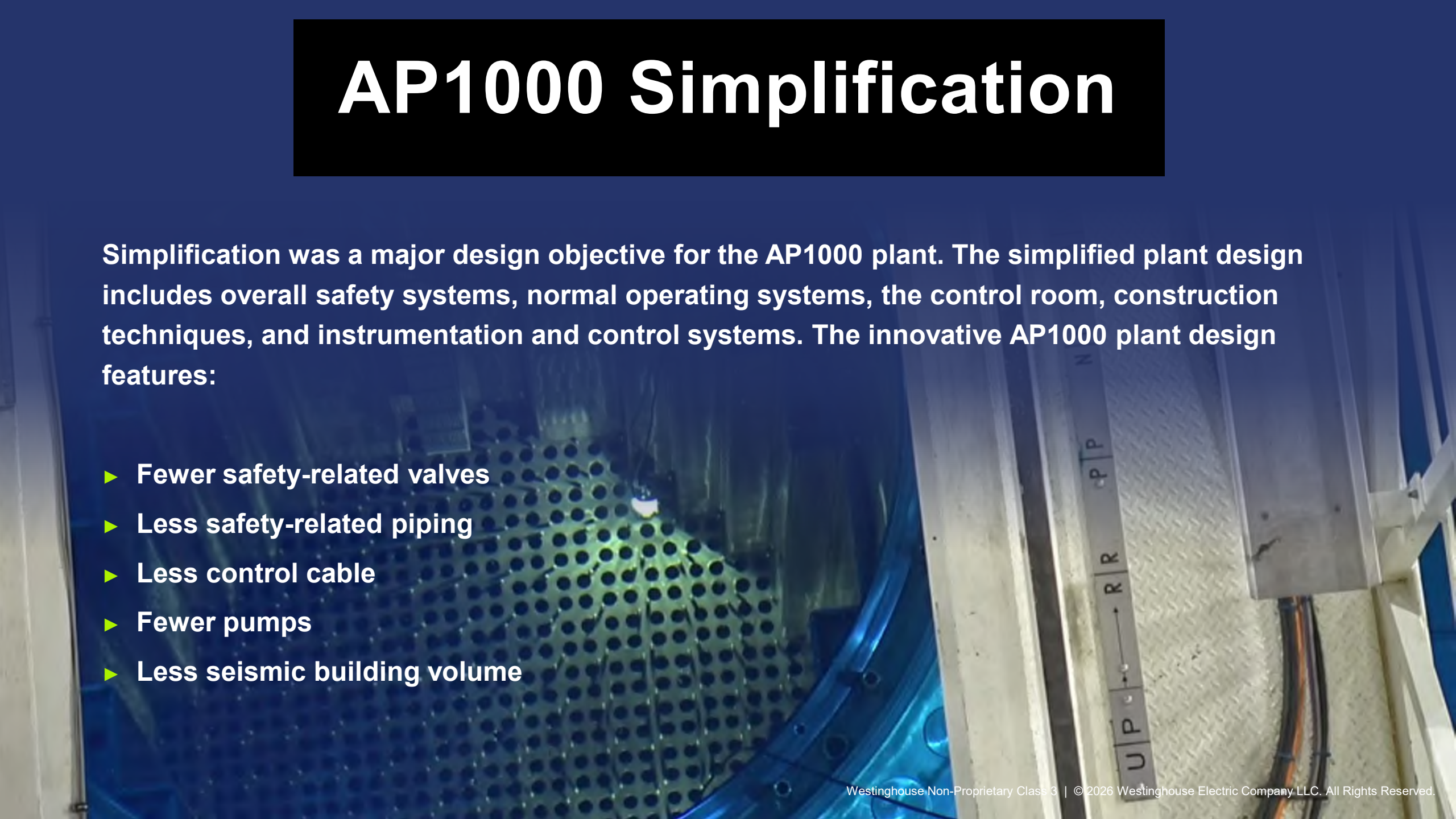
- Pre-project Design Review Phase 2 concluded no fundamental barriers to licensing AP1000 plant design in Canada (2013)

Licensing pedigree of the AP1000 plant design is unmatched by any other technology

AP1000 Simplification

Simplification was a major design objective for the AP1000 plant. The simplified plant design includes overall safety systems, normal operating systems, the control room, construction techniques, and instrumentation and control systems. The innovative AP1000 plant design features:

