



# THE OFFICE OF CLEAN ENERGY DEMONSTRATIONS



## Regional Clean Hydrogen Hubs Heartland Regional H2Hub Community Briefing

11/01/2023

Office of Clean Energy Demonstrations  
U.S. Department of Energy



# Welcome!



# Welcome & Meeting Objectives

- The Office of Clean Energy Demonstrations (OCED) at DOE recently announced the selection of seven Regional Clean Hydrogen Hubs (H2Hubs)
- We at DOE wanted to connect to help clarify our process and the opportunities to plug in and help shape your community's energy future
- Engage with DOE and the partners involved in these H2Hubs



# Introductions



**Emmanuel Taylor,**  
Facilitator



**Crystal Farmer,**  
Project Manager,  
H2Hubs, OCED



**Lydia Kubiak-  
Cardona,**  
Community  
Engagement  
Specialist –  
H2Hubs, OCED



**Charlie Gorecki,**  
CEO, Energy and  
Environmental  
Research Center





# Opening Remarks

# Agenda

- Welcome
- Opening Remarks
- OCED Overview
- H2Hubs Overview
- Community Benefits and Engagement
- Heartland Regional H2Hub Project Overview
- Next Steps & Resources
- Feedback Session
- Wrap-up & Close

# OCED Overview



# OCED Mission

Deliver clean energy technology **demonstration projects at scale** in partnership with the **private sector** to **accelerate deployment, market adoption**, and the **equitable transition** to a decarbonized energy system.





# OCED Mandate



## SCALE EQUITABLE, CLEAN ENERGY

Help enable 100% clean electricity by 2035 and net zero emissions by 2050 through an equitable energy transition



## UNLOCK NEW INVESTMENT

Unlock and scale trillion-dollar clean energy follow on investment from the private sector and other sources of capital



## DE-RISK TECHNOLOGY

Maintain risk-based, balanced, and defensible portfolio of investments



## SERVE AS CENTER OF EXCELLENCE

Serve as primary DOE office to deliver full scale clean energy demonstration projects and project management oversight excellence



## ENGAGE & COLLABORATE

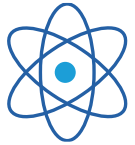
Leverage private sector and broader energy ecosystem to inform OCED and DOE technology commercialization efforts



# OCED Scope



Regional Clean Hydrogen Hubs (\$8 billion)



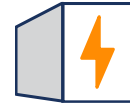
Advanced Reactor Demonstrations (\$2.5 billion)



Carbon Management (\$7 billion)



Industrial Demonstrations (\$6.3 billion)



Long-Duration Energy Storage Demonstrations (\$505 million)



Energy Improvements in Rural or Remote Areas (\$1 billion)



Clean Energy Demonstrations on Mine Land (\$500 million)



Other Initiatives (\$133 million)

