Pacific Northwest Hydrogen Hub

OVERVIEW

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PACIFIC NORTHWEST HYDROGEN ASSOCIATION

About the Pacific Northwest Hydrogen Hub

The **Pacific Northwest Hydrogen Association (PNWH2)** is a multi-state nonprofit organization made up of public and private partners dedicated to creating a robust hydrogen network in the Pacific Northwest, known as the PNWH2 Hub.

Vision:

- Create a clean hydrogen ecosystem across the Pacific Northwest **in partnership with labor, Tribal Nations, and public and private sectors** to improve the lives and futures of people throughout the region.
- Accelerate deployment of hydrogen infrastructure to **attract greater investment and promote high-quality jobs** with a **strong focus on social equity and environmental justice** as guiding principles.
- Establish the Pacific Northwest as a **national benchmark for successful low-carbon intensity and economically viable hydrogen production** to decarbonize hard-to-abate industries.

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Decarbonizing hard-to-abate sectors using clean hydrogen in the PNW

The PNWH2 Hub expects to consist of eight project locations, also known as nodes, across Washington, Oregon and Montana and will leverage the region's innovative technology and abundant renewable energy to address the hardest and abate end-users, such as public transit, agriculture products, medium- and heavy-duty transport and electric power industry.

Hub Components:

- Energy Equity and Environmental Justice Plan
- Workforce Development and Jobs Plan
- Tribal Nation Engagement
- Community Engagement
- Use of Mapping and Geospatial Tools & Data to Advance Equity
- Domestic Clean Technology Manufacturing
- Energy Emergency Management & Planning
- Industry Cluster Development

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Proposed Project Locations

1. **Puget Sound Energy; Amazon; Centralia College**
   - H2 for clean energy and heavy-duty transportation
   - H2 training and workforce development facilities

2. **ALA Renewable Energy LLC; HTEC Hydrogen Technology & Energy Corporation**
   - H2 production for heavy-duty transportation, refineries, and power generation

3. **Air Liquide; NW Seaport Alliance; PACCAR**
   - Liquified H2 for heavy-duty transportation

4. **Atlas Agro**
   - H2 for calcium ammonium nitrate fertilizer production

5. **Express Ranch Hydrogen LLC**
   - H2 for heavy duty transportation and oxygen for cement production

6. **MHI Hydrogen Infrastructure LLC; Williams Field Services Group, LLC; Portland General Electric**
   - H2 for clean electricity generation
   - Providing H2 to Node 3 for heavy-duty transportation

7. **Lewis Public Transportation Benefit Area**
   - H2 for public transit

8. **St. Regis Solar LLC**
   - H2 for heavy-duty transportation

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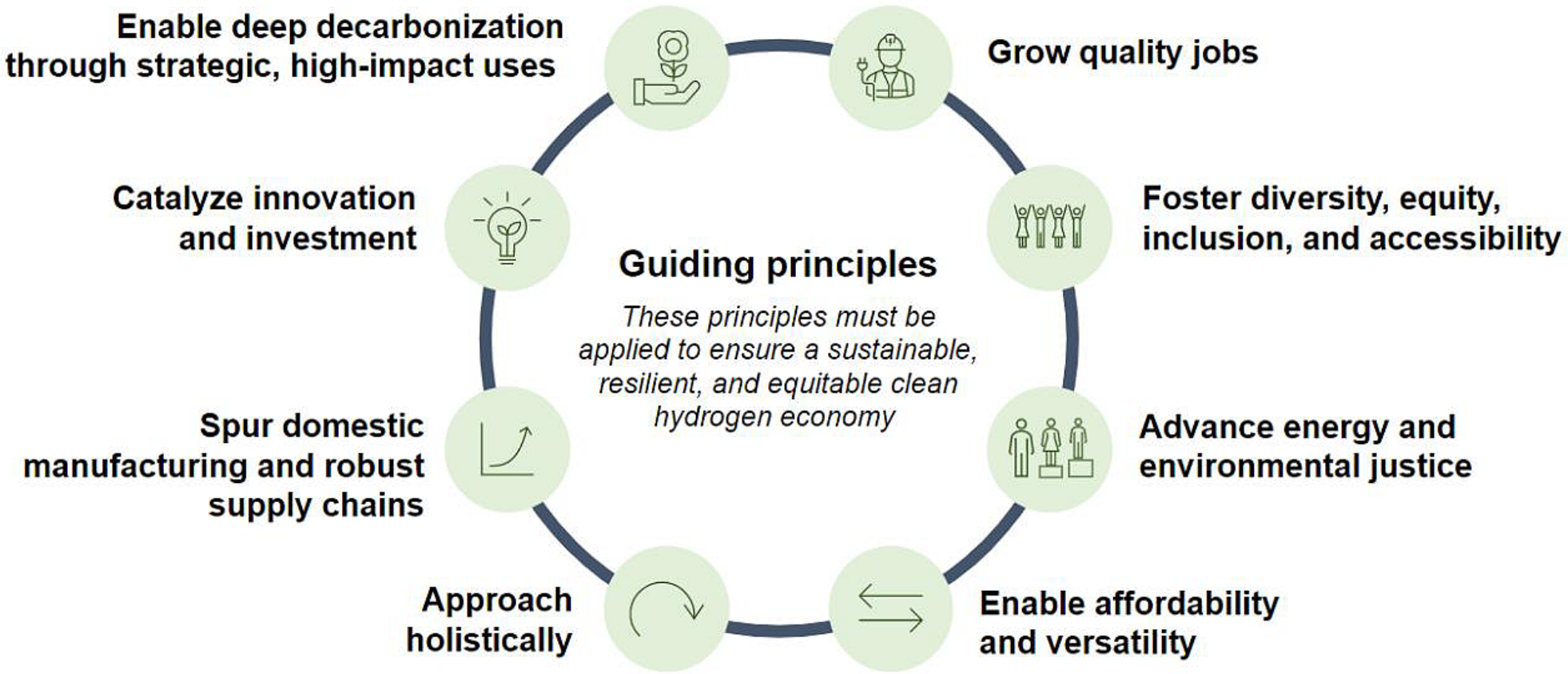
Applying National Guiding Principles