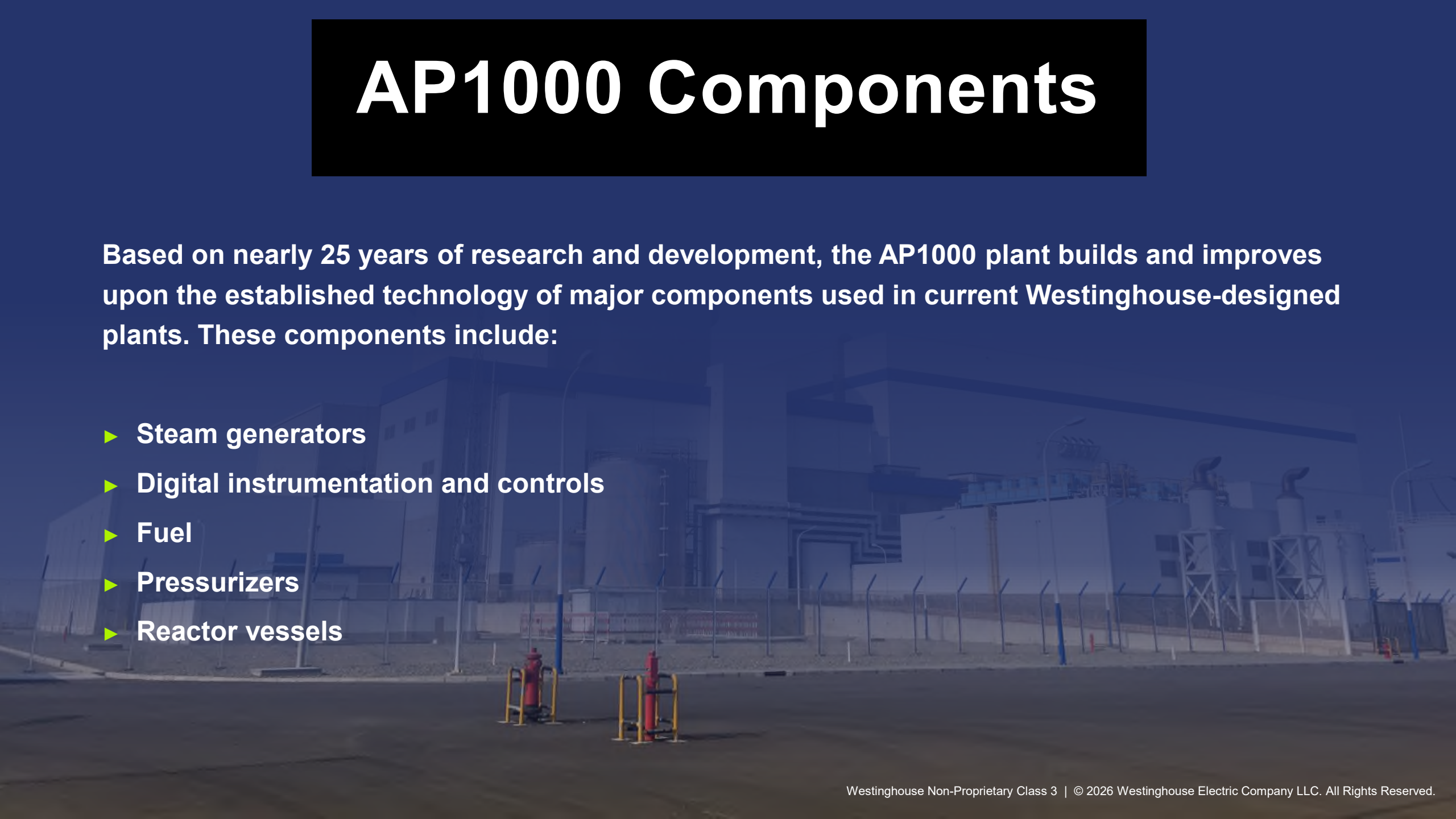
- Fewer safety-related valves
- Less safety-related piping
- Less control cable
- Fewer pumps
- Less seismic building volume



AP1000 Components

Based on nearly 25 years of research and development, the AP1000 plant builds and improves upon the established technology of major components used in current Westinghouse-designed plants. These components include:

- Steam generators
- Digital instrumentation and controls
- Fuel
- Pressurizers
- Reactor vessels



AP1000 Safety

Passive-safety systems. Multiple levels of defense. Advanced controls.

The AP1000 pressurized water reactor (PWR) is based on a simple concept: In the event of a design-basis accident, such as a main coolant-pipe break, the plant is designed to achieve and maintain safe shutdown condition without operator action, and without the need for ac power or pumps.

Non-safety Systems

Passive Safety-Related Systems

In-vessel Retention of Core Damage

The AP1000 PWR meets the U.S. NRC deterministic-safety and probabilistic-risk criteria with large margins.

Economic benefits

The AP1000 pressurized water reactor's (PWR) extensive use of modularization of plant construction mitigates cost of financing during the construction phase and the substantial amount of skilled-craft-labor hours needed on site during construction.

Overnight Construction Cost

The AP1000 plant's modular construction design further reduces the construction schedule and the construction risks

Simplified Plant Arrangement

The AP1000 plant has a smaller footprint than an existing nuclear power plant with the same generating capacity.

Improved Plant Operations

The AP1000 pressurized water reactor (PWR) has several design features that improve worker safety and production, as well as availability and capacity factors.

