

H₂USA Update

Morry Markowitz
President & Executive Director
FCHEA

Signatories on the Letter of Understanding



U.S. Department of Energy



Air Liquide Industrial US



American Gas Association



American Honda Motor Company



Argonne National Laboratory



Association of Global Automakers



California Fuel Cell Partnership



Center for Hydrogen Research



Chrysler Group LLC



Electric Drive Transportation Association



Fuel Cell & Hydrogen Energy Association



General Motors Holding LLC



Hydrogenics Corporation



Hyundai Motor America



ITM Power



Massachusetts Hydrogen Coalition



Mercedes-Benz USA, LLC



National Renewable Energy Laboratory



Nissan North America R&D



Nuvera Fuel Cells



PDC Machines Inc.



Plug Power



Proton OnSite



Sandia National Laboratories



Savannah River National Laboratory



PNNL



SCRA



Toyota Motor North America



National Association of Convenience Stores



Linde North America



Update H2USA Signatories

- ▶ **Linde North America**
- ▶ **Pacific Northwest National Laboratory**
- ▶ **National Association of Convenience Stores**
- ▶ **PDC Machines**

H₂USA Organization Chart

**Steering Committees
(Executive / Operational)**

Secretariat
(Administered by FCHEA)

Hydrogen Fueling Station Working Group

- Specification, design, and deployment
- Fueling Resources
- Delivery
- Dispensing technology
- Reliability
- State and local Regulations
- Etc.

Market Support and Acceleration Working Group

- Product launch and timeline
- Studies and whitepapers
- Codes and standards (non-vehicle related)
- Component development
- Cost reduction
- Public education
 - First-responders
 - State and local authorities
 - Opinion leaders
- Etc.

Locations Roadmap Working Group

- Identify and prioritize markets
 - Market Modeling Methodology
 - Clustering, destinations and locations
- Regulatory barriers (zoning)
- Station rollout timing

**Working GRP
Coordinating
(Chairs and Vice
Chairs)**

Financing Infrastructure Working Group

- Private sector financing
- Government support
- Etc.

Working Group Activities

- ▶ **Market Support and Acceleration**
 - Developing an H2USA.org website
 - Developing messaging pieces for outreach efforts

- ▶ **Locations Roadmap**
 - Issuing automaker deployment survey through NREL secure data center
 - Data to be used for modeling for United States hydrogen station roadmap

Working Group Activities

▶ Hydrogen Fueling Station

- Station metric analysis
- Cost and utilization modeling analysis
- Hydrogen station component R&D analysis
- Regulations, codes, and standards

▶ Investment and Finance

- Hydrogen station funding opportunities RFI issued through DOE
- Developing fueling station business cases for investment community outreach

H2USA Timeline

▶ 2014

- SmartSheet Input Sharing – Target Q2
- Creation of Tool Box – Target Q2
- Key Elements for Business – Target Q2
 - Customer Demographics, State motivation, etc.
- Website / Outreach Material - Target Q2
- OEM Market Decisions Made – Target Q3
- State / Local Outreach – Target Q3 and Q4
- Fueling Capability in DC Metro Area – Target Q4
- Event with Secretary Moniz – Target Q?
- Situational Analysis – Target Q?

H2USA Steering Committee Timeline

▶ 2015

- Image of Vehicle Volume is Communicated

▶ 2020

- Multiple OEM's Deploying Vehicles
- Multiple States are Adopting FCEVs
- Multiple Markets/Clusters are Developed
- Multiple Investors are Funding Stations
- Profit Model is Sound for Station Developers
- Profit Model is Sound for Independent Station Owners

Thank You

Morry Markowitz
mmarkowitz@fchea.org