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Community Benefits Program (CBP)

- **212 stakeholder groups**, including **28 labor unions** and **15 Tribal nations**, identified during initial stakeholder analysis across the region
- **100+** community expressions of support
- Regional coalition of apprenticeship programs, colleges and universities to develop and sustain an enduring hydrogen workforce (**10,000+ jobs**)
- Additional **Justice40 benefits** include:
  - Reduced environmental/health disparities
  - Displaced worker training
  - Economic impact - tax incentives to support deferred acquisition costs, reduced energy costs, etc.

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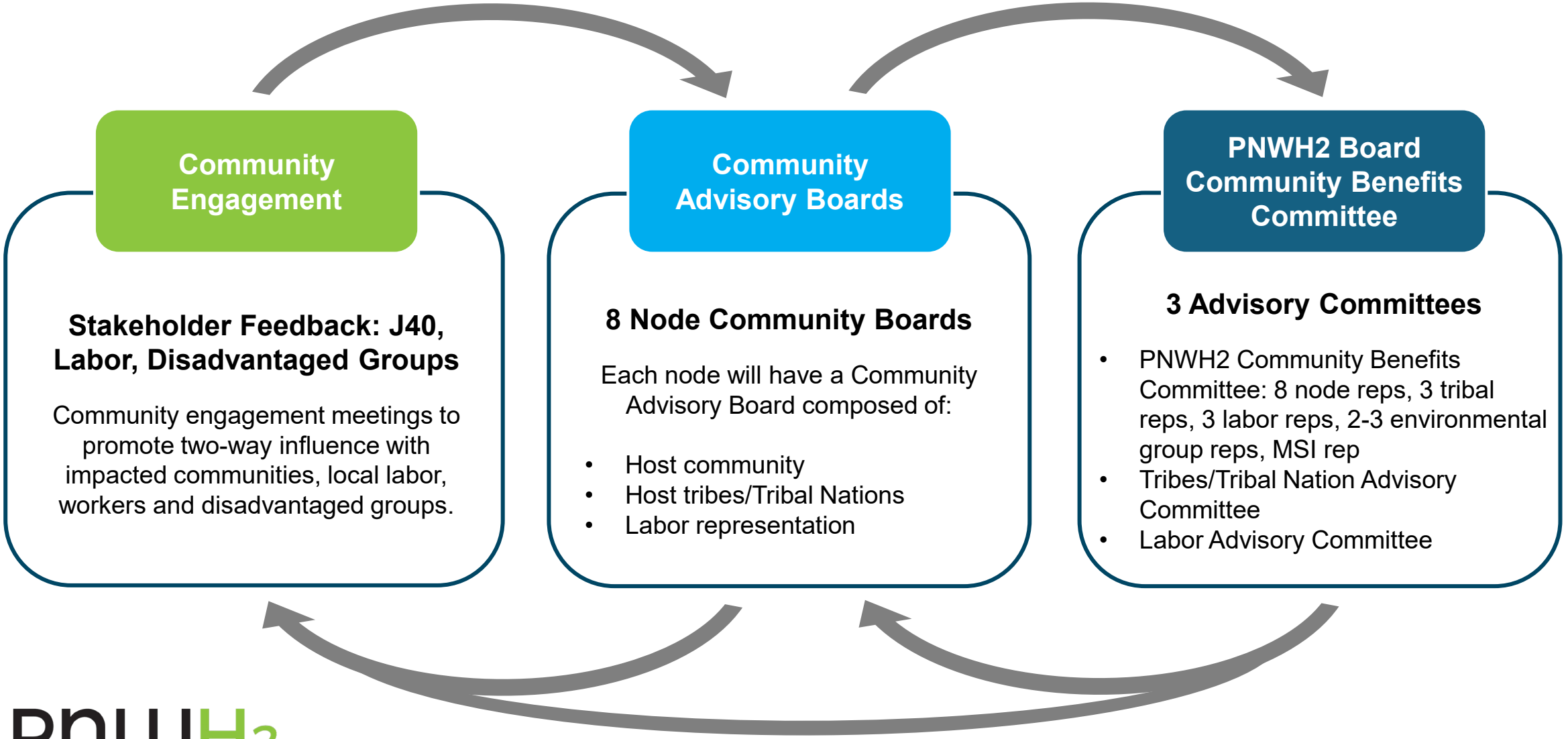
Community Benefits Plan: Community Engagement Strategy



