

Meeting Notes from the Hydrogen Infrastructure Grant Meeting on June 19, 2015

79 Elm Street Russell Hearing Room

10:00 AM

Attendees

The following individuals attended the meeting:

[List of Attendees](#)

Meeting Notes

Welcome and Introductions

Anne Gobin, Bureau Chief for the Bureau of Air Management in the Department of Energy and Environmental Protection presented the following presentation.

[Presentation \(June 19, 2015\)](#)

Public Comments

Air Liquide

Jonathon Bell, Greenberg Traurig on Behalf of Air Liquide

- Connecticut's leadership position is appreciated.
- Costs in early years will be substantial and assistance with operating costs or low rent options for use of state land would help economics.
- Grant should cover operation and maintenance in early years due to low vehicle numbers.
- Preference in the selection process should be given to experienced gas distribution companies.
- Preference in the selection process should be given to companies that have relationships with vehicle manufacturers.
- Preference should be given to proposals that include business models based on fleet operations.
- Streamlined permitting process or assistance with permitting would be helpful.
- Is there a preference for on-site hydrogen generation vs. off-site hydrogen generation with transportation?

University of Connecticut

Dr. Prabhakar Singh

- UConn is committed to assisting the state implement the zero emission vehicle (ZEV) policies/programs and is available to assist developers with technical input.
- UConn has infrastructure resources that may be helpful as part of a "lead by example" model.
- UConn has "reach" to federal and international resources to be able to take up the proposal.

ITM Power

Gary Higginbottom

- ITM appreciates Connecticut taking lead role in the Northeast.
- Integration of hydrogen for multiple uses including energy storage to support the grid or microgrids, industrial gas users, and for transportation would maximize the investment in the hydrogen generation equipment.
- Preference in the selection process should be given to proposals that utilize the hydrogen generation equipment as much as possible.
- Coordination with electric utilities would be good.

Toyota

Kevin Kinnaw

- Toyota is in favor of targeting fleets first for the introduction of fuel cell electric vehicles (FCEVs).
- Toyota is supportive of a coordinated (FCEV and hydrogen infrastructure) rollout that provides a favorable business case. This includes a fleet approach which helps increase the return on investment.
- Toyota is committed to bringing FCEVs to the Northeast US.

FuelCell Energy

Andrew Skok

- Program should encourage hydrogen refueling stations in all of Connecticut, not just focus on Hartford.
- Preference in the selection process should be given to in-state generation of hydrogen.
- Preference in the selection process should be given to cross-cutting technologies that can provide fuel for different uses.
- The program should acknowledge and agree to combine support from other programs, such as the microgrid program, Low Emission Renewable Energy Credit program, and other FCEV/hydrogen programs that could provide additional resources for project development.

New Haven Clean Cities Coalition

Lee Grannis

- Increase the fund to develop hydrogen refueling stations by adding Congestion Mitigation and Air Quality (CMAQ) funds from the DOT to the DEEP funds.
- Multiple pathways for hydrogen production are possible; preference in the selection process should be given to proposals that use renewable energy.
- The grant award should include provisions for training and education.
- DEEP should consider expanding the program to include Class 3 fleets for transit districts.
- Vehicles need to be branded and visible to help increase knowledge about hydrogen.

Proton OnSite

Robert Friedland

- Will DEEP provide information on the RFP?
- Hydrogen stations that can produce 200 kg of hydrogen will cost \$2M - \$3M each.
- Hydrogen stations will need 80-100 FCEVs/day to be cost effective.
- Hydrogen stations will need \$100K - \$125K/year for operating expenses.
- Consumers will need multiple refueling options.
- According to California projections the Northeast will have 2000 vehicles by 2020 which is not enough.
- 12 – 14 stations would be enough to blanket state by 2020 - 22. That could be an investment of only \$12-14 million over the next five to seven years.
- Preference should be given to hydrogen companies and not fuel cell companies because there are other funding mechanisms / programs to support fuel cell applications.
- Preference for station locations that are convenient to access.
- Avoid California problem of selecting lowest cost, which may not provide viable business case to succeed.
- DEEP should compare cost of EV charging infrastructure to cost of hydrogen refueling infrastructure on a miles travelled basis for equitable distribution of funds.
- Connecticut Fire Marshall is well informed about codes and standards for hydrogen refueling.

Nuvera

Paul Oei

- Concentration of vehicles and high volume sales would be important for cost effectiveness.
- Coordination of hydrogen fueling for material handling and transportation would be helpful.
- Assistance with permitting would be helpful.

US Hybrid

Daniel Orłowski

- Hydrogen stations need a “base load,” including automobiles, fork lifts, and small bus / shuttle bus fleets.
- Use of shuttle buses and transit district locations throughout the state would make sense for effective distribution of resources throughout the state.
- Para-transit buses (10 kg) use significantly less hydrogen to fill than traditional 40-ft buses (40kg), which would make use of hydrogen at stations without using up all available hydrogen.