



Diahann Howard
Executive Director, Port of Benton

VERTical Innovation Cluster

“Washington VERTical, led by the Port of Benton – accelerating the transition to clean, renewable and non-emitting energy production sources by 2025 through advanced nuclear power technologies.”

Innovation Cluster Accelerator Program Press Release
Washington State Department of Commerce

VERTical Priorities



Facilitate next-generation nuclear energy reactor demonstration and deployment projects.



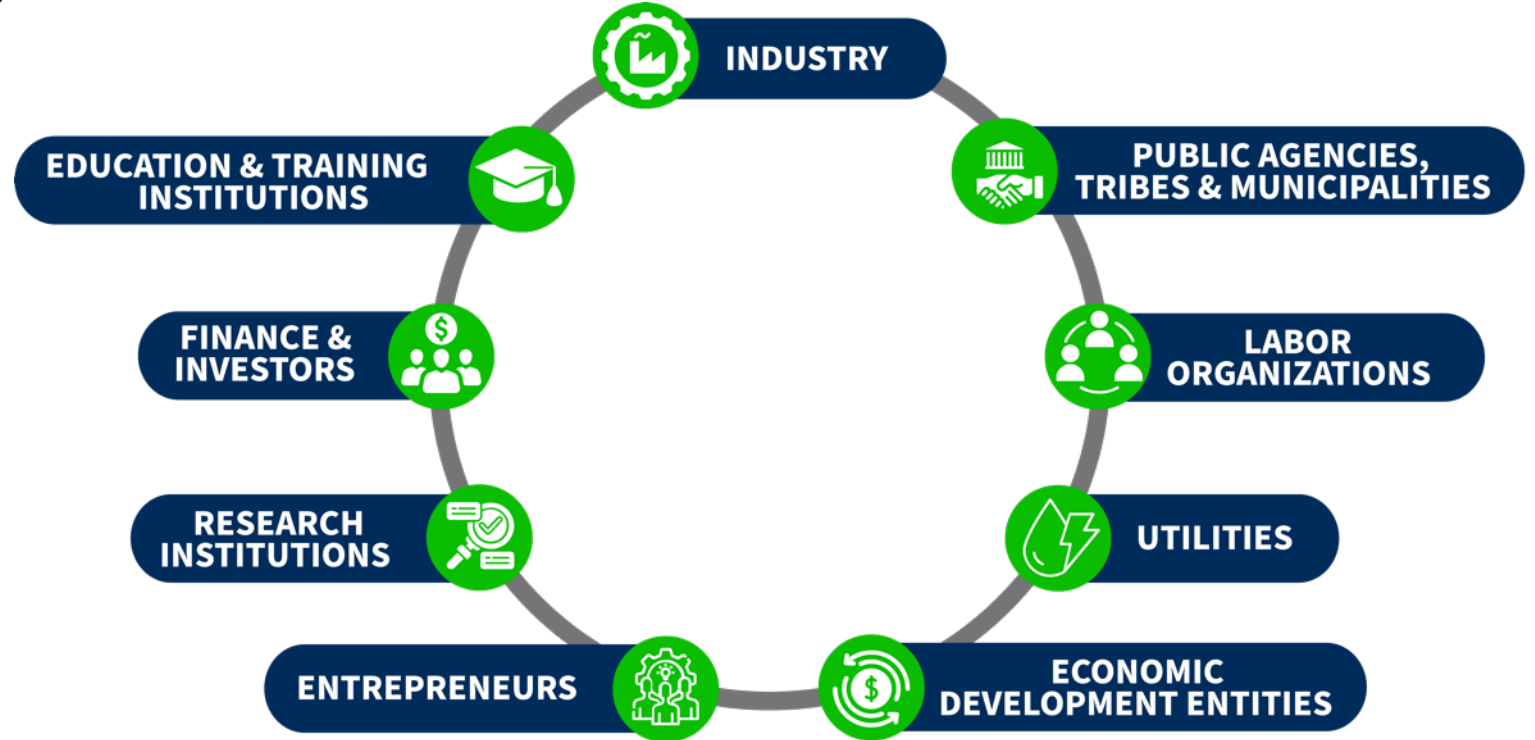
Rebuild and modernize the U.S. supply chain for next-generation nuclear in partnership with the Clean Energy Supplier Alliance.



Ready the industry's future nuclear energy skilled trades and professional workforce to create a talent pipeline.