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Timeline

- **November 2022:** PNWH2 Hub submits concept paper to the U.S. Department of Energy (DOE) in response to the Regional Clean Hydrogen Hubs Program Funding Opportunity Announcement – **79 concept papers received**
- **December 2022:** DOE "encourages" PNWH2 Hub to submit a full application – **33 invited to submit full application**
- **April 2023:** PNWH2 Hub submits its full application to DOE
- **Summer 2023:** DOE invites PNWH2 Hub representatives to complete a pre-selection interview
- **Fall 2023:** DOE OCED selects PNWH2 Hub as one of seven for award negotiations – **1 of 7 selected**
- **Fall 2023:** Negotiations with DOE begin to determine final federal funding levels, scope and terms for each hub
- **July 2024:** Phase 1 funding awarded by DOE – **2nd Hub approved**
  - *Phase 1 is expected to last one year and will encompass initial planning, permitting, analysis, design and community and labor engagement activities to ensure that the overall Hub concept is technologically and financially viable, with input from relevant local stakeholders.*

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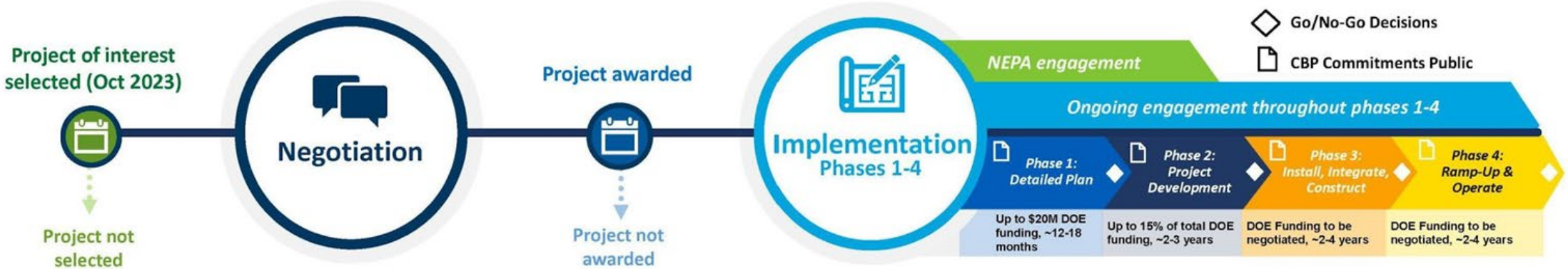
Next Steps



How to engage during negotiation:

- Visit **Hub webpages**
- Attend **Hub-specific virtual briefing**
- **Email the H2Hub**
- **Email DOE** at engage_H2Hubs@hq.doe.gov
- **Attend local engagements** (details TBD)
- Read **Initial CBP summary**

DOE will use feedback from engagements to inform the negotiation process

How to engage during Phases 1-4:

