



Ohio Clean Hydrogen Hub Alliance

Regional Clean Hydrogen Hub Update – September 27, 2022

Agenda



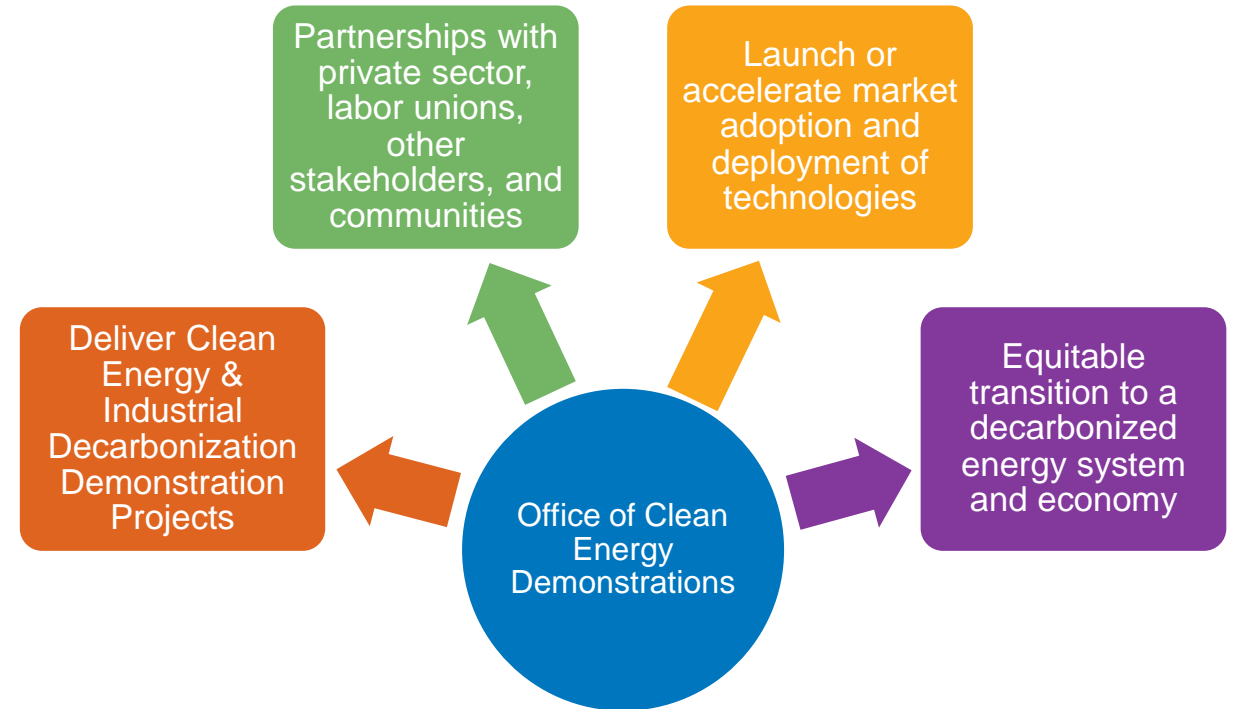
DOE FOA Overview

Regional Clean Hydrogen Hub (H2Hub) DOE Funding Opportunity Announcement (FOA)

- FOA released September 22, 2022 by the DOE Office of Clean Energy Demonstrations (DE-FOA-0002779)

