



International Partnership  
for Hydrogen and Fuel Cells  
in the Economy

## *United States Update*

39<sup>th</sup> IPHE Steering Committee Meeting  
26 – 27 April 2023  
Pretoria, South Africa

# Announcements / New Initiatives *United States*

## Investments/Funding/Policies/Initiatives

- DOE updates to National Clean Hydrogen Strategy and Roadmap and Clean Hydrogen Production Standard underway
- DOE Pathways to Commercial Liftoff Initiative launched– includes a report on hydrogen focusing on engagement between public and private sectors on H2
- EPA approved California’s Clean Air Act waivers which will help with deployment of zero-emission trucks, incl. H2 fuel cells in CA and other states
- Over \$1B in combined DOE funding announcements to advance hydrogen and fuel cells

## New RDD&D Activities – Examples

- \$750 million announced for electrolysis, manufacturing, and recycling
- \$200 million announced to support R&D in Energy Earthshots including H2
- \$156 million announced for RD&D to reduce GHG across U.S. industrial sector through technology including hydrogen

## Collaborations

- Partnered with IPHE Early Career Network to host Hydrogen Career Insights webinar
- Collaborated with MI Clean Hydrogen on workshop about membranes for fuel cells and electrolyzers



**President Biden visits Cummins first U.S. based electrolyzer facility in Fridley, Minnesota as part of his “Investing In America” tour**

# Examples of Lessons Learned and Impact *United States*

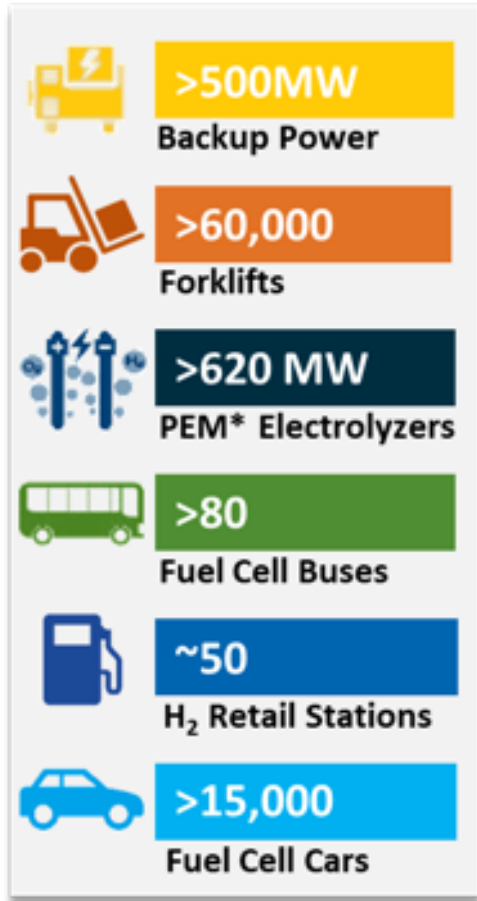


Program initiative, policy, regulation, or mandate	Lessons Learned/Outcomes
<p>Funding Opportunity Announcements (FOAs) that include requirements to help deliver a more equitable and clean energy future through Community Benefits Plans.</p> <p>Received feedback through multiple stakeholder engagement efforts such as listening sessions, workshops, and Requests for Information (RFIs) that helped inform requirements for or focus areas in the Community Benefits Plans.</p>	<ul style="list-style-type: none"> <li>Released guidance on creating a Community Benefits Plan as part of DOE FOAs, including FOAs in support of the BIL: H2Hubs FOA; and Clean Electrolysis, Manufacturing, and Recycling FOA.                             <ul style="list-style-type: none"> <li>Sections include:                                     <ul style="list-style-type: none"> <li>Community and Labor Engagement</li> <li>Investing in Workforce</li> <li>Diversity, Equity, Inclusion, and Accessibility (DEIA)</li> <li>Justice40 Initiative</li> </ul> </li> </ul> </li> <li>When incorporated comprehensively, these will help ensure equitable access and prosperity in the clean energy transition</li> </ul>
<p>Executive order 14091, "Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government"</p>	<ul style="list-style-type: none"> <li>Requires federal agencies to have an Equity Action Plan</li> <li>Requires better quality and frequency of engagement with DACs</li> <li>Increases responsiveness to communities and builds on civil rights</li> <li>Encourages community and Tribal engagement</li> </ul>



# United States – Profile April 2023

## Status of Deployments



\*Proton exchange membrane

## Leading Government Initiatives



### IRA Hydrogen Incentives

Clean Hydrogen Production Tax Credit (up to \$3/kg) and up to 30% Investment Tax Credit

Tax credit of 30% of the cost of alternative fuel refueling property placed in service before 2033.

30% credit for commercial FCEVs through 2032 and \$7,500 credit for new FCEV purchases.

### Justice40 Initiative

40% of benefits from federal investments to disadvantaged communities (EJ40)

### Diversity, Equity, Inclusion, and Accessibility (DEIA)

## Goals or Focus Areas

<b>Clean Hydrogen</b> \$1/kg production \$2/kg delivery \$9/kWh storage	<b>Electrolyzers</b> \$150/kW 73% efficiency 80K hrs durability
<b>Fuel Cells (HD)</b> \$80/kW 25K hrs durability	<b>Enable J40 Priorities, DEIA</b>

## Funding

Bipartisan Infrastructure Law includes **\$9.5B for Clean Hydrogen** - Signed Nov 15, 2021

- \$7B H2Hubs
- \$750M RD&D efforts for electrolysis, manufacturing, and recycling

**Fiscal Year (FY)2023 Request for DOE Hydrogen Program: ~\$400M**

## Deployment Goals

- 100% clean electricity grid by 2035
- Net-zero emissions by 2050
- 50-52% emissions reductions by 2030
- Clean hydrogen production: 10 MMT by 2030; 20 MMT by 2040; 50 MMT by 2050



H2 Demo projects to enable at scale deployment and support climate goals



# Thank you



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