- **Attend facilitated sessions** with DOE and project performers to raise priorities and concerns
- **Reach out to H2Hub teams** any time
- **Participate in H2Hub engagements**; workforce or community agreements; or advisory boards H2Hubs may have as part of their CBP activities
- **Reach out to DOE** if any questions or concerns are not being adequately addressed **engage_H2Hubs@hq.doe.gov**
- Each phase has a go/no-go where DOE will assess project performance including CBP – **your feedback matters!**

How NEPA will work:

- **DOE will comply** with the National Environmental Policy Act (NEPA) and related requirements for the Hubs.
- Feedback via early engagement will **inform initial scope of NEPA reviews**.
- **Stakeholder engagement** throughout the NEPA process, including at scoping and draft NEPA document review stages.

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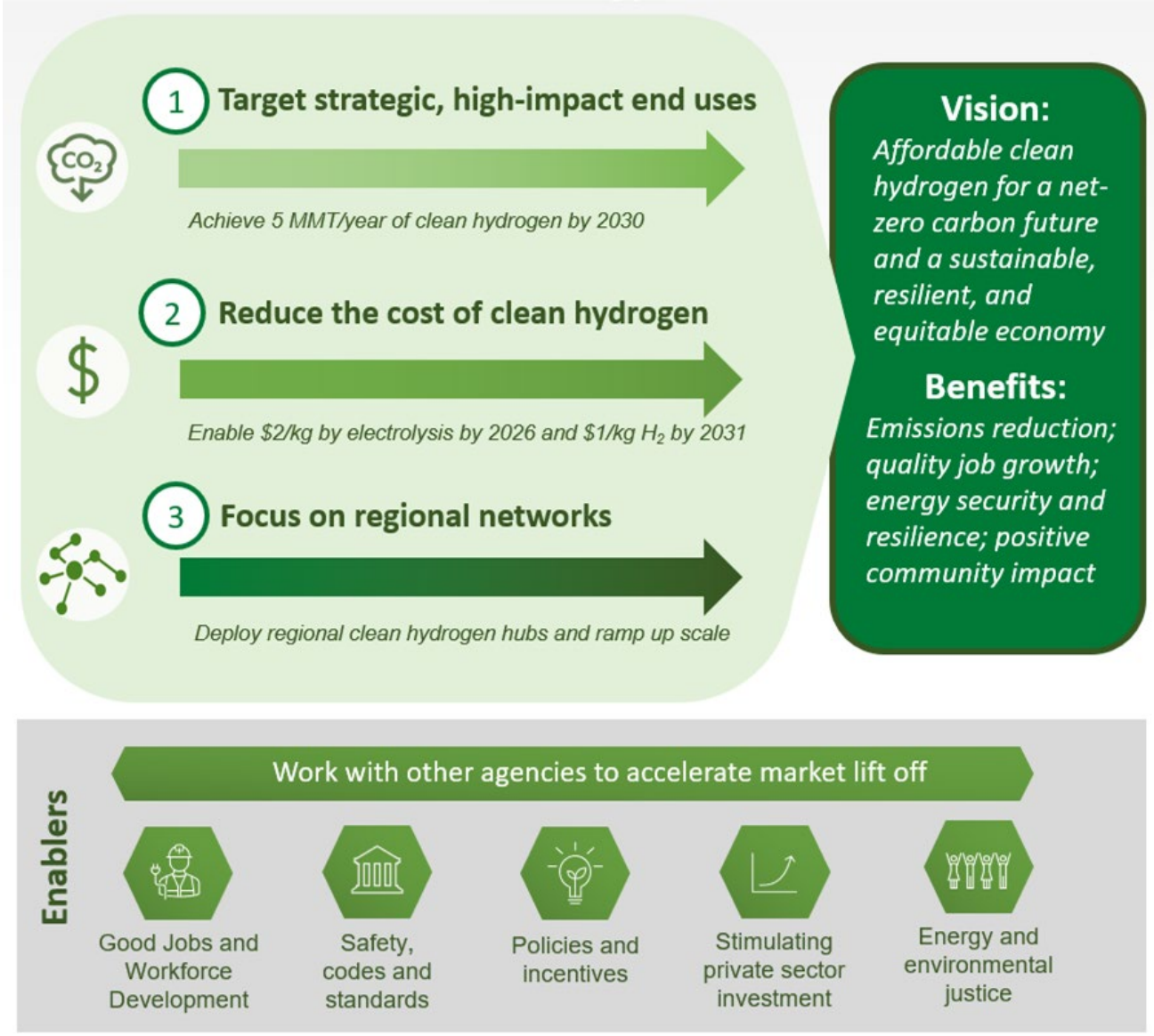
National Strategies for Clean Hydrogen & DOE Hydrogen Program Mission and Context