- 18-month fuel cycle for improved availability and reduced overall fuel cost
- Significantly reduced maintenance, testing and inspection requirements and staffing
- Reduced radiation exposure, less plant waste
- 93 percent availability
- Sixty-year design lifetime

AP1000 Plant

Grid Stabilization and Wider Decarbonization

- **District Heating**
  - Heating for up to 100,000 households from 10% of output
  - Replacing hundreds of thousands of tons of coal
  - Displacing thousands of tons of soot, SO_2 and NO
- **Water Production**
  - Produce up to 1B liters per day of desalinated water using less than 10% of output
- **Hydrogen Production**
  - Produce 50 tons of Hydrogen per day from less than 10% of output using High Temperature Electrolysis process
- **Energy Storage**
  - Use direct thermal transfer for onsite energy storage to save 15% reactor capacity during low demand and release 115% capacity during peak periods
- **1,200 MWe Electricity**
  - ~10 million metric tons of CO2 coal emission offset per year
  - Fast load-follow capabilities to support variations in demand and provide frequency stabilization

Shaping Tomorrow's Energy

Flexible Cogeneration Potential

Modular Approach

Shorter construction schedule – Improved quality – Reduced field work

Factory production of modules

Transport Modules

On-site module assembly

Plant Operation

Site Survey and Preparation

Site Construction

Construction and module assembly

Requires pre-engineering and early procurement – More work done in parallel

AP300™ SMR

The ONLY SMR based on Nth of a Kind Operating Plants

The SMR Promise

What is the best path to deliver on the promise?

- **Lower Cost**
- **Easier to License**
- **Efficient Construction**
- **Increased Safety**
- **Quicker Deployment**

AP300 SMR

Only SMR based on deployed, operating & advanced reactor technology

Proven Technology

34 AP1000 reactor-years of safe operations

Based on the fully licensed & operating AP1000 technology.

Advanced Safety

More than **30** years licensing advanced passive technologies with global regulators

We pioneered passive safety systems. AP300 utilizes identical passive safety systems used in the AP1000 reactor to maintain safe shutdown condition.

Readily Deployable

Approximately **0.4** acres needed for safety related buildings

Ultra-compact, simplified design reduces construction timeframes. Maximizes use of established supply chain.