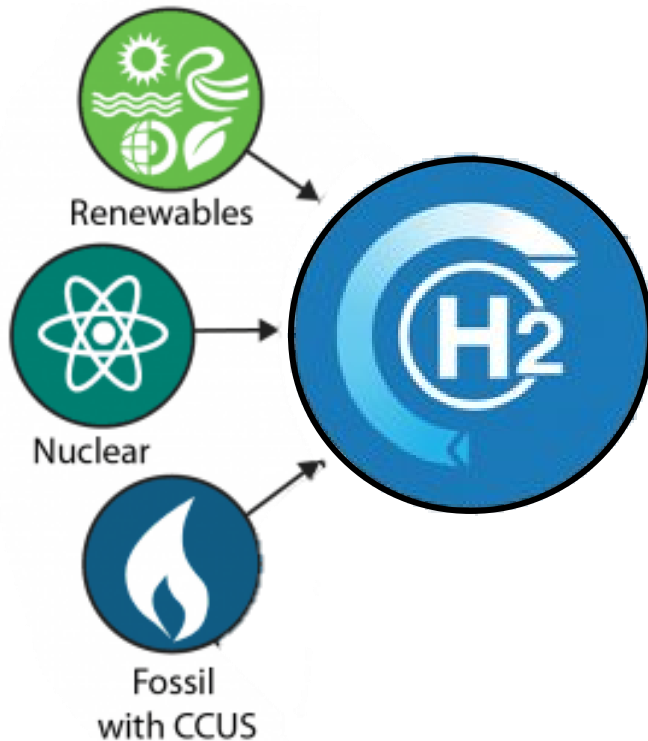


# H2Hubs Overview



# What is Hydrogen?

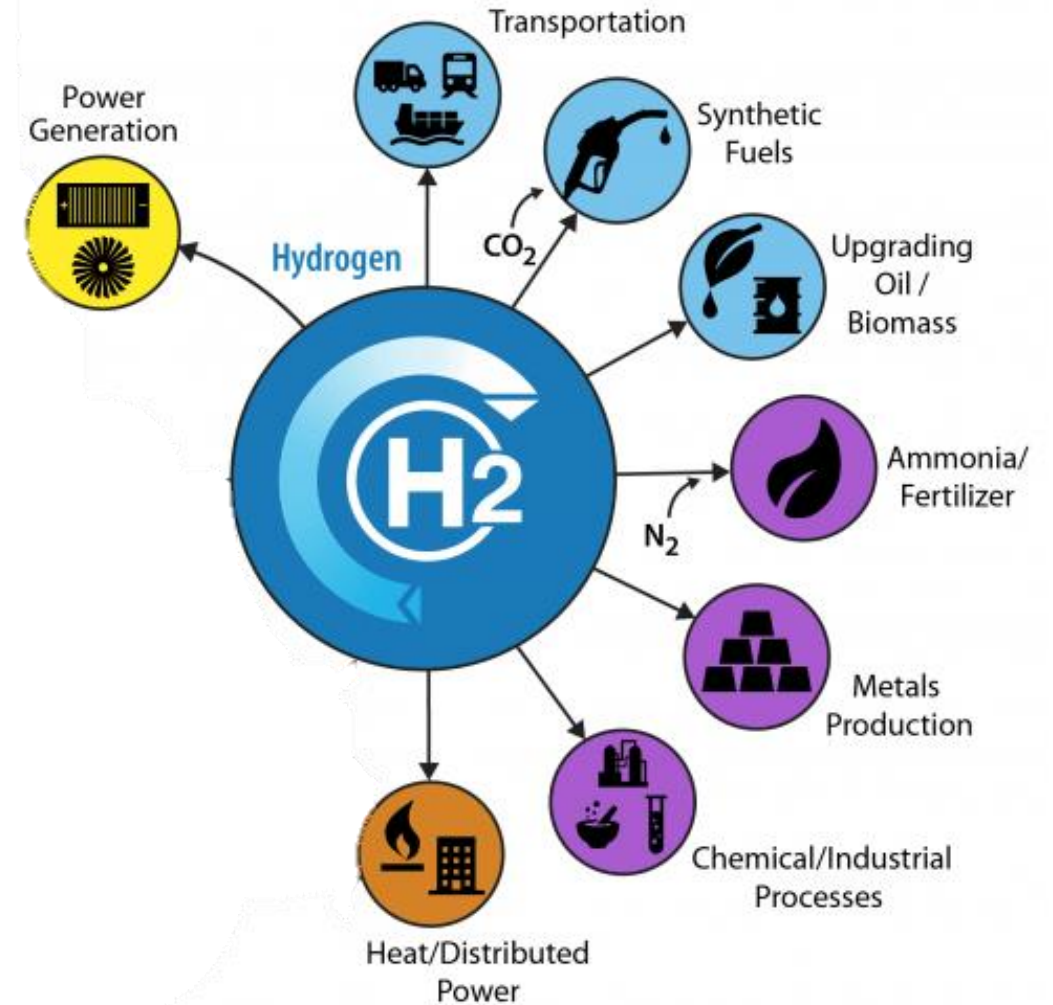
- **Hydrogen ( $H_2$ )** is the simplest and most abundant element known.
  - You might recognize it from the chemical formula for water –  $H_2O$ !



- **Hydrogen can be made using a variety of domestic energy resources.**
- Hydrogen can be produced through several processes, including:
  - Electrolysis; Direct Solar Water Splitting
  - Steam Methane Reforming
  - Biological (e.g., algae)
- **Currently, the U.S. produces 10 million metric tons of hydrogen each year.**

# What Can Hydrogen Do?

- Hydrogen is **part of a suite** of solutions that can help our nation achieve its net-zero goals.
- Helps hard-to-decarbonize sectors such as **heavy-duty transportation**, **steel and chemicals** manufacturing, and production of **liquid fuels**.
- Supports **increased integration of renewable energy** into the grid and offers multiple revenue streams for clean power generation.



# Whole of Government Approach to Clean Hydrogen



**U.S. National Clean Hydrogen Strategy and Roadmap**



**Hydrogen Shot**  
*(\$1/kg by 2031)*



**Clean Hydrogen Standard**



**H2Hubs Demand-Side Support Initiative**



**IRA tax incentives**



**Clean Hydrogen Pathways to Commercial Lift-Off Report**



**Coordination with Canada and Mexico**  
on building out the clean hydrogen supply chain and economy across North America



**Additional DOE funding:**  
**Clean H2 Electrolysis**  
**Clean H2 Manufacturing and Recycling**  
*(additional \$1.5B)*

**AND...**





# H<sub>2</sub>

## Regional Clean Hydrogen Hubs

**Build regional clean H2Hubs across the country to create networks of clean hydrogen producers, consumers, and local connective infrastructure to accelerate use of clean hydrogen.**

### ***H2Hubs Demand-Side Support Initiative***

- Sept 2023: Announced \$1B RFP. Responses were due on October 26, 2023.
- Learn more about the initiative here:  
[https://www.youtube.com/watch?v=QgOL\\_Xg7K1Q](https://www.youtube.com/watch?v=QgOL_Xg7K1Q)

### ***H2Hubs Current Status***

- October 2023: DOE announced 7 projects selected for award negotiations.



