OCED
Office of Clean Energy Demonstrations

REGIONAL CLEAN HYDROGEN HUBS PROGRAM

PACIFIC NORTHWEST HYDROGEN HUB (PNWH2)

AWARDEE FACT SHEET

PACIFIC NORTHWEST HYDROGEN HUB (PNWH2)

The Regional Clean Hydrogen Hubs (H2Hubs) Program, managed by the U.S. Department of Energy's (DOE) Office of Clean Energy Demonstrations (OCED), aims to create networks of hydrogen producers, consumers, and local connective infrastructure to accelerate the use of hydrogen as a clean energy carrier that can deliver or store tremendous amounts of energy.

Funded through the Bipartisan Infrastructure Law, OCED selected seven H2Hubs to begin award negotiations for up to $7 billion, the largest investment in clean manufacturing and jobs in American history. Following negotiations, in July 2024, OCED awarded the Pacific Northwest Hydrogen Hub—led by the Pacific Northwest Hydrogen Association (PNWH2)—with $27.5 million for the first tranche of funding out of the total project federal cost share of $1 billion to begin Phase 1 of the project plan. PNWH2 is proposing project locations throughout Washington, Oregon, and Montana.

Project At a Glance – Phase 1

Total OCED Cost Share Amount:

Up to $1 billion

Phase 1 OCED Award Amount:

$27.5 million*

Phase 1 Total Project Amount:

$125 million**

Phase 1 Scope of Work:

Planning and development activities

Phase 1 Timeline:

12-18 months

Recipient:

Pacific Northwest Hydrogen Association (PNWH2)

Project Locations:

Richland, WA; Chehalis, WA; Seattle, WA; Ferndale, WA; St. Regis, MT; Durkee, OR; Boardman, OR; and Port of Morrow, OR

Project Start Date:

July 2024

* Represents OCED's cost share for the initial project phase. Additional funding for this project is subject to future award negotiations at the end of each project phase.

** Represents the total project cost for the initial project phase.

ABOUT THIS PROJECT

Project Description at the Hub-level:

OCED is working with PNWH2 to build the Pacific Northwest Hydrogen Hub and create a clean hydrogen ecosystem across the region, with the ultimate goal of reducing carbon emissions by 1.7 million metric tons per year—roughly the equivalent to annual emissions of 400,000 gasoline-powered cars. The Hub plans to incorporate multiple projects in distinct Hub nodes (project groups) across the region and produce all of its hydrogen via electrolysis using clean, carbon free energy, facilitating greater connectivity and expansion of a clean West Coast freight network that links to the California Hydrogen Hub. Once the entire award is complete, the Hub intends to deploy electrolysis —a hydrogen production process that splits hydrogen from water—at scale by producing at least 335 metric tons per day of clean hydrogen powered by at least 95% carbon-free energy feedstock, and ultimately achieving 100% carbon-free energy feedstock by 2035.

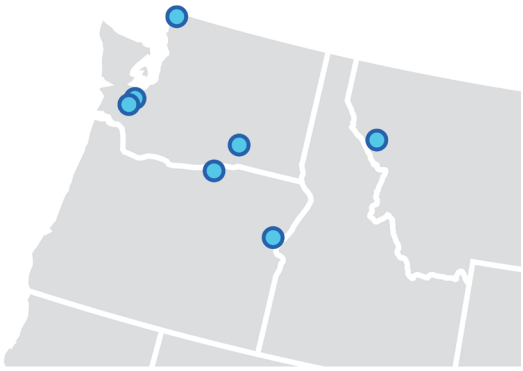
The Hub projects represent promising solutions to reduce the carbon emissions of major sectors of the economy like hard-to-electrify heavy-duty transportation, ports, long-duration energy storage for electricity production, agriculture, and industrial operations. The Pacific Northwest Hydrogen Hub consists of eight nodes made up of 19 sub-recipients to demonstrate the advantages of using clean hydrogen infrastructure across the states of Washington, Oregon, and Montana. This includes a mix of hydrogen produced on-site for immediate use with no transportation required, and other projects where hydrogen will be moved to the point of use. The Hub also includes the involvement of the Confederated Tribes of the Chehalis Reservation and the Cowlitz Indian Tribe at the proposed Node 7 location, which will result in direct benefits to both Tribes.

In July 2024, OCED awarded PNWH2 with $27.5 million for the first tranche of funding (out of the total project federal cost share of up to $1 billion) to begin Phase 1, which is expected to last 12-18 months and includes planning, analysis, design, and community and labor engagement activities. During the first phase, each Hub technology provider will be responsible for the planning and development of their respective projects, while all entities in the Hub will implement the community benefits commitments jointly.