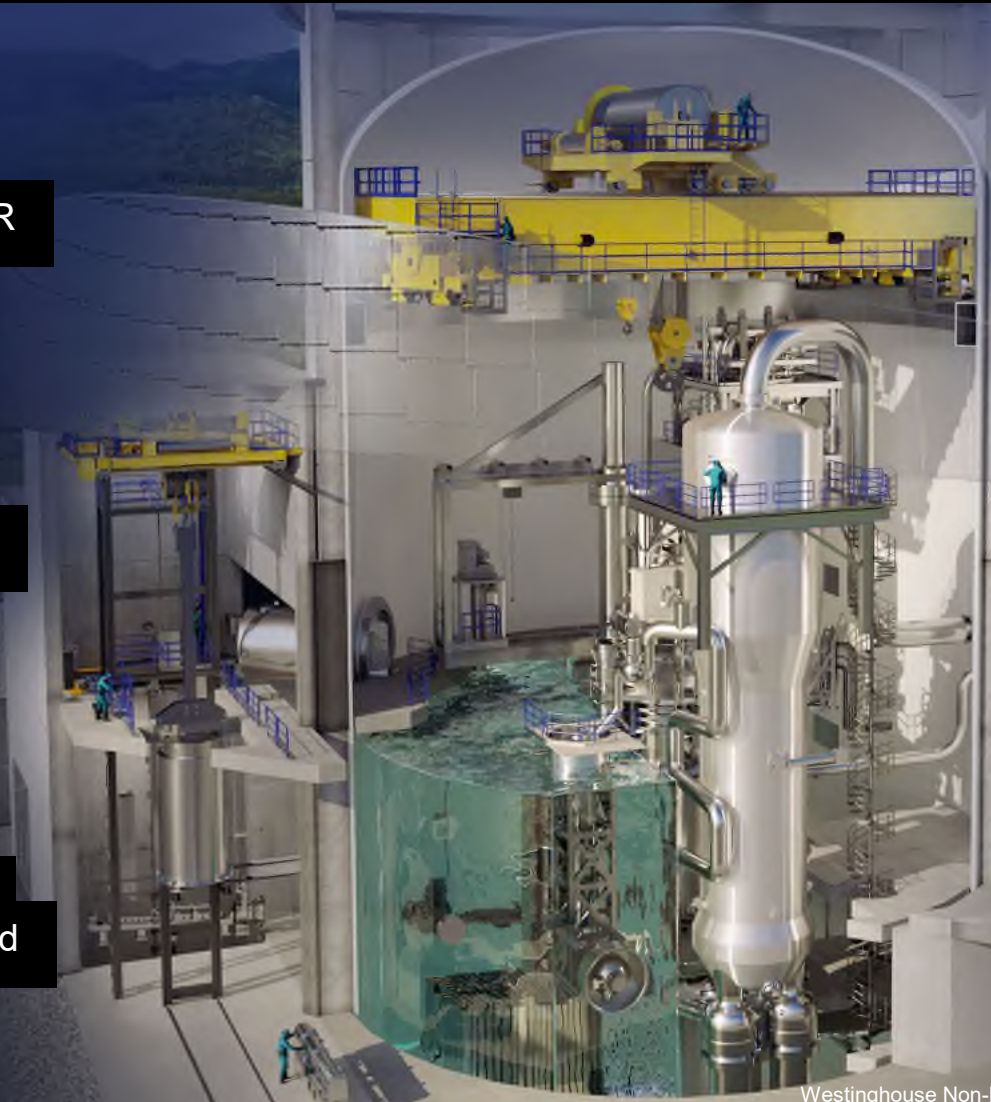
Proven Technology

Leveraging AP1000 technology with demonstrated industry leading reliability

330MWe (990MWt) 1-loop PWR with demonstrated reliability

Westinghouse AP1000 reactor passive safety technology

Reduces overall components creating a simpler plant compared to other SMRs



Identical Technology as AP1000 including:

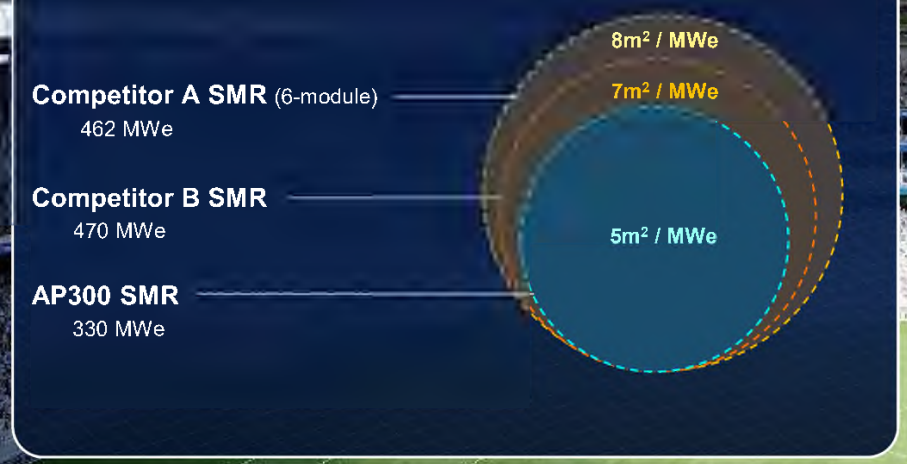
- **Design & licensing methodologies**
- **Major equipment & components**
- **Passive safety systems**
- **Proven Fuel**
- **I&C systems**
- **Proven Supply Chain**
- **Constructability lessons learned**
- **Steel-Composite structural modules**
- **O&M procedures & practices**
- **Fast load follow capabilities**

Ultra Compact Footprint

AP300 SMR's smaller safety related footprint reduces construction, operating & maintenance costs and risks

