

Federal and State Initiatives Panel Discussion

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Brief Synopsis of Presentation:

Jim Foster (NYSERDA): NYSERDA R&D Activities

The New York State Energy Research and Development Authority (NYSERDA) is a public benefit corporation with goals of improving the efficiency, environmental and economic performance of energy use in New York state. NYSERDA does product development and testing and has had numerous successes, and has been involved in fuel cell technology since 1992. In fact, Plug Power, Inc. originated out of a NYSERDA R&D effort.

NYSERDA has been supporting an 80-unit demonstration of proton exchange membrane fuel cells since 1999, with the goals of deploying units at publicly-owned and accessible facilities across the state, verifying the clean, environmentally friendly nature and accelerating their wide scale commercialization. Several things have been learned during the course of this project:

- ◇ The water supply system on several units deployed during the initial stages of Phase III accidentally froze up when exposed to cold temperatures while not in operation. Some piping and, in one instance, a water pump required replacement. There was no damage to the stack. Measures have been taken to prevent future problems with the water supply system when the unit is exposed to sub-freezing temperatures.
- ◇ Fuel cell stacks displayed accelerated degradation because of off-gassing of materials in the enclosure. Relocating the air intake outside of the enclosure slowed the degradation.
- ◇ As expected, overall emissions from Plug Power's fuel cell systems are extremely low, however, hydrocarbons tend to spike during startup. Although this does not represent a significant issue, Plug Power is working to reduce this transient spike.
- ◇ Interconnection rules with the utilities continue to present challenges. NY state interconnection is pretty well understood, and the recognition of the Plug Power units as meeting the requirements of New York's Standard Interconnection Requirements (SIR) helps the process along but, in many cases, working with the utilities is still a difficult process.
- ◇ At the beginning of the program, it took 8-10 days to get the units from the point of unloading from the trailer to operation startup; by the end of the activity this time was down to 8 hours.