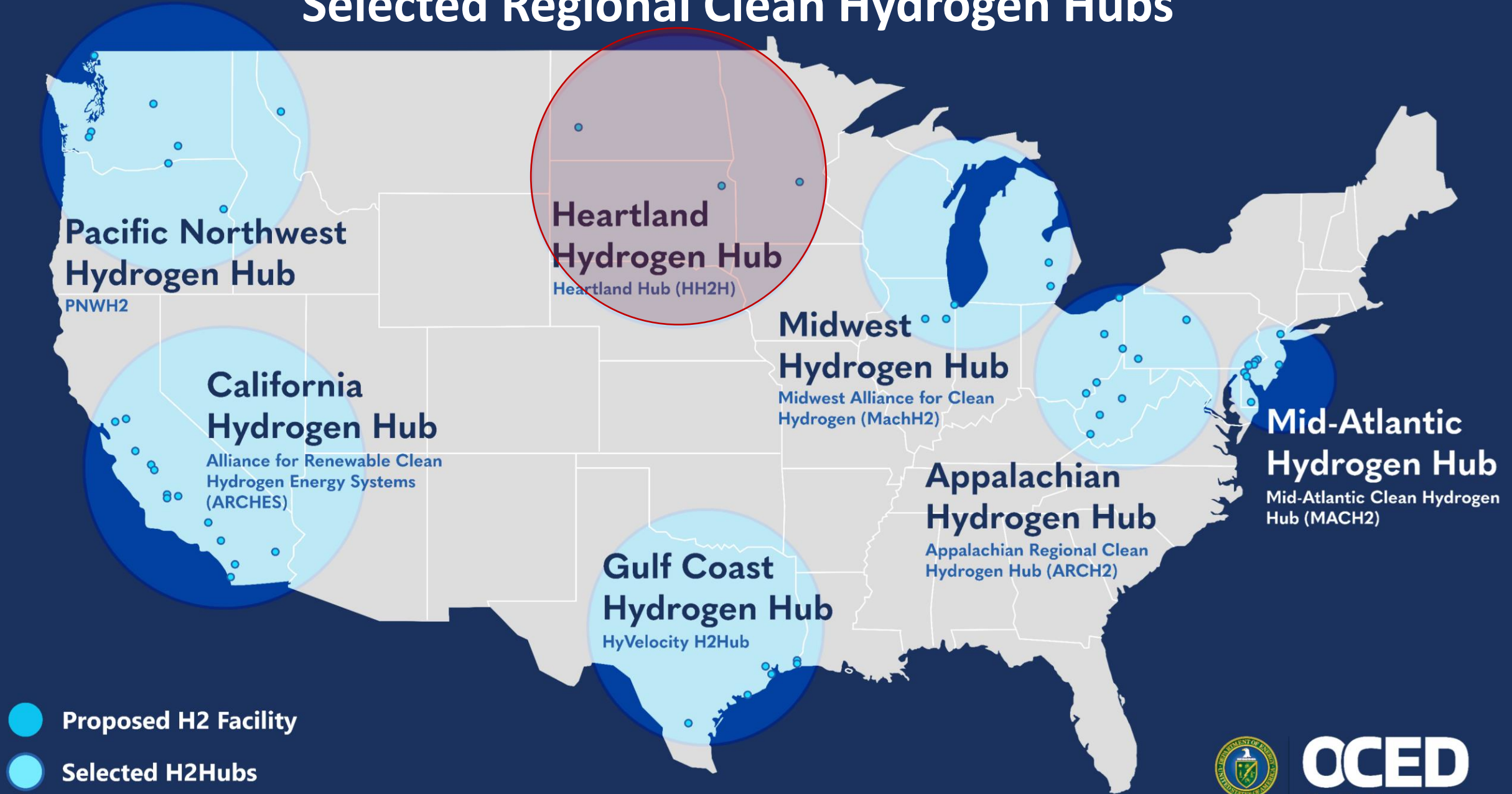
# What is a Regional Clean Hydrogen Hub?



\*Images are not drawn to scale



# Selected Regional Clean Hydrogen Hubs



## Selected H2Hubs Overview

**Unprecedented  
Investment in America's  
Hydrogen Infrastructure**

**Federal investment of  
\$7 billion**

**To accelerate adoption of  
hydrogen technologies**

**Approximately 3  
Million Metric Tons of  
Hydrogen Production  
per Year**

**Providing tangible  
benefits for Americans**

**Dedicated Dollars for  
Community Benefits**

**Tens of Thousands of  
Jobs**

**Greenhouse Gas  
Reduction of 25 million  
Metric Tons Per Year**



# Community Benefits

# Prioritizing Community Benefits in OCED Projects

OCED **requires** applicants to include a Community Benefits Plan (CBP) to help ensure broadly shared prosperity in the clean energy transition.

By **prioritizing community benefits**, we can ensure the next chapter in America's energy story is marked by greater justice; equity; security; and resilience.