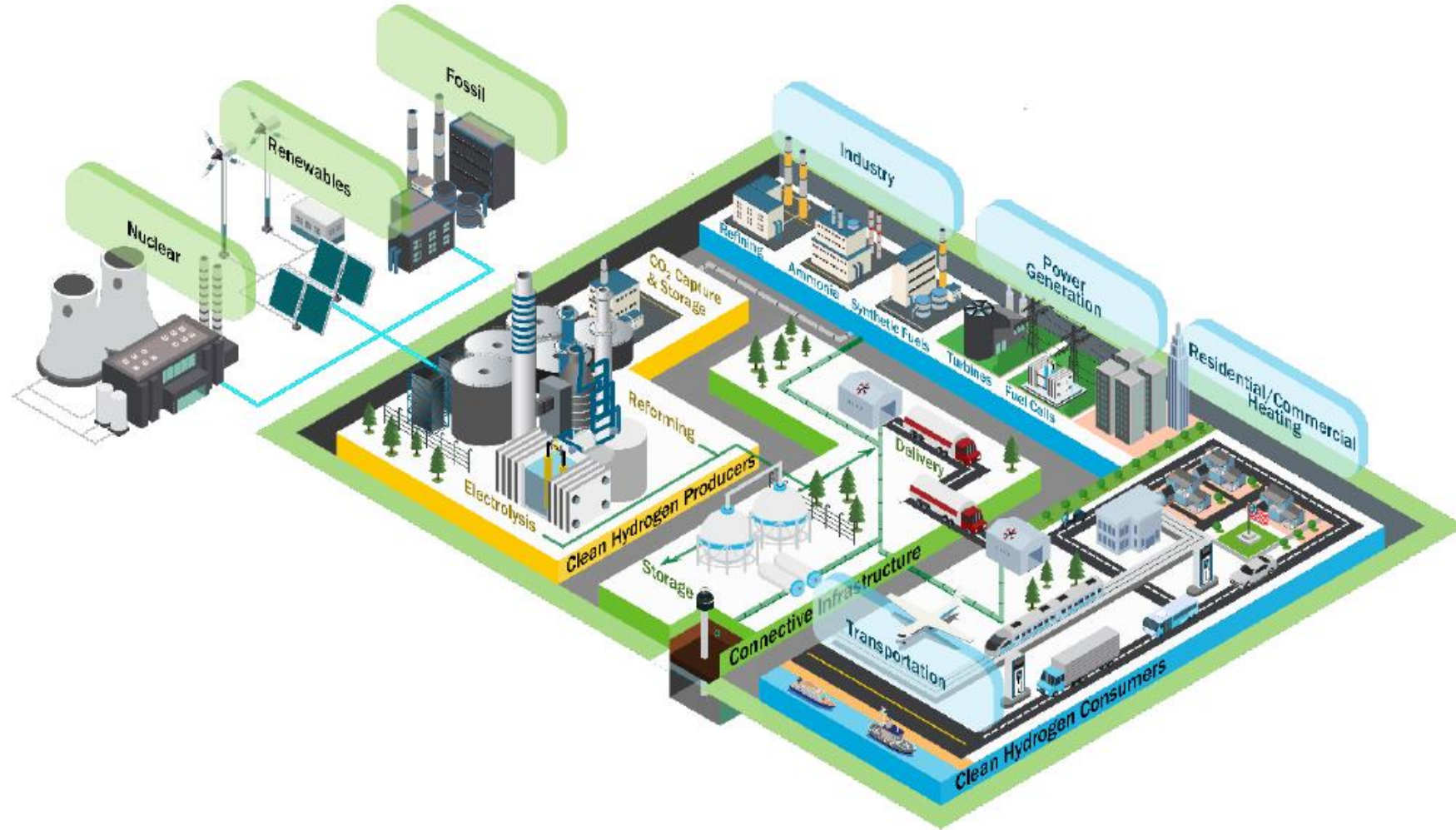
<https://oced-exchange.energy.gov/>

- \$8B in federal funding as prescribed in the Bi-Partisan Infrastructure Law
- H2Hubs defined... “a network of clean hydrogen producers, potential clean hydrogen consumers, and connective infrastructure located in close proximity.”



