



International Partnership
for Hydrogen and Fuel Cells
in the Economy

United States Update

Dr. Sunita Satyapal
U.S. Department of Energy
37th IPHE Steering Committee Meeting
26 – 27 April 2022
Virtual Meeting

Announcements / New Initiatives – *United States*

Investments/Initiatives

- BIL covering \$9.5B in H2

New RDD&D Activities

DOE released:

- Supply chain report
- Two Requests for Information (RFIs) on hydrogen hubs, electrolysis, and manufacturing RDD&D

Key Collaborations

- Multiple virtual workshops, including:
 - Liquid Hydrogen Technologies in **collaboration with NASA and industry**
 - Environmental Impacts of Hydrogen in **collaboration with the European Commission’s Clean Hydrogen Joint Undertaking, EC, IPHE, H2 Council**

Bipartisan Infrastructure Law (BIL) signed by President Biden on November 15, 2021 – covers \$9.5B for H2

\$8B – Regional Clean Hydrogen Hubs
\$1B – Clean Hydrogen Electrolysis
\$500M – Clean Hydrogen Manufacturing and Recycling

Includes the development of a National Clean Hydrogen Strategy and Roadmap

Registration for the 2022 Virtual AMR is open!

June 6-8, 2022

www.annualmeritreview.energy.gov

Historically Black Colleges and Universities and Other Minority Institutions (HBCU-OMIs) Talent Pipeline

DOE announced \$2M in funding for talent pipeline to bridge the gap in clean hydrogen workforce development

APPLY FOR FUNDING TO TRAIN THE NEXT GENERATION HYDROGEN WORKFORCE

U.S. DEPARTMENT OF ENERGY Office of ENERGY EFFICIENCY & RENEWABLE ENERGY



Examples of Lessons Learned and Impact – *United States*

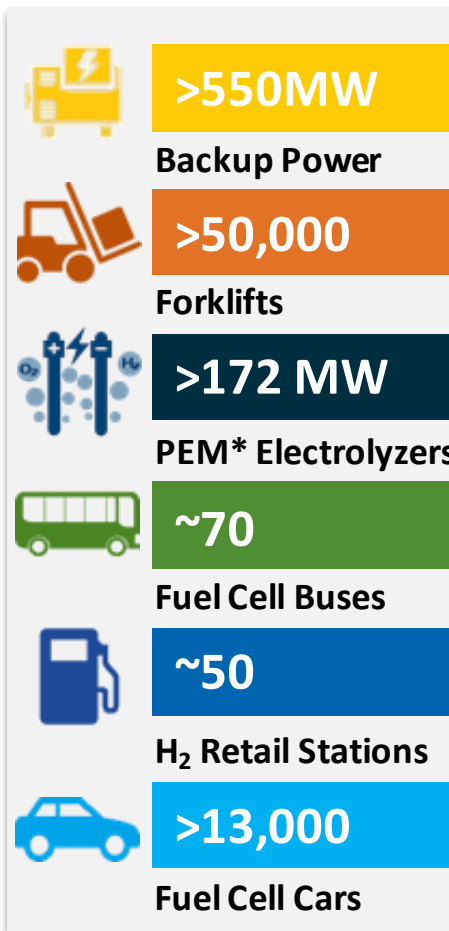


Program initiative, policy, regulation or mandate	Lessons Learned/Outcomes
<p>On November 15, 2021, President Joseph Biden signed into law the bipartisan Infrastructure Investment and Jobs Act (Bipartisan Infrastructure Law, BIL):</p> <ul style="list-style-type: none"> Includes funding for the US Department of Energy (DOE) to deliver a more equitable clean energy future. <ul style="list-style-type: none"> \$1 billion for a Clean Hydrogen Electrolysis Program \$500 million for Clean Hydrogen Manufacturing and Recycling Initiatives \$8 billion for Regional Clean Hydrogen Hubs Includes the development of a National Clean Hydrogen Strategy and Roadmap to facilitate widescale production, processing, delivery, storage, and use of clean hydrogen. 	<ul style="list-style-type: none"> In February 2022, DOE released two Requests for Information (RFIs), on hydrogen hubs and on clean hydrogen manufacturing and recycling research, and electrolysis R&D <ul style="list-style-type: none"> The information gathered from the RFI will inform development of hydrogen hubs and RD&D strategies on hydrogen-related manufacturing, recycling, and electrolysis programs Early stakeholder engagement is critical to make sure all voices are considered as DOE carries forward with BIL Hydrogen programs

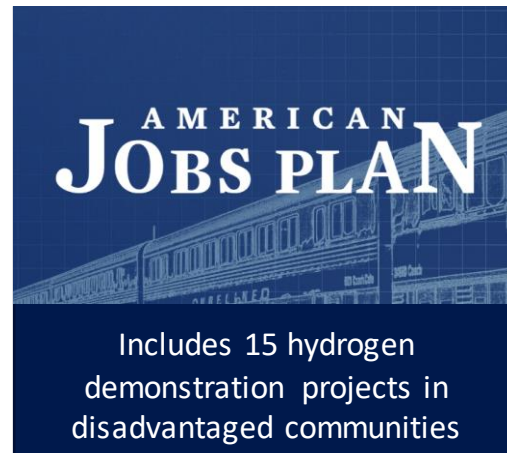


United States – Profile April 2022

Status of Deployments



Leading Government Initiatives



Justice40 Initiative

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

Diversity, Equity and Inclusion (DEI)

Goals or Focus Areas- Examples

<p>Clean Hydrogen</p> <p>\$1/kg production \$2/kg delivery \$9/kWh storage</p>	<p>Electrolyzers</p> <p>\$150/kW 73% efficiency 80K hrs durability</p>
<p>Fuel Cells (HD)</p> <p>\$80/kW 25K hrs durability</p>	<p>Enable EJ40 Priorities, DEI</p>

Deployment Goals

- 100% clean electricity grid by 2035
- Net-zero emissions by 2050



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

Funding

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

- \$1B for electrolysis RD&D
- \$500M for clean hydrogen technology manufacturing and recycling R&D
- \$8B for at least four regional clean hydrogen hubs



Thank you



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