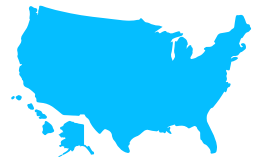
Community & Labor Engagement



Diversity, Equity, Inclusion, & Accessibility



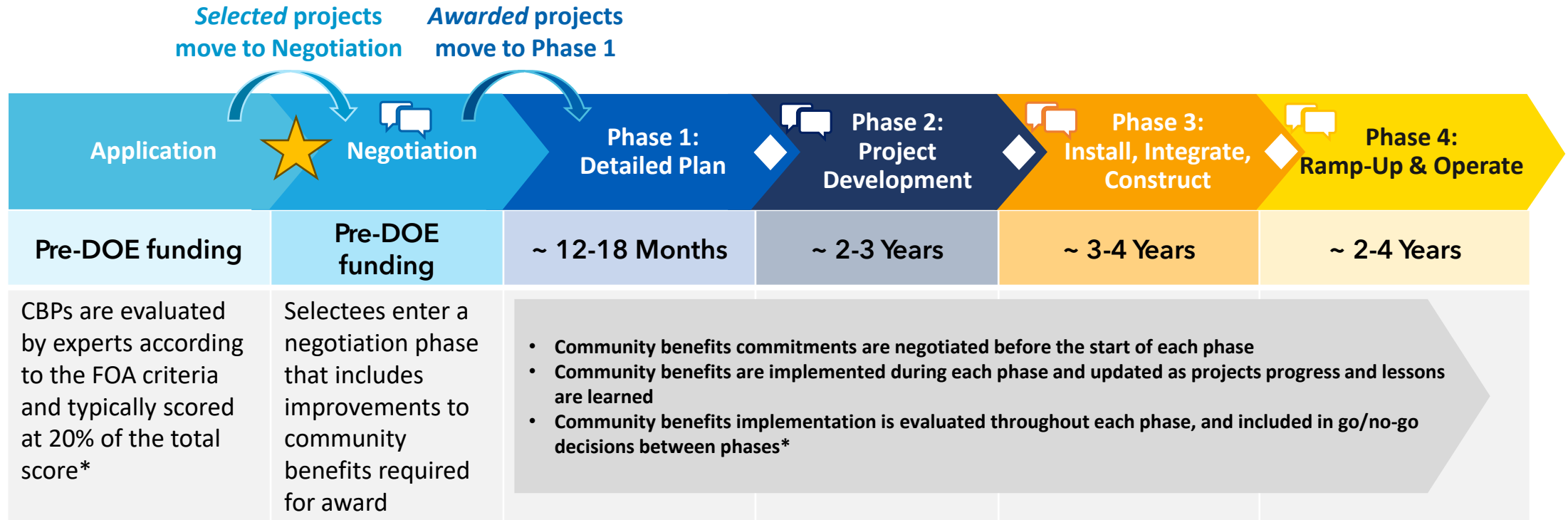
Investing in the American Workforce




Justice40 Initiative




# Community Benefit Commitments - Implementation Requirements per Phase



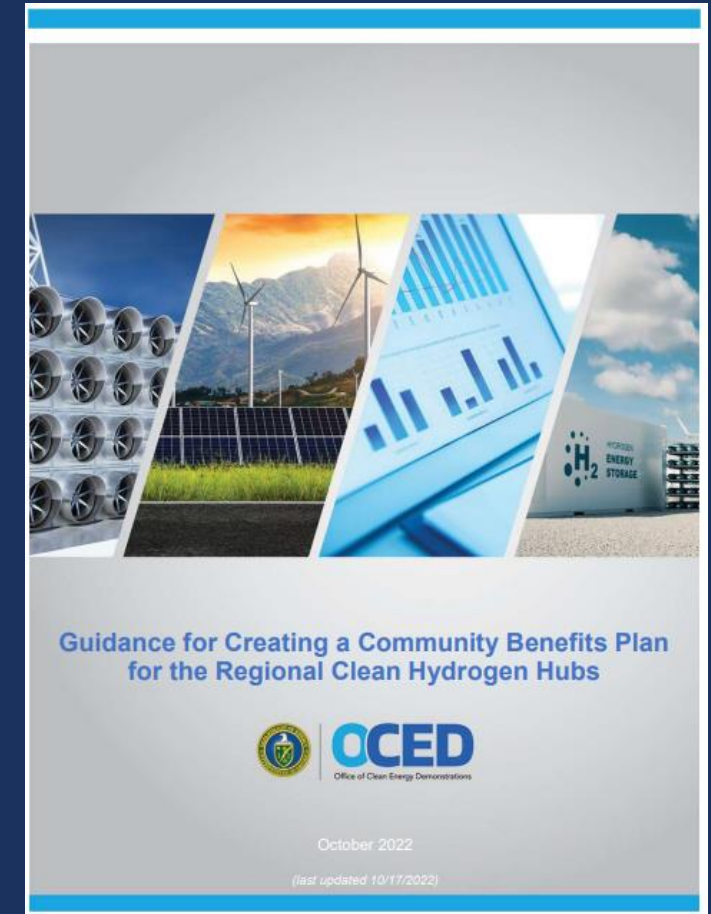
*\*CBPs are considered alongside assessments of engineering, procurement, and construction; business development and management; permitting and safety; and technical data and analysis.*

 Negotiations Conducted

 Go/No-Go Decisions

# Strong Community Benefits Commitments

- Demonstrate moving beyond a vision or assessment into **actionable goals, outcomes, and implementation steps** supported by adequate money, people, and time resources
- Include mechanisms for **accountability to and transparency with** impacted communities
- Propose clear **metrics** to measure success
- Match proposed actions to the **needs and priorities** of impacted communities
- **Robustly address** all four topic areas
- **Minimize and mitigate negative impacts** and harm, especially to already overburdened communities
- **Create quality jobs**, equitable access, and invest in workforce development
- **Evolve** to incorporate community and worker feedback
- **Build** toward lasting and enforceable Community and Labor Agreements