PWR SMR COMPARISON

SAFETY RELATED FOOTPRINTS



Competitor A SMR (6-module)
462 MWe

Competitor B SMR
470 MWe

AP300 SMR
330 MWe

Passive Safety Pioneers

AP300 SMR uses the identical proven AP1000 fully passive safety systems

Fail Safe

Automatically achieves safe shutdown without the need for operator action

Self Sufficient

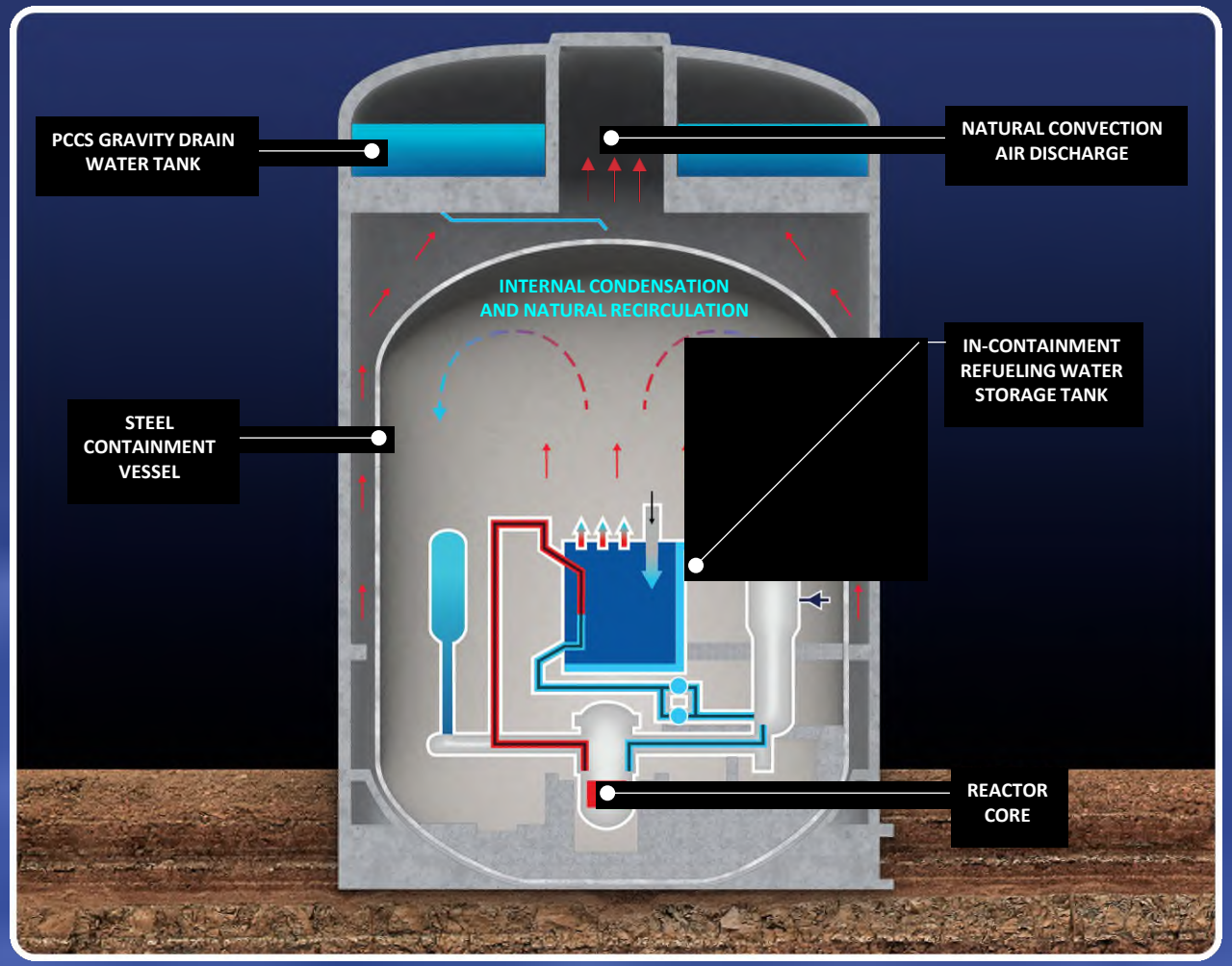
Passive approach to safety eliminates the need for backup power & cooling supply