OCED will provide project management oversight of the Pacific Northwest Hydrogen Hub by evaluating the status and quality of implementation at each phase of the project. Through its phased approach to project management, OCED will review and evaluate the Hub's progress, including community benefits, which impact OCED's decision to continue to provide federal funding and allow a project to progress to the following phase. DOE will comply with the National Environmental Policy Act, which will include public involvement.

NODES AND PROJECTS

The Pacific Northwest Hydrogen Hub is comprised of the following eight nodes, or groups of projects, that are planned to span across Washington, Oregon, and Montana. The proposed locations for most nodes are identified.



1

NODE 1

This node, led by USA Fortescue Future Industries in partnership with First Mode, Puget Sound Energy, Amazon, and Centralia College, plans to produce hydrogen for clean energy and heavy-duty transportation with nearby training and workforce development facilities. Planned infrastructure will produce hydrogen via electrolysis, liquefy hydrogen, and combust hydrogen for power generation.

2

NODE 2

This node, led by ALA Renewable Energy LLC in partnership with HTEC Hydrogen Technology & Energy Corporation, plans to produce hydrogen for heavy-duty transportation, refineries, and power generation anticipated in Ferndale, WA. Key technologies will include an electrolysis-based hydrogen production plant, hydrogen liquefaction plant, and liquid hydrogen cryogenic storage tanks producing clean hydrogen for end-uses including peaking power, refinery, transit buses, port equipment, and up to 10 heavy-duty truck refueling stations.

3

NODE 3

This node, led by Air Liquide in partnership with NW Seaport Alliance and PACCAR, plans to serve as a key link in the supply chain, receiving hydrogen from a pipeline for liquefaction and delivery to market for heavy-duty transportation end users along the I-5, I-90, and I-84 corridors proposed in Port of Morrow, OR. Key technologies at this node include hydrogen liquefaction, liquid hydrogen storage, hydrogen delivery trailers, heavy-duty hydrogen trucks, hydrogen refueling stations, and cargo handling equipment for ports.

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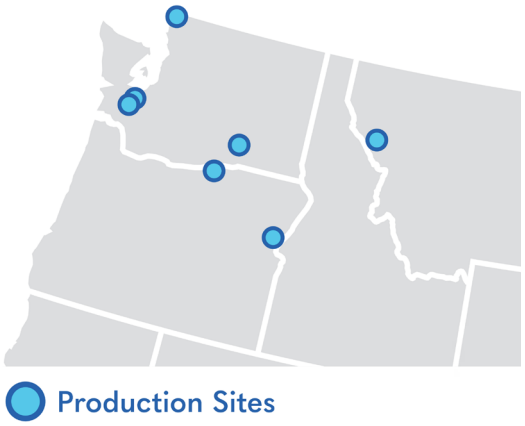

4

NODE 4

This node, led by Atlas Agro, plans to develop clean hydrogen for calcium ammonium nitrate fertilizer production for an expected end use by local farmers in Richland, WA. An alkaline exchange membrane electrolysis hydrogen production plant is planned to provide hydrogen for the production of green fertilizer for use throughout the region.

5

NODE 5

This node, led by Express Ranch Hydrogen LLC, plans to produce clean hydrogen for transportation including mining and other heavy-duty trucks, as well as oxygen for cement production. New dedicated pipelines, above ground storage, and hydrogen refueling stations for public and private use are key components of node infrastructure proposed in Durkee, OR.

6

NODE 6

This node, led by MHI Hydrogen Infrastructure LLC, in partnership with Williams Field Services Group LLC and Portland General Electric company, plans to develop hydrogen for clean electricity generation and to provide hydrogen to Node 3 of the Hub for heavy-duty transportation. It features hydrogen production via electrolysis and combined cycle power generation capable of running on 100% hydrogen. Key infrastructure at the intended Boardman, OR site includes long-duration energy storage capabilities and a hydrogen pipeline.