**OCED FOA CBP Guidance docs  
available with each FOA at:**  
<https://oced-exchange.energy.gov/>





# Heartland Regional Clean Hydrogen Hub



# Heartland Hydrogen Hub HH2H

Community Briefing  
November 1, 2023

Heartland Hydrogen Hub, LLC

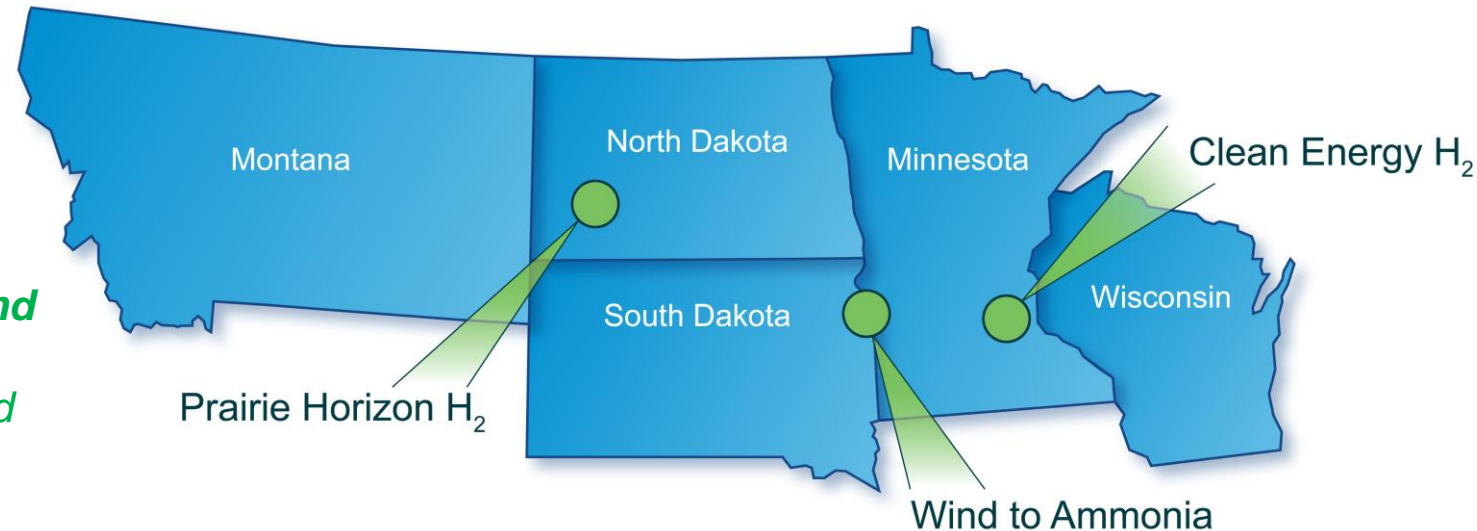


# HH2H VISION



## TO CATALYZE THE CLEAN HYDROGEN ECONOMY IN THE HEARTLAND OF AMERICA

**Mission:** To *produce clean hydrogen* using diverse technologies, *bridge east and west markets* with infrastructure, *supply multiple end uses* in existing regional markets, and *provide shared prosperity* with **local communities** and other stakeholders.



**Structural Partnerships**



**Supportive Policies**



**Proven, Viable Geology**



**Link to Enable Regional Interconnectedness**



**Committed to Community**

Note: Map shows general preliminary project locations and are subject to change during future negotiations and site planning

# HH2H STRUCTURE



PRIME APPLICANT  
**Heartland Hydrogen Hub, LLC**  
(Heartland, LLC)  
North Dakota Limited Liability Corporation

SUBRECIPIENT  
**EERC Foundation**  
HH2H Program Management

**Energy & Environmental  
Research Center (EERC)**



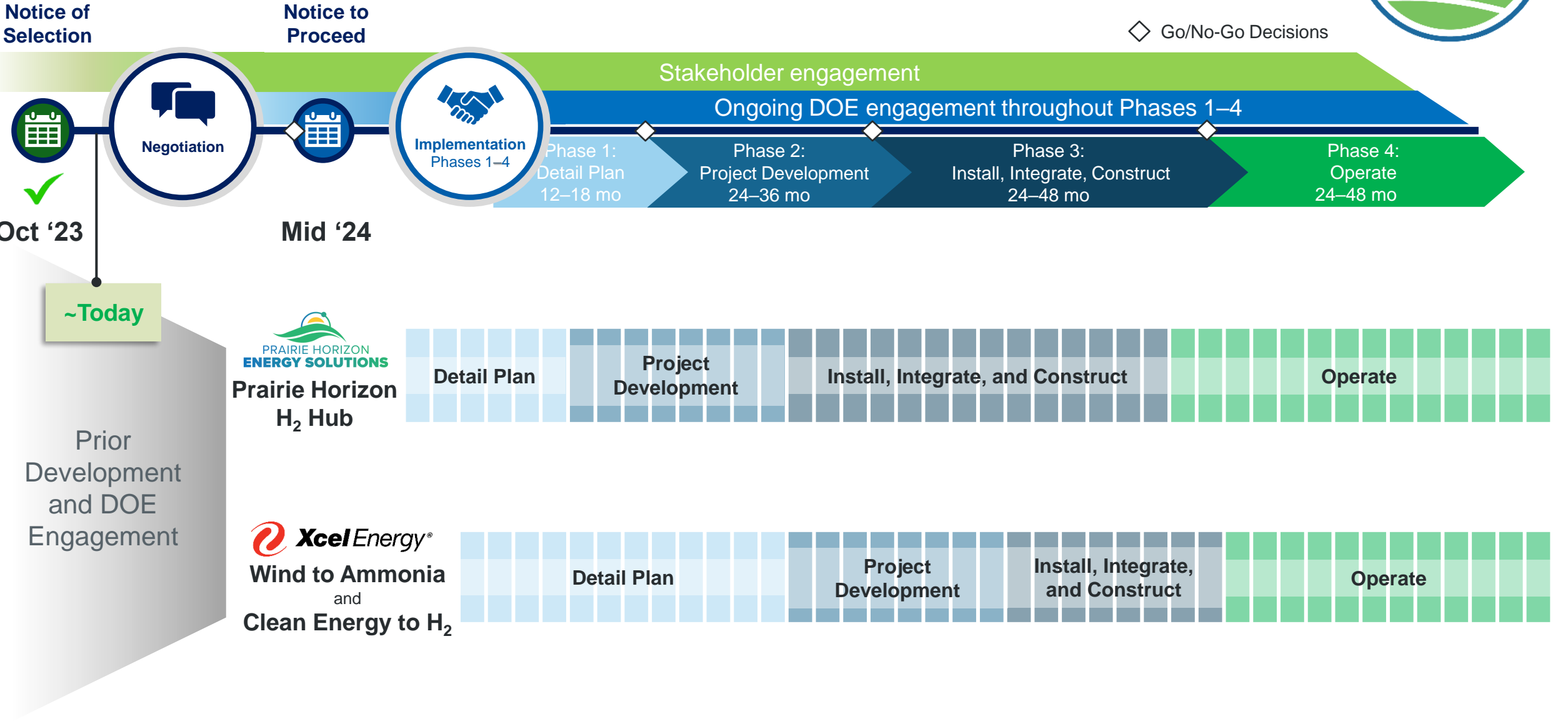
SUBRECIPIENT  
**Prairie Horizon  
Energy Solutions LLC**