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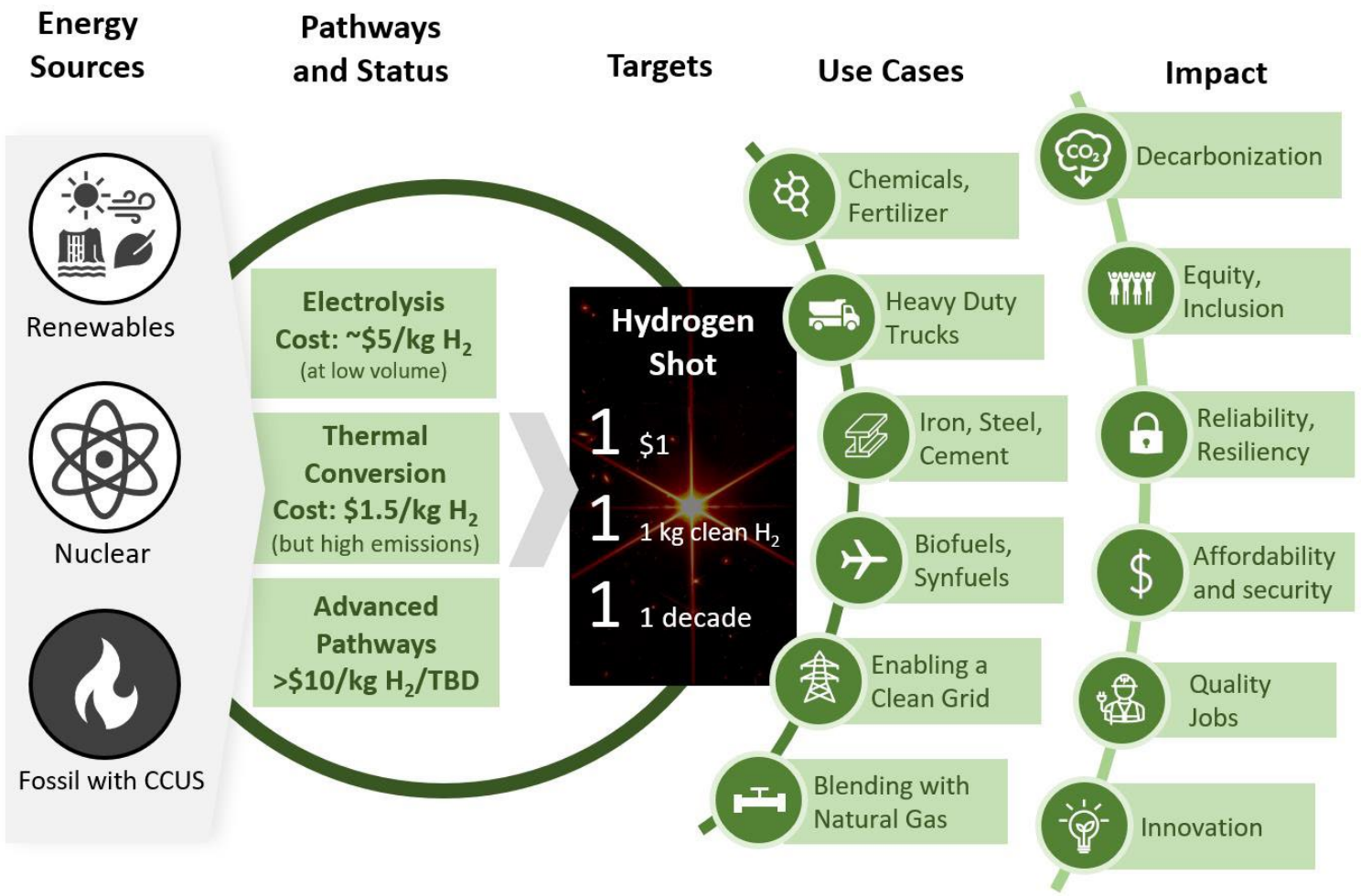
DOE Hydrogen Targets



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The seven Regional Clean Hydrogen Hubs selected for award negotiations are expected to leverage multiple production technologies, become integrated into a broad spectrum of technologies, and provide positive benefits across many communities.