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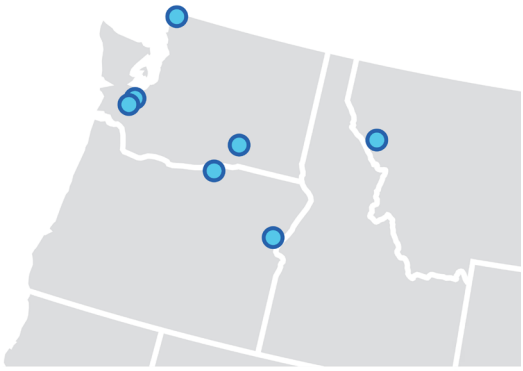

7

NODE 7

This node, led by Lewis Public Transportation Benefit Area, plans to leverage hydrogen production plants to support clean public transit infrastructure. Planned in Chehalis, WA, this node is to be central to hydrogen refueling stations for fuel cell electric vehicle buses and heavy- and medium-duty trucks along the I-5 corridor.

8

NODE 8

This node, led by St. Regis Solar LLC, plans to implement hydrogen production via proton exchange membrane (PEM) electrolysis to develop a hydrogen refueling station for heavy duty transportation—a critical piece of clean hydrogen infrastructure for transportation along the I-90 corridor. Other potential end uses could include power for a data center, aviation (drones), and long-duration energy storage for peaking power intended throughout the region surrounding St. Regis, MT.

COMMUNITY BENEFITS COMMITMENTS

Community benefits commitments are a key component of the Pacific Northwest Hydrogen Hub, to be informed and developed in consultation with local communities and tribes, which aim to mitigate potential impacts of this Hub and maximize local community benefits. Through the project lifetime, the Hub plans to implement these commitments through the following activities:

- Continued and enhanced transparency and public engagement through the **Hub-level Community Benefits Committee and eight node-level Community Advisory Boards**, composed of representation from the host community, host tribes/tribal nations, and labor groups.

- Creating more than **10,000 new, quality jobs**, while establishing workforce development activities, displaced worker training, and employment that fosters workplace diversity, equity, inclusion, and accessibility (DEIA).

- Pursuing good faith agreements towards **Community Benefits Agreements and/or Good Neighbor Agreements**, and all construction projects greater than $1 million will pursue good faith negotiations towards **Project Labor Agreements**. Additionally, projects will adhere to the Hub's broader labor commitments, including those to negotiate community workforce agreements (CWAs) and/or other collective bargaining agreements.

- Ongoing **engagement with tribes and tribal-led organizations** at the Hub level through state and tribal liaisons to learn and understand concerns and interests in all aspects of the Hub.

- **Implementing robust Justice40 commitments**, which will include updates to the Justice40 Assessment and Implementation Strategy during each phase and sharing relevant information for impacted community input. Specific Justice40 benefits will include job creation, supply chain and contracting opportunities, and socioeconomic benefits, as well as reduction of environmental burdens at project/node sites. This will include **redevelopment of contaminated brownfield sites**, like former coal, aluminum smelter, and remediated Hanford Reservation sites.

- Launching a **public data reporting platform to enhance transparency**. The platform will provide information about the projects including status updates, information about the Community Benefits Committee and Community Advisory Boards, and engagement mechanisms and events. In later phases, the data reporting platform will include metrics related to community and labor engagement, quality jobs and workforce development, tribal impacts, DEIA, and Justice40 initiatives.

Community benefits commitments will be updated during each phase of the project's lifetime. More details on PNWH2's community benefits commitments in Phase 1 can be found here.

REGIONAL CLEAN HYDROGEN HUBS

Program Goals

The Regional Clean Hydrogen Hubs Program will establish H2Hubs across the nation and jumpstart a new clean energy economy in the United States. Funded by the Bipartisan Infrastructure Law, the H2Hubs will accelerate the commercial-scale deployment of clean hydrogen, helping to generate clean, dispatchable power, create a new form of energy storage, and decarbonize heavy industry and transportation. Together, the H2Hubs will kickstart a national network of clean hydrogen producers, consumers, and connective infrastructure while supporting the production, storage, delivery, and end-use of clean hydrogen. Clean hydrogen is a flexible energy carrier that can be produced from a diverse mix of domestic clean energy resources, including renewables, nuclear, and fossil resources with safe and responsible carbon capture. As the most abundant element in the universe, hydrogen has unique characteristics as an energy carrier that make it the best option to decarbonize energy-intensive heavy industry and support heavy-duty transportation. Matching the scale-up of clean hydrogen production to a growing regional demand is a key pathway to achieving large-scale, commercially viable hydrogen ecosystems. The H2Hubs will also help to enable the development of diverse, domestic clean energy pathways across multiple sectors of the economy and serve as a central driver in helping communities benefit from clean energy investments, good-paying jobs, and improved energy security.

Contact

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More Resources

DOE OCED H2Hubs Program Website:
energy.gov/OCED/H2Hubs

PNWH2 Website:
www.pnwh2.com