H2Hub Vision

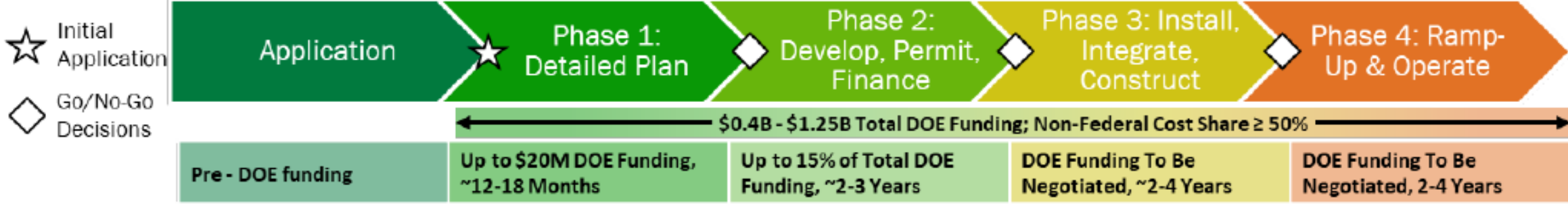
Utilize multiple clean hydrogen production methods (using renewables, nuclear energy, fossil fuels with CCS), end-uses (industrial, power generation, residential/commercial heating, and transportation), and necessary connective infrastructure all in close proximity



DOE's Implementation Approach

- Expected to award 6-10 H2Hubs at \$500M - \$1B each (min \$400M, max \$1.25B)
- Remaining \$1-2B reserved for future launches or other supporting activities
- Minimum 50% cost share
- Executed over 8-12 years (or faster)
- Min of 50-100 metric ton per day H2 product to ensure regional impact & scale
- Key Factors:
 - Demonstrably aid achievement of, but do not necessarily need to meet, the clean hydrogen production standard.
 - Demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen,
 - Can be developed into a national clean hydrogen network to facilitate a clean hydrogen economy.
 - Evaluated by the degree to which they reduce emissions across the full life cycle.

H2Hub Program Phases



Technical Volume

- Business Dev & Management
- EPC & Operations
- Safety, Security, Regulatory
- Risk Analysis & Mitigation
- Technical Data & Analysis

Community Benefits Plan

- Quality Jobs & Energy Equity

While this FOA is soliciting plans for all 4 phases of H2Hub projects, DOE will only initially commit to funding Phase 1 activities.

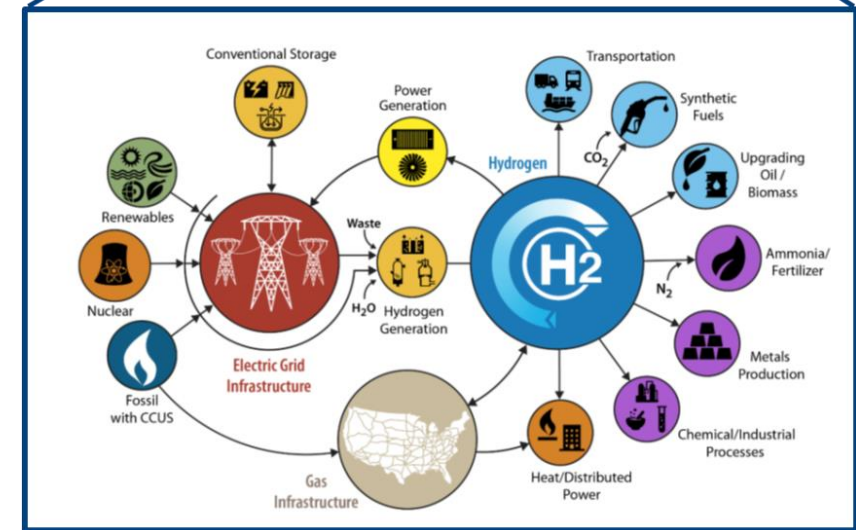
FOA Schedule

- FOA released - September 22, 2022
- Concept Papers Due – November 7, 2022
- Encourage/Discourage Notification – December 2022
- Full Application Due – April 7, 2023
- Replies to Review Comments – May 31, 2023
- Pre-Selection Interviews – Summer 2023
- DOE Selection Notification – Fall 2023
- Award Negotiations – Winter 2023-2024