SUBRECIPIENT  
**Xcel Energy, Inc.**

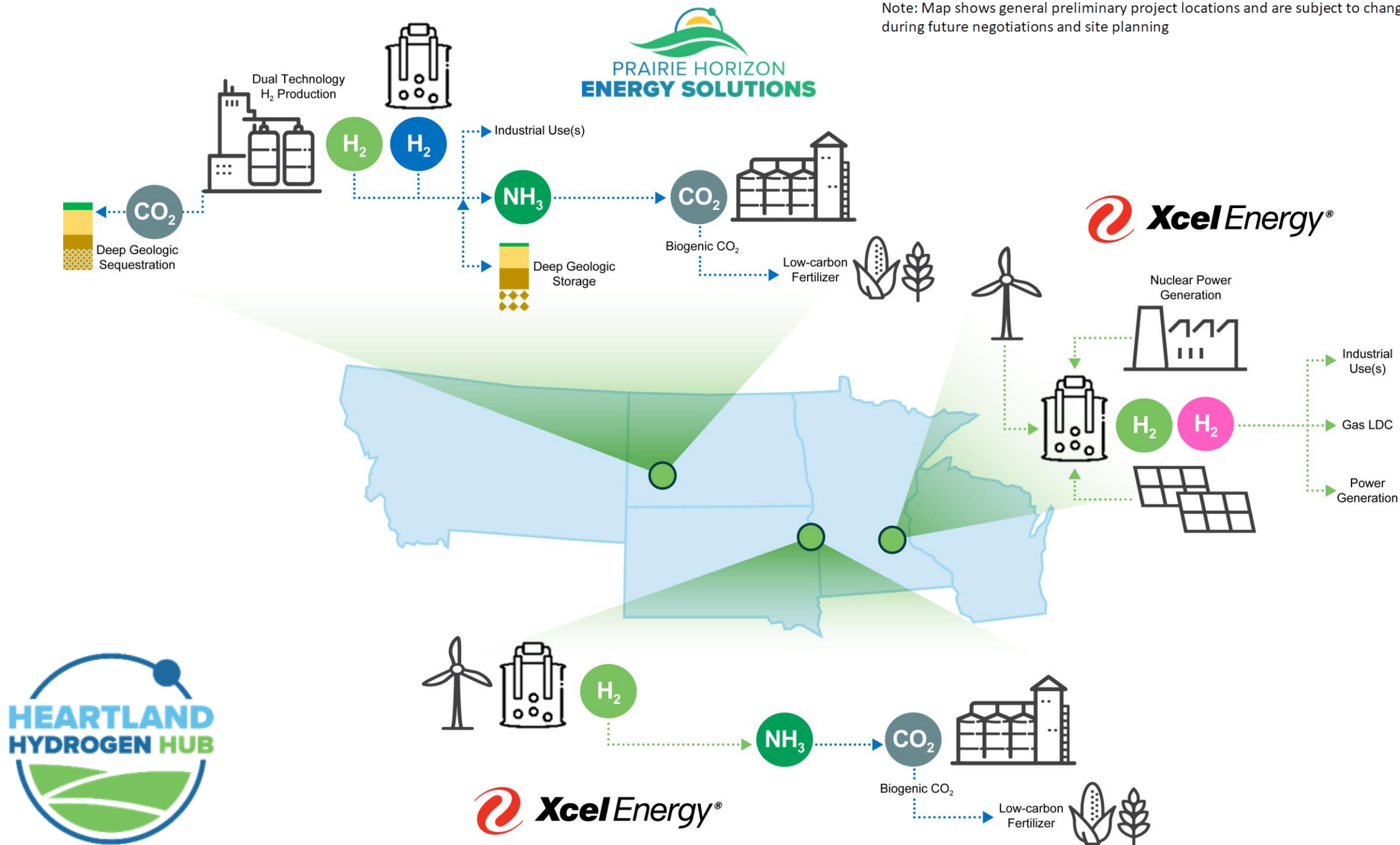


# EARLY STAGES OF DEVELOPING HUB



# CLEAN HYDROGEN LIFTOFF

Note: Map shows general preliminary project locations and are subject to change during future negotiations and site planning



# INTEGRATED AND HOLISTIC COMMUNITY BENEFITS PLAN (CBP)



*60 letters of support signed by strategic partners.*

## Foundation for Community Collaboration

### Community and Labor Engagement

Expand and strengthen existing relations with communities, Native Americans, labor, and other stakeholders.

### American Workforce

Invest in and develop the talent to drive the low-carbon energy economy in partnership with learning institutions.