VERTical Partners

- Aerospace Clusters
- City of Richland
- Clean Energy Supplier Alliance
- CleanTech Alliance BUILT Cluster
- Columbia Basin College
- Clean Future Northwest
- Department of Energy Gateway for Accelerated Innovation
- Electric Power Research Institute
- Energy Northwest
- Framatome
- Nuclear Energy Institute
- TRIDEC
- U.S. Nuclear Industry Council
- Washington State Dept. Commerce
- Washington State Tech Alliance
- Washington State STEM Foundation
- Washington State University Tri-Cities



VERTical Members

Total number of members: VERTical Cluster – 120
Clean Energy Supplier Alliance – 40



VERTical Projects



Facilitate Next-Generation
Reactor Demonstration &
Deployment Projects



Accelerate Advanced
Manufacturing to
Onshore and Secure
the Supply Chain



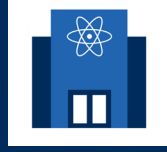
Grow the Advanced
Clean Energy Market



Train Tomorrow's Nuclear
Skilled Trades &
Professional Workforce



Attract Capital for
Advanced Nuclear



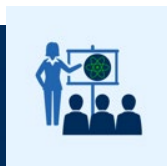
Establish a NW Nuclear
Quality Management
Center of Excellence



Ready Next-Generation
Nuclear Energy Suppliers



Coordinate Grant Partners
to Leverage State &
Federal Funds



Educate and Advocate
for Nuclear Energy

Materials & Resources



A U.S. supply chain for next-generation nuclear energy technologies does not exist. The Clean Energy Supplier Alliance was established in 2022 to close this gap. The Clean Energy Supplier Alliance is an industry-led nonprofit with business and labor collaborating to drive innovation, address supply chain challenges impacting a robust transition and pursue market opportunities. Our work will accelerate the deployment of new nuclear and other advanced clean energy technologies to support U.S. climate goals, increase energy security and create sustainable, good-paying jobs in carbon-emitting facilities are retired.

Clean Energy Supplier Alliance Energy Technology Priorities

Advanced Reactors • Small Modular Reactors • Micro Modular Reactors

A diverse mix of advanced clean energy generation, storage and transportation solutions for next-generation nuclear energy – alongside existing nuclear power, wind, solar and hydroelectric production – is the integrated all-of-the-above energy strategy needed to achieve greater energy security and address the climate challenge.

Commercial Nuclear Industry Expertise

The Clean Energy Supplier Alliance's established nuclear supplier members range from large global corporations with extensive experience supplying products and services for nuclear energy projects. These members provide key leadership and expertise to ensure the Supplier Alliance reacts to the needs and rigorous standards of next-generation nuclear power reactor clients.

Established Nuclear Supplier Members

- Babcock Services
- Energy Northwest
- Fluid Controls & Components
- Fluor
- Framatome
- HLLinx Engineering & Fabrication
- Hubert/Ascendent
- Sargent & Lundy
- Tetra Tech



Clean Energy Supplier Alliance

CESupplierAlliance.com | dave@cesupplieralliance.com



The Opportunity: A VERTICAL (Green) Economy

As the drive to decarbonize the economy progresses, the Pacific Northwest is uniquely poised as a national leader in advanced nuclear power generation as an essential part of a sustainable, all-of-the-above clean energy strategy.

Nuclear energy is a crucial, zero-emission, 24/7 power source. Existing nuclear plants provide 50% of the country's carbon-free electricity. The nuclear energy fleet of the future is advanced small modular reactors and micro modular reactors and will continue the nuclear power industry's history of reliable and safe operations.

VERTICAL Innovation Cluster

VERTICAL is a coalition of experts from industry, organizations and public agencies collaborating to accelerate the deployment of next-generation nuclear and other advanced clean energy system technologies. The VERTICAL innovation cluster is based in the Pacific Northwest, the most robust green energy hub in the U.S., with experienced developers, operators, workers, researchers and trailblazers. Our collective efforts contribute to U.S. decarbonization goals, energy efficiency, equity, and job creation for communities everywhere.

VERTICAL's Priorities

Through a grant from the Washington State Department of Commerce and administered by Port of Benton, VERTICAL is implementing a proven international cluster model to drive innovation, create jobs and address challenges that limit the industry's growth and pursue market opportunities. Our priorities will:

- Facilitate next-generation nuclear energy reactor demonstration and deployment projects.
- Establish the first industry-led domestic Clean Energy Supplier Alliance to build a supply chain for next-generation nuclear and advanced clean energy systems.
- Ensure the reading the industry's future energy skilled trades professionals work, create a talent pipeline.



WashingtonVERTICAL.com | dhoward@portofbenton.com



Nuclear-Powered Clean Energy in Washington State

Here's how Washington is leading the way in nuclear energy expertise and innovation to power our nation's clean energy future.

Washington Industry Supports
7 U.S. new nuclear technology developers
Clean Energy Supplier Alliance

Washington's nuclear displaces
~4.4 million metric tons of CO₂ from entering the atmosphere annually
Equals the carbon released by ~778,000 cars each year
Columbia Generating Station

Washington Made
1st U.S. industry-led supply chain cluster
to support deployment of advanced nuclear reactors
Clean Energy Supplier Alliance

Nuclear fuel fabricated here generates
5% of all U.S. electricity
Equals 50% of all U.S. carbon-free electricity produced from clean energy sources
Framatome Nuclear Fuel Manufacturing Facility

Home to
1 of only 2 operating nuclear power plants on the West Coast
Columbia Generating Station

HOME TO
3 next-generation nuclear technology companies
TeraPower & Ultra Safe Nuclear – plus, NuScale Power has a major presence here

10% of Washington's electricity
Columbia Generating Station

3 Advanced Reactor Demonstration Projects are located in our region
Xenergy, TeraPower & NuScale Power



WashingtonVERTICAL.com - Administered by Port of Benton

- ▶ Flyers
- ▶ Website
- ▶ Video



Clean Energy Supplier Alliance

Supply Chain Solutions for Nuclear Energy Technologies

The Clean Energy Supplier Alliance is a nonprofit, industry-led innovation cluster established to accelerate the deployment of next-generation nuclear and other advanced clean energy technologies to maintain energy security as carbon-emitting facilities are retired.