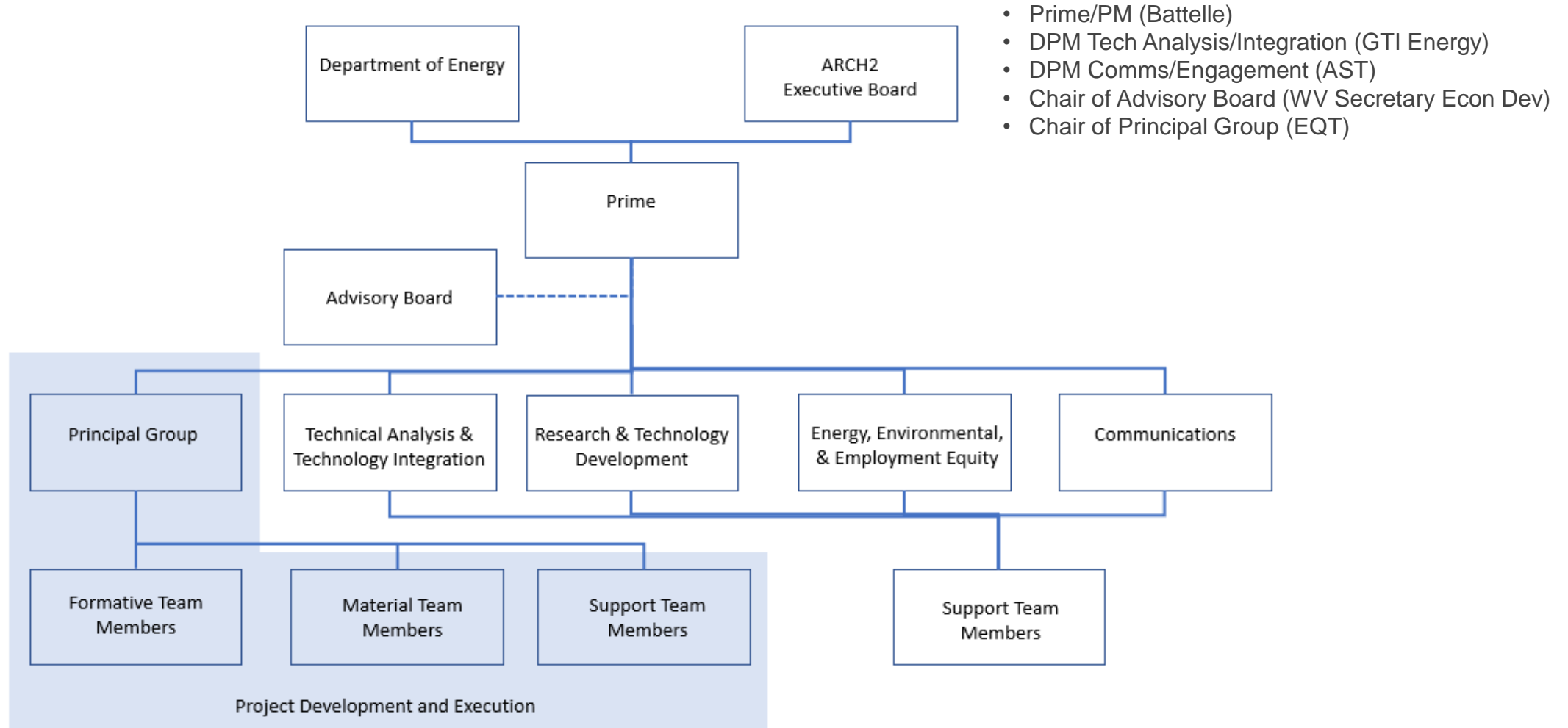
ARCH2 Overview

Appalachian Regional Clean Hydrogen Hub (ARCH2) – Unique Advantages

- Existing infrastructure for hydrogen production and transport via low-cost natural gas production and existing pipelines transportation networks.
- Vast energy resources to easily expand hydrogen production to include green hydrogen.
- Uniquely situated in an industrial hub along the Ohio River, the region has an abundance of end-users including power generation, industry, commercial, residential and transportation sectors.
- Proximity to major end-use markets in the Midwest, Northeast and Southeast
- A highly skilled energy workforce
- Support from labor organizations, environmental non-profits, and community stakeholders
- World-class academic and technology institutions.
- Vast opportunity to positively impact disadvantaged and underserved communities via job creation and environment and energy justice
- Substantial private sector interest to bring required capital to meet the 50% cost-share match.
- The BIL requires at least two hydrogen hubs in natural gas producing regions and Northern Appalachia is the second largest natural gas producer in the U.S.