Hazard Proof

Protected by a robust containment designed to withstand extreme external hazards

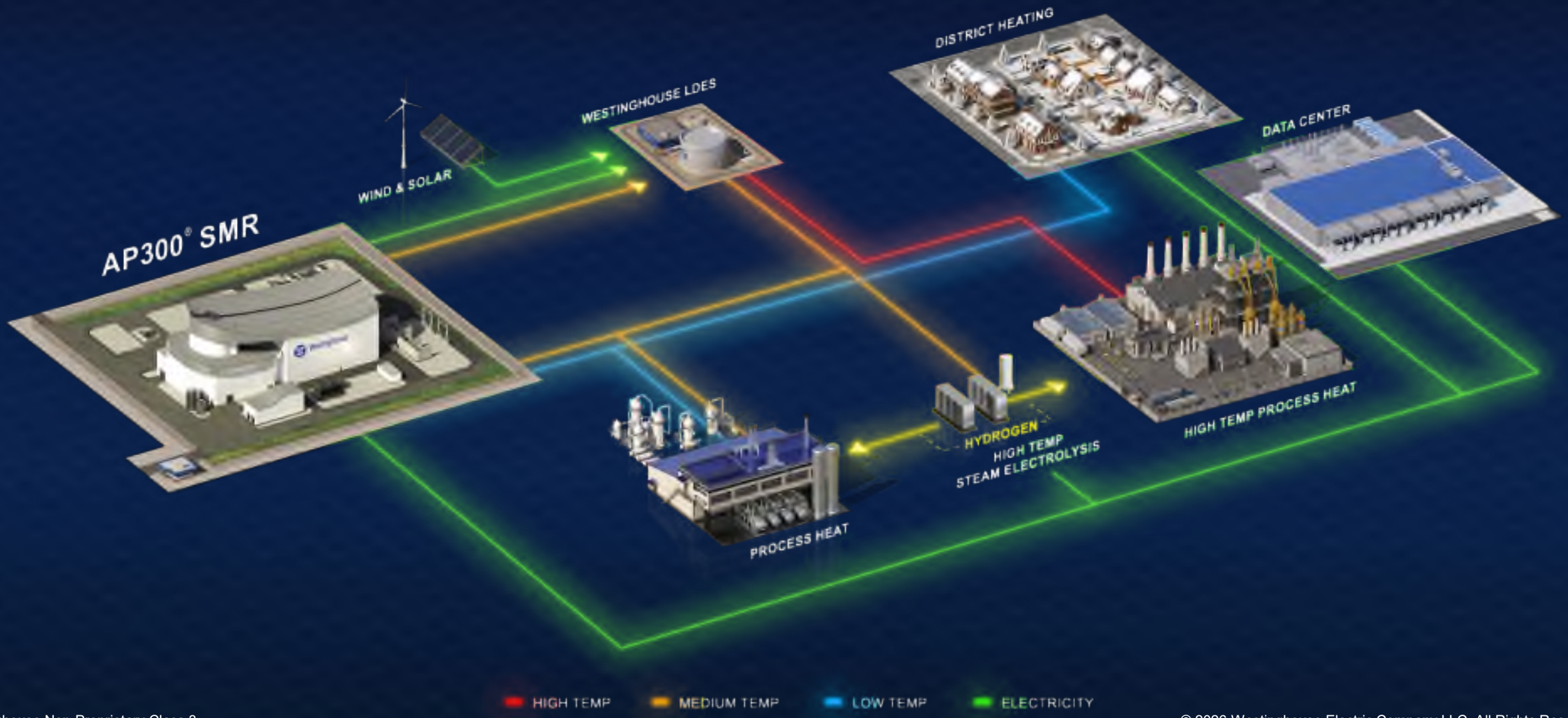
Defense in Depth

Multiple layers of defense for accident mitigation



Versatility of Application

AP300 SMR is the backbone of a community clean energy system



AP300 SMR Roadmap

Leverages our AP1000 reactor design and licensing experience to achieve deployment by mid to late 2030's

AP1000 Design & Licensing Completed

- Design Certification
- Passive Safety System Testing & Demonstration
- Deployment & operation of AP1000 reactors

AP300 Design & Licensing

- NRC design certification
- Standard plant ready to deploy

Project Preparation

- Site specific design & licensing
- Long lead time procurement

Ready for Construction

36 months for NOAK construction

2023: Conceptual Design Complete & Pre-Submittal Dialogue with US NRC Initiated

2024: Basic Design Initiated

AP300 SMR

The ONLY SMR based on Nth of a Kind Operating Plants

Proven Technology

Advanced Safety

Readily Deployable

PTES Solution

Gric Scale Long Duration Energy Storage with unmatched Application Flexibility

Today’s Energy Landscape

Long-du ification

CUSTOMER / INDUSTRY CHALLENGES

- Increased deployment of intermittent generation
- Mismatched supply and demand
- Grid instability due to reduced inertia
- Safety/environmental concerns & commodity limitations

ECHOGEN / WESTINGHOUSE ENERGY STORAGE SOLUTIONS

- Enables greater deployment of renewables
- Low incremental costs of longer duration
- Provides characteristics of traditional generation
- Uncompromised safety & environmental impact

Westinghouse LDES

Grid-Scale Long Duration Energy Storage with unmatched application flexibility

Cost-Effective

~65% LCOS compared to li-ion batteries

Low cost of capacity across longer duration applications

Ultra Long-Life

Targeting

60 years of technology lifespan with the capability for unlimited cycles

Maintains capacity over time without augmentation.

Safe & Sustainable

100% non-toxic with no hazardous materials in an inherently safer design

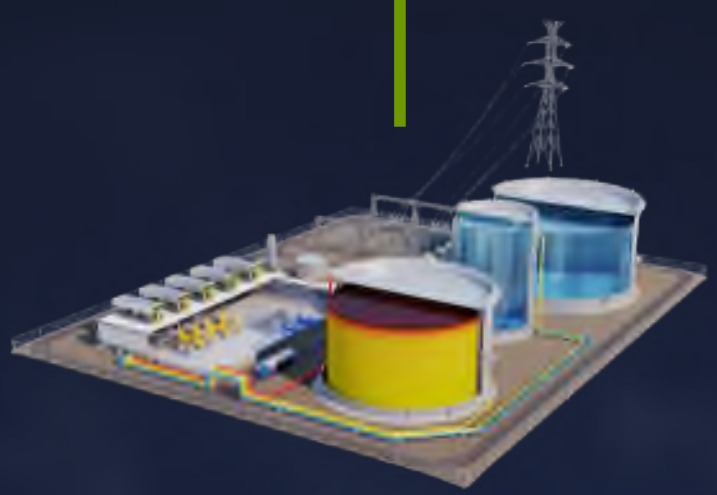
Low carbon footprint and fully recyclable end of life