We bring together business and labor members to address supply chain gaps, create competitive solutions and foster innovation. Members partner to pursue new market opportunities.

Clean Energy Technology Priorities

Advanced Reactors • Small Modular Reactors • Micro Modular Reactors

A diverse mix of advanced clean energy generation, storage and transportation solutions that include next-generation nuclear energy – alongside existing nuclear power, wind, solar and hydroelectric production – is the integrated all-of-the-above energy strategy needed to achieve greater energy security and address the climate challenge.

Our focus is on advanced nuclear energy technologies that will play a vital role in reducing greenhouse gas emissions and keeping the lights on.



Commercial Nuclear Industry Expertise

Many member companies, ranging from large global corporations to local small businesses, have vast experience supplying products and services for nuclear projects.

These companies provide key leadership and expertise to ensure the Supplier Alliance meets the needs and rigorous standards of Advanced, Small Modular and Micro Modular Reactor technology clients.

As industry leaders, some members also serve as advisors to other Clean Energy Supplier Alliance companies preparing to pursue nuclear supplier contracts.

Established Nuclear Supplier Members

- Babcock Services
- Energy Northwest
- Fluid Controls & Components
- Fluor
- Framatome
- HLLinx Engineering & Fabrication
- Hubert/Ascendent
- Sargent & Lundy
- Tetra Tech



Cleanup to Clean Energy Vision

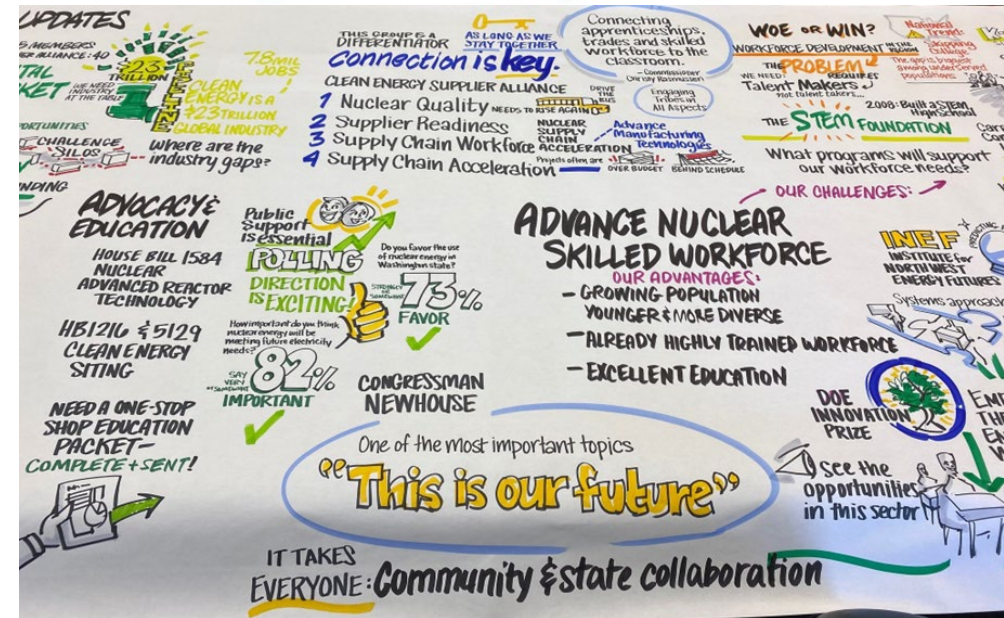
Welcome to
THE TRI-CITIES
 CLEAN ENERGY CONVENING 2022

Presented by: **WASHINGTON VERTical** **INCEI**
 Sponsored by: **PORT OF BENTON** **TRIDEC**
 Hosted by: **WASHINGTON STATE UNIVERSITY**



Welcome to
THE TRI-CITIES
 CLEAN ENERGY CONVENING 2.0

Presented by: **WASHINGTON VERTical** **PORT OF BENTON**
 Sponsored by: **PORT OF BENTON**
 Hosted by: **WASHINGTON STATE UNIVERSITY**



VERTical Tomorrow – The Future is VERTical

The Future Is VERTICAL

PHASE 3

2026-2030

Advanced Nuclear Technology Project Construction-Operations and Development of Other Advanced Clean Energy Technology Projects

PHASE 2

2024-2026

Advanced Nuclear Technology-Focused Project Development

PHASE 1

2022-2023

Establishment, Framework, and Growth



Thank you!

VerticalCluster.com

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