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SENATE SELECT COMMITTEE ON HYDROGEN ENERGY SENATOR BOB ARCHULETA, CHAIRMAN



CALIFORNIA HYDROGEN HUB

California State Capitol
1021 O Street, Room 2100
Friday, March 25, 2022 10:00 a.m.

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- I. 10:00 AM - Welcome and Introductions**
 - Senator Bob Archuleta, Chair, Select Committee on Hydrogen Energy

 - II. 10:10 AM – Governor's Office of Business and Economic Development (GO-Biz)**
 - Tyson Eckerle, Deputy Director, ZEV Market Development
12 min.

 - III. 10:22 AM - University of California Office of the President**
 - Dr. Scott Brandt, Special Advisor for Research and Innovation
12 min.

 - IV. 10:34 AM – AltaSea**
 - California Hydrogen Hub
 - Terry Tamminen, Chief Executive Officer
12min.

 - V. 10:46 AM – Green Hydrogen Coalition**
 - HyDeal LA
 - Janice Lin, Founder and President
12 min.

 - VI. 10:58 AM – Northern California Power Agency**
 - Lodi Energy Center
 - Randy S. Howard, General Manager
12 min.

 - VII. 11:10 AM – Sempra Utilities**
 - Angeles Link
 - Neil Navin, Vice President Clean Energy Solutions, SoCalGas
12 min.

- VIII. 11:22 AM – Sunline Transit Agency**
 - Lauren Skiver, CEO/General Manager
12min.

- IX. 11:34 AM – California Hydrogen Coalition**
 - Teresa Cooke, Executive Director
12 min.

- X. 11:46 - Committee Members Q&A**

- XI. Public Testimony**

- XII. Close Out**

BACKGROUND

❖ What is a Hydrogen Hub?

The Infrastructure Investment and Jobs Act, commonly known as the Bipartisan Infrastructure Bill, includes \$9.5 billion for clean hydrogen programs.

Regional Clean Hydrogen Hubs provides \$8 billion to develop at least four large-scale hydrogen production and utilization projects across the country.

Clean Hydrogen Electrolysis Program provides \$1 billion for demonstration, commercialization, and deployment of electrolyzer systems.

Clean Hydrogen Manufacturing and Recycling provides \$500,000,000 to support a clean hydrogen domestic supply chain.

Clean Hydrogen Research and Development Program re-establishes and expands DOE's hydrogen office.

Clean Hydrogen Strategy and Roadmap directs the development of the first U.S. national strategy to facilitate a clean hydrogen economy.

Clean Hydrogen Production Qualifications directs the development of a clean hydrogen production carbon intensity standard.

❖ Regional Clean Hydrogen Hub Program

“a network of clean hydrogen producers, potential clean hydrogen consumers, and connective infrastructure located in close proximity” – H.R. 3684

Section 40314 of the Infrastructure Investment and Jobs Act (IIJA), H. R. 3684, provides \$8 billion for the development of at least four Regional Clean Hydrogen Hubs. Hubs will be selected based on the following criteria:

- **Feedstock diversity**: At least one hub will demonstrate the production of clean hydrogen from the following (i) fossil fuels, (ii) renewable energy, (iii) nuclear energy.
- **End-use diversity**: At least one hub will demonstrate end-use of clean hydrogen in the (i) electric power generation sector, (ii) industrial sector, (iii) residential and commercial heating sector, (iv) transportation sector.
- **Geographic diversity**: Hubs will be located in different regions of the country and shall use energy resources that are locally abundant.
- **Natural gas**: At least two hubs will be located in regions with the greatest reserves.

- **Employment**: Priority will be given to hubs that create opportunities for skilled labor and long-term employment.

- **Additional**: The Secretary may take into account additional criteria.

❖ **Regional Clean Hydrogen Hubs Requirements**

The Regional Clean Hydrogen Hubs program will demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen. The initiative includes requirements for feedstock diversity with at least one hub required to demonstrate production of hydrogen from fossil fuels, at least one hub for hydrogen from renewable energy, and at least one hub for hydrogen from nuclear energy. The initiative includes end-use diversity with at least one hub to demonstrate hydrogen use in power generation, at least one hub for hydrogen use in the industrial sector, at least one hub for hydrogen in heating, and at least one hub for hydrogen in transportation. Lastly, the initiative also includes geographic diversity requirements with at least two hubs designated to be in regions of the United States with the greatest natural gas resources.

❖ **Additional Hydrogen Policy Support**

Beyond these hydrogen-focused provisions, there are numerous other opportunities to engage hydrogen throughout the nation's energy and transportation systems.

- Congestion Mitigation and Air Quality Improvement
- Transportation Electrification
- Alternative Fuel Infrastructure
- Grid Infrastructure, Resiliency, and Reliability
- Department of Energy Loans
- Energy Storage
- Zero-Emission Ferries
- Zero-Emission Buses
- Port Infrastructure

❖ **Why California?**

Not only is California the nation's largest state by both population and economy (the 5th largest in the world), but California is also the leader in hydrogen, having already invested \$242 million to support hydrogen research, development, and deployment projects between 2008-2021. With a proven track record in the hydrogen space, California is uniquely positioned to develop a regional U.S. clean hydrogen hub and to position the U.S. as a global leader in clean hydrogen technology.