



The Fuel Cell State: Hydrogen and Fuel Cell Policies and Initiatives in the United States

Fuel Cell Seminar
October 18, 2007

**Jennifer Gangi
Program Director
Breakthrough Technologies
Institute/Fuel Cells 2000**



Fuel Cells 2000 / BTI

- U.S. nonprofit organization
- Established in 1993
- Promotes fuel cells from public interest perspective
- Leading non-aligned source of fuel cell information
- www.fuelcells.org





State Fuel Cell and Hydrogen Policy and Demonstration Database

Find Activity :: Fuel Cell States Web - Microsoft Internet Explorer

Address <http://www.fuelcells.org/dbs/>

State Fuel Cell and Hydrogen Policy and Demonstration Database


FUEL CELLS 2000
Brought to you by: www.fuelcells.org DOE Hydrogen Program

Oct. 25, 2006

Find Activities View

Activity Search:


Step 1. Select a State:



Instructions
Make a selection by clicking the state on the map (selected states will turn yellow).
You can select more than one state for a search.
To de-select a state, click the state a second time.
If you do not select any states, search will include all of the United States.

Find Activity :: Fuel Cell States Web - Microsoft Internet Explorer

Address <http://www.fuelcells.org/dbs/>



Select All

Step 2. I want to view information on:

Demonstrations Policies (to search for both, leave blank)

For

H2/FC Vehicles
 Stationary Fuel Cells/Power Generation
 H2 Fueling Stations

Search Clear

Advanced Search Options

Title:

Project:

Total Power:

Fuel Source:

Fuel Cell Type:

Fuel Cell Manufacturer:

Text Search:

Search Clear



State Fuel Cell and Hydrogen Policy and Demonstration Database

Includes:

- All state policy - incentives, tax credits, grants, RPS, interconnection standards, initiatives, roadmaps, partnerships
- Stationary fuel cell installations
- Hydrogen fueling stations
- Vehicle demonstrations
- Searchable
- Continually updated as new information comes available or legislation passes

Available at www.fuelcells.org



Goals for Database

- Tool for government (all levels) and policymakers (If they can do it, so can we!)
- Guide to media, governments and state residents (Are there fuel cells where I live? What is my government doing?)
- Education for everyone



States Have it Going On

- 47 states plus D.C. have some activity in fuel cell/hydrogen arena
- Critical support for industry
- Financing demonstrations and innovation
- Addressing planning and installation requirements
- Educating decision makers & public
- Leading where federal government can't, hasn't, won't
- Provides economic as well as environmental benefits to state



The Fuel Cell State

States are vying to emerge as leader – there are several areas of competition

- Funding
- Research
- Academia
- Industry/Business Incubation
- Vehicle Demonstrations
- Stationary Installations



Honor Roll

- Research – Ohio, SC
- Vehicles/Infrastructure – CA (24 H2 stations, 13 planned for near future)
- Stationary Installations – NY (more than 50 installations, more than 136 fuel cells)
- Industry – CT (several major fuel cell manufacturers located there)
- Academia – CA (Irvine, Davis, etc.), SC (USC, Clemson, etc.), MI (Kettering)



Federal Government + States = Competitive U.S.

U.S = 1.2 billion over 5 years

Ohio = Third Frontier Fuel Cell Initiative: \$103 million for Ohio companies

California = \$6 million for the Hydrogen Highway program

Connecticut = Connecticut Clean Energy Fund –almost \$11 million in subsidies to help 11 installations (9 more in process)

South Carolina – Recently established Hydrogen Infrastructure Fund - \$15 million for grants



States are Moving Forward with Regulation

Facilitates installation of stationary fuel cells

- Interconnection Standards (16 states, 4 pending)
- Renewable Portfolio Standards (21 – 5 states recently passing RPS, even as federal government is balking)
- Net Metering (18 states and DC, pending in PA)



Easing the Financial Burden

- 12 states offer grants or loans for purchasing or demonstration of stationary fuel cells
- 13 states offer tax credits, exemptions or rebates
- Innovative incentives or tax exemptions – alternative energy patents (MA), anaerobic digestion incentive (MN)
- Most recent – CCEF (CT) provided \$3.5 million to Pepperidge Farm Bakery, NYPA providing funding for 22 telecom sites



Putting Cars on Road

- 15 states offer tax incentives for H2 and fuel cell vehicles, 6 states offer grants/loans
- 10 states and DC have fuel cell cars and/or buses on the road in testing and demonstration
- FedEx and UPS demonstrations
- Honda leasing two vehicles in CA to regular people
- GM to lease 100 vehicles in CA, NY and DC





Buses, Too

Recently on route in:

- Hartford, CT
- Orlando, FL (hydrogen ICE, not fuel cell)
- Arizona



Hartford, CT bus

Already on road in several
areas in CA



Filling Them Up

- 14 states and DC have H2 refueling stations (CA has 24)
- Recent openings in CA, IL and FL
- 3 states offer grants/loans for H2 infrastructure
- 5 states offer tax incentives for H2 infrastructure
- More planned!



Shell H2 station in DC



Fuel Cells = Good Business

- 27 states and D.C. provide business assistance (marketing, legal, etc.) to research parks/institutes, or offer grants/loans/tax incentives.
- 14 states have H₂/FC roadmaps, plans, reports or legislation – 3 more are developing.
- Great Plains Institute (Iowa, Manitoba, Minnesota, North and South Dakota and Wisconsin) recently published roadmap
- 8 other states and DC have alt. energy plans that include H₂.



Regional Partnerships

ARRC/H2 Alliance

FuelCell South

Hydrogen Energy Center

H2TEC

H2USA Centers

HyTEC

Mid-Atlantic Hydrogen Coalition

Northeast Hydrogen Alliance

Public Fuel Cell Alliance

Southern Fuel Cell Coalition

Upper Midwest Hydrogen Initiative

Gulf Coast Hydrogen Alliance

More sprouting up all the time!



The Fight Goes On...

- State activity is helping move the industry forward
- A lot more is going on than most might think
- Laying the ground work now helps later
- Use what has been accomplished as a guide for your state or region
- Network



Thank you

Fuel Cells 2000
1100 H Street, NW
Washington, DC 20005

www.fuelcells.org

jennifer@fuelcells.org