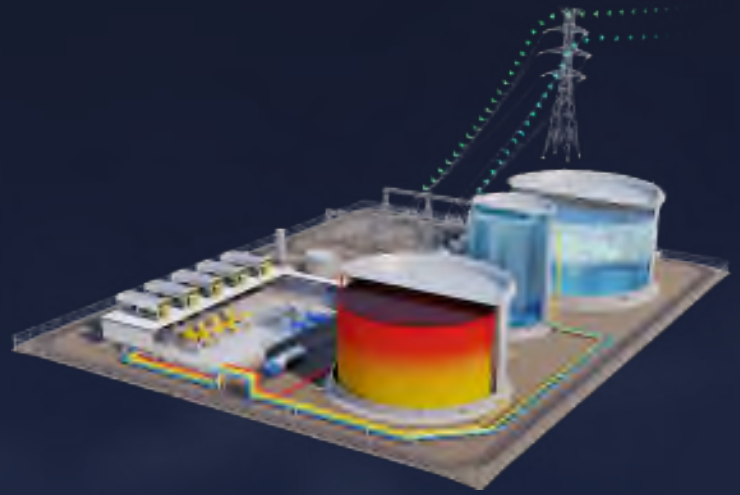
How It Works

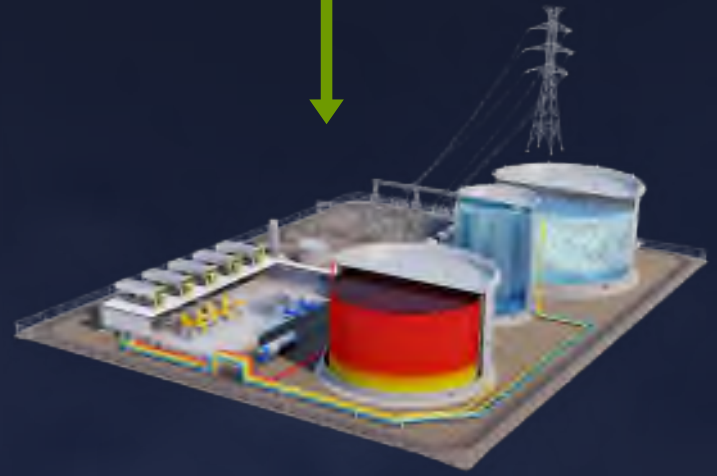
Storing electrical energy as a differential of temperature.

Charging

sCO_2 heat pump cycle consumes grid power to move heat from freezing of water in LTR to heating oil/media in HTR.







Zero Charge

System at a fully discharged state where LTR has chilled water and HTR has warm oil/media.

Discharging

sCO_2 heat engine cycle utilizes stored temperature difference to produce electricity, melting ice & cooling the oil/media.

Full Charge

System at a fully charged state where LTR has ice and HTR has hot oil/media.

Proven Technology

Balancing innovation with proven components to deliver a reliable system

Systems

Generation

The EPS100 is a commercially available generating system with over 330 hours of operation

Heat Pump

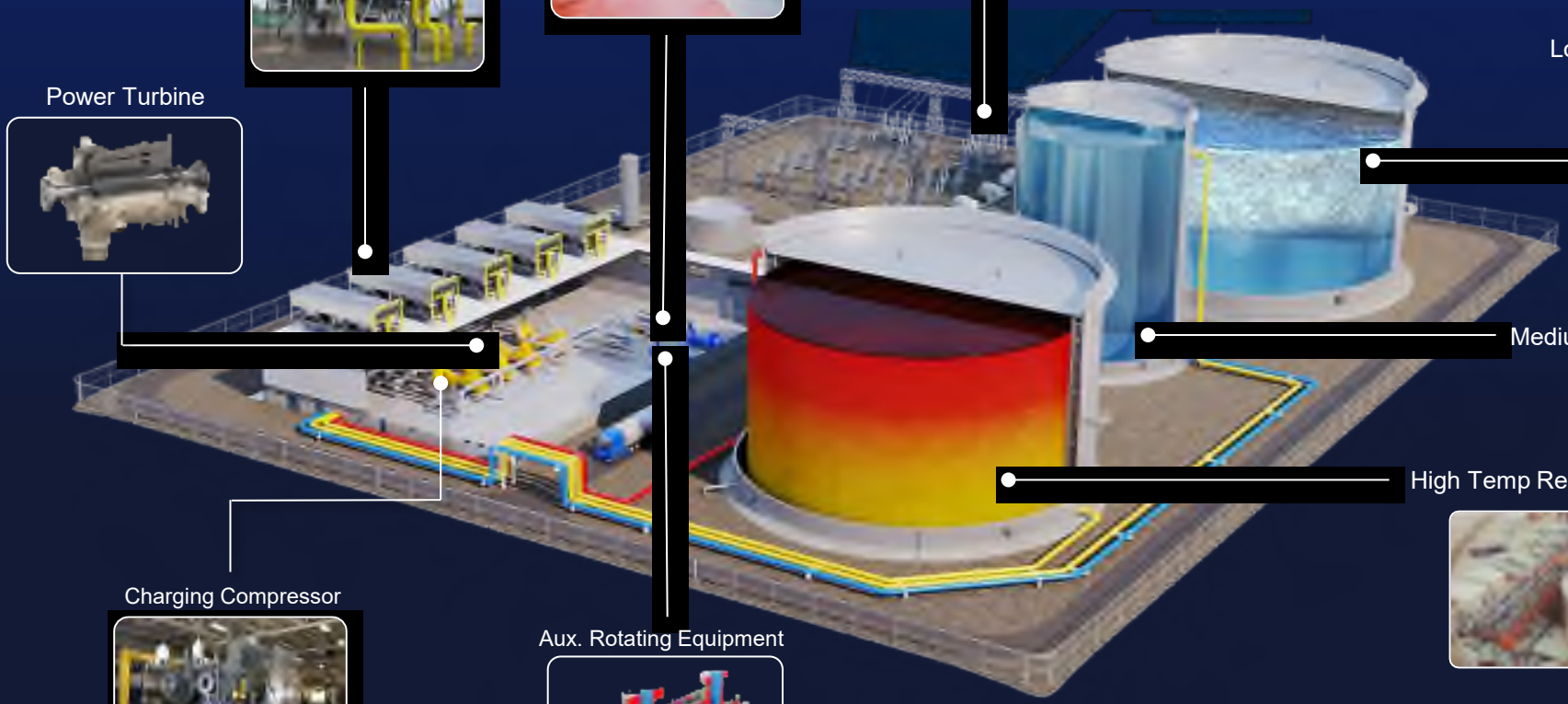
Large pilot scale system used to validate models