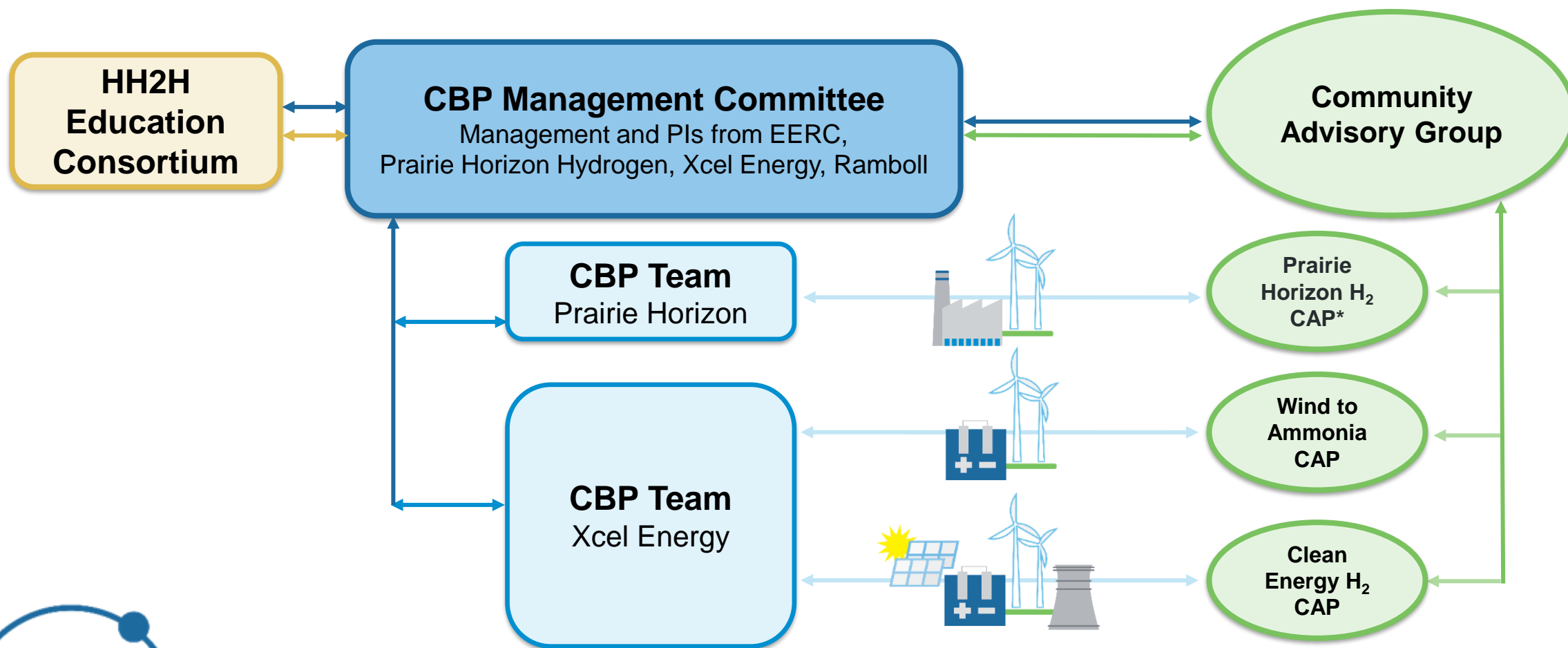
### Diversity, Equity, Inclusion, and Accessibility

Advance programs to increase opportunities for small and diverse-owned businesses.

### Justice 40

Implement strategies to increase net benefits to disadvantaged and Native American communities.

# CBP ORGANIZATIONAL CHART



CBP organization is designed to enable two-way communication and input to hub development.

\*CAP – Community Advisory Panel





# THANK YOU!

Charlie Gorecki

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701.777.5355

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[www.HeartlandH2Hub.com](http://www.HeartlandH2Hub.com)

[HH2H@undeerc.org](mailto:HH2H@undeerc.org)