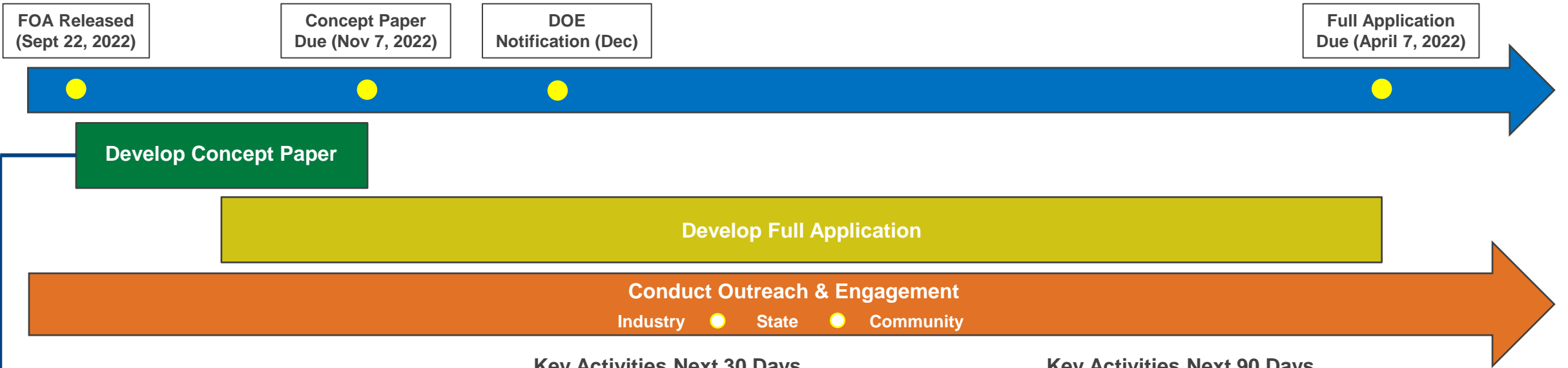


ARCH2 Team Structure



Path Forward

Next 30, 90 Days



- Key tech/systems to be deployed
- Development plan and timeline
- Key risks/challenges
- DOE funding impact
- Mapping to DOE objectives
- Long term viability

Key Activities Next 30 Days

- Issue press release
- State level engagement
- Independent meetings w/ participants
- Convene working groups
- Prepare concept paper
- Develop ARCH2 by-laws
- Develop communications plan
- Initiate community engagement

Key Activities Next 90 Days

- Define project portfolio
- Determine funding allocations
- Determine participation levels
- Prepare full application
- Implement communications plan
- Community engagement

Working Group 1	Working Group 2	Working Group 3	Working Group 4	Working Group 5	Working Group 6
Hydrogen Clusters	CO2 Clusters	End-User Clusters	EJ and DEIA Priorities	Market Adoption & Sustainment	Stakeholder Outreach

Entities interested in participating in ARCH2 are encouraged to contact:

info@arch2hub.com

BATTELLE

It can be done