Heat Exchanger

Ambient Heat Exchangers

Typical Plant BOP

Power Turbine



Low Temp Reservoir (LTR)

Medium Temp Reservoir (MTR)

High Temp Reservoir (HTR)

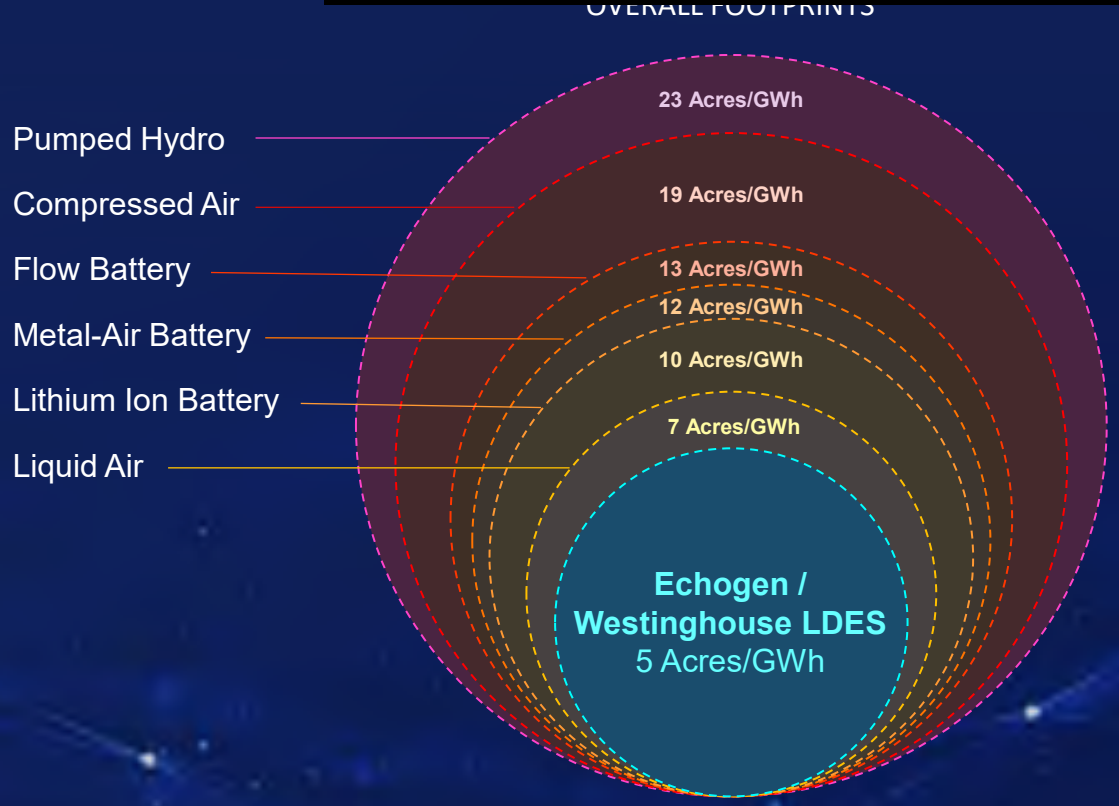
Charging Compressor

Aux. Rotating Equipment

Siting & Sustainability

One of the most compact LDES footprints at ~5 acres for GWh+

Storage Technology Comparison



Sustainability

- No topographical or geologic dependencies
- Can be built anywhere with a fully domestic supply chain
- Non-toxic, non-hazardous materials, low chemical, fire and safety risks
- Low carbon footprint, fully recyclable end of life
- Established & Existing Supply Chain

Grid Level Support

From 8 hours to multiple days of stored capacity & other ancillary services to enable Net Zero Goals