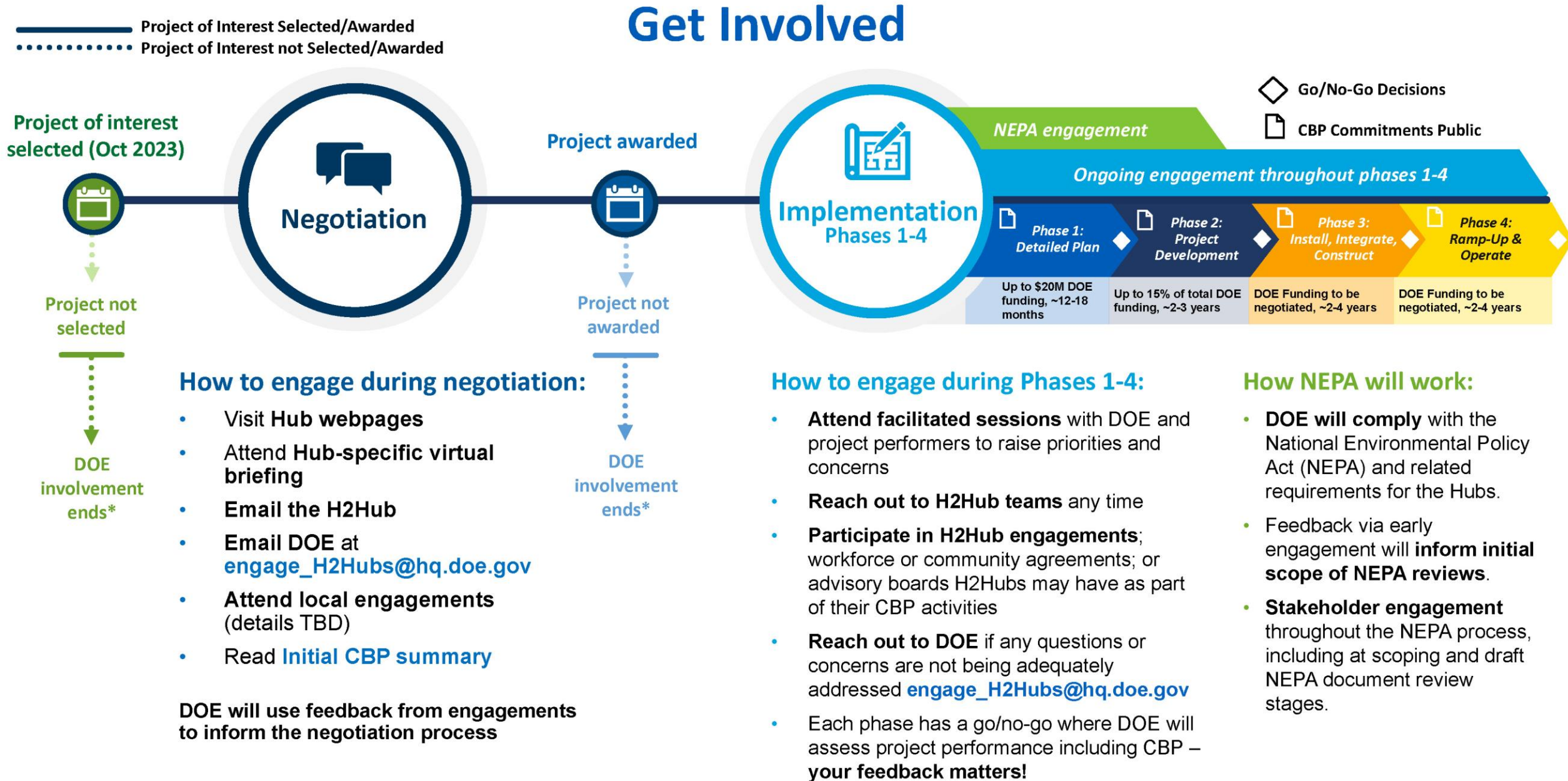






# Next Steps & Resources





\*Communities and labor can still engage with the applicant based on the information they released to date to explore a path forward without this specific source of federal funding.

# OCED Engagement

OCED aims to support meaningful **community-awardee-OCED** engagement through the life of the awarded H2Hub. **How?**

## Local Engagements



Small community dialogues



Deliberative forum

## Outcomes



Establish process for long-term engagement



Co-develop priorities

## Next Steps – Virtual H2Hub Community Briefings

OCED will hold seven community briefings to share information with the communities hosting H2Hubs.

Information and to register: <https://www.energy.gov/oced/h2hubs-local-engagement-opportunities>

**Appalachian Hydrogen Hub**  
**Tuesday, October 24, 2023**  
**6:00-7:30 p.m. ET**

**Mid-Atlantic Hydrogen Hub**  
**Wednesday, October 25, 2023**  
**6:00-7:30 p.m. ET**

**California Hydrogen Hub**  
**Wednesday, October 25, 2023**  
**8:00-9:30 p.m. ET**

**Gulf Coast Hydrogen Hub**  
**Monday, October 30, 2023**  
**6:00-7:30 p.m. ET**

**Pacific Northwest Hydrogen Hub**  
**Monday, October 30, 2023**  
**8:00-9:30 p.m. ET**

**Midwest Hydrogen Hub**  
**Wednesday, November 1, 2023**  
**6:00-7:30 p.m. ET**

**Heartland Hydrogen Hub**  
**Wednesday, November 1, 2023**  
**8:00-9:30 p.m. ET**

\*Subject to change based on negotiations. Negotiations may take several months.

## Next Steps – Negotiations

**Award Negotiations:** OCED will commence negotiations with project selectees.

**After Award: *IF the projects receive an award (successful negotiations)***

- Selectees enter into cooperative agreement with OCED
- Detailed Project Plan begins
- OCED will work with selectees to ensure compliance with the National Environmental Policy Act (NEPA)
- Significant engagement with OCED and awardee



# Selectee Webpages

**Appalachian Hydrogen Hub**

<https://www.arch2hub.com/>

**California Hydrogen Hub**

<https://archesh2.org/>

**Heartland Hydrogen Hub**

[www.HeartlandH2Hub.com](http://www.HeartlandH2Hub.com)

**Gulf Coast Hydrogen Hub**

<https://www.hyvelocityhub.com>

**Mid-Atlantic Hydrogen Hub**

<https://mach-2.com/>

**Midwest Hydrogen Hub**

<https://machh2.com/>

**Pacific Northwest Hydrogen Hub**

<https://pnwh2.com/>



# Key DOE Offices for H2Hubs



# H2Hubs Resources

## Regional Clean Hydrogen Hubs

- [Program Page](#)
- [Press Release](#)
- [Overview of Selected Projects](#)
- [Local Engagement Opportunities](#)
- [OCED CBP fact sheet](#)

## Demand-Side Support Initiative for Clean Hydrogen

- [Request for Proposals \(RFP\)](#)
- [Video: OCED Update on Demand-Side Support Initiative](#)

## Additional Clean Hydrogen Resources

- [U.S. National Clean Hydrogen Strategy and Roadmap](#)
- [Clean Hydrogen Pathways to Commercial Liftoff Report](#)
- [Hydrogen Shot](#)

## Additional DOE Resources

- [Office of Economic Impact and Diversity assistance to advance equity & CBP in communities](#)
- [Office of Energy Jobs technical assistance to advance CBP jobs, labor & skilled workforce](#)





# Feedback Session



# Ground Rules for Discussion

- Submit questions using the Q&A feature.
  - You can also see and upvote other questions that have been asked.
- Reserve judgement
- One idea at a time
- It is okay to build on the ideas of others
- Clarifying questions are okay





**For more information**

- Reach OCED about the H2Hubs [HeartlandH2Hub@hq.doe.gov](mailto:HeartlandH2Hub@hq.doe.gov)
- OCED Website & Newsletter Sign-up [energy.gov/oced](https://energy.gov/oced)  
*Scroll to bottom to sign up here:*

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GO

- OCED Exchange (RFIs, NOIs, and FOAs) [oced-exchange.energy.gov](https://oced-exchange.energy.gov)
- Follow us on LinkedIn [linkedin.com/company/doe-oced/](https://linkedin.com/company/doe-oced/)



# Thank you!



**OCED**  
Office of Clean Energy Demonstrations



For more information; please visit [energy.gov/OCED](https://energy.gov/OCED)