The Hydrogen Shot targets build on progress for a variety of pathways, enabling a range of use cases and impacts.

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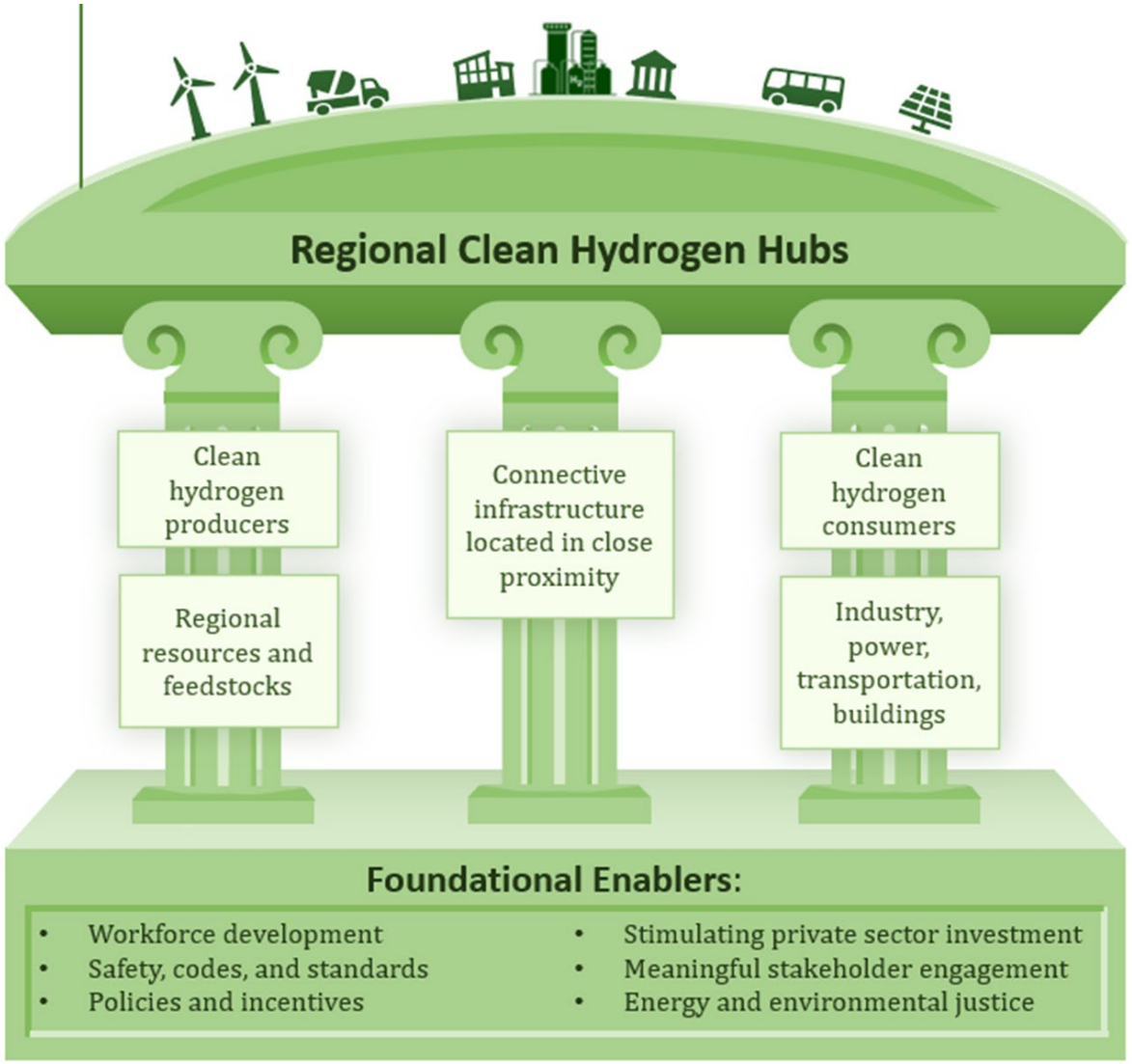
Benefits for Hub Regions

- Clean hydrogen produced and used at scale
- Carbon emissions and pollution reduction
- New sustainable jobs, including good-paying union jobs
- Clear benefits for disadvantaged communities
- Exemplary models for skills training, diversity, equity and inclusion
- Domestic manufacturing
- Sustained economic growth and scaled-up hydrogen use
- Additional and sustained private sector investment



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Thank you!

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