

# State and Federal Fuel Cell Policy

Hydrogen Fuel Cells:  
Technology and State Policy  
Webinar

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# Fuel Cells 2000 / BTI

- ◆ U.S. nonprofit organization
- ◆ Leading non-aligned source for fuel cell information since 1993
- ◆ Award-winning services
- ◆ Education through outreach/publications/website
- ◆ [www.fuelcells.org](http://www.fuelcells.org)
- ◆ [www.fuelcellinsider.org](http://www.fuelcellinsider.org)

# Federal ITC

Hydrogen Fueling Facility Credit	30% up to \$200,000
Investment Tax Credit for Fuel Cells	30% to \$3,000 /kW
Grants in Lieu of Tax Credits	Allows grants for businesses with insufficient tax liability
Fuel Cell Vehicles	\$4,000
Residential Energy Efficiency Credit	Up to \$1,000, or \$3,334 for multi-family

# Recovery Act Fuel Cell Projects

- ◆ ~ \$42 million (+\$51 million from industry)
- ◆ 12 Projects
- ◆ ~ 1,000 Fuel Cell Units
- ◆ Deploying forklifts, telecom units
- ◆ Big names – Sprint, AT&T, FedEx, Sysco, GENCO (Whole Foods, Wegmans, etc.)



# Other Federal Fuel Cell Activity

- ◆ DoD – many RD&D projects (UAVs, UGVs, portable soldier power), DLA forklifts (99)
- ◆ DoT – fuel cell buses
- ◆ FAA - deploying fuel cell backup units at 26 sites across FAA's three service centers.
- ◆ Recovery Act – aside from initial fuel cell awards, other funding to fuel cell projects in other awards

# At the State Level

- ◆ Critical support for industry
- ◆ Financing demonstrations and innovation
- ◆ Creating jobs
- ◆ Addressing planning and installation requirements
- ◆ Educating decision makers & public
- ◆ Leading where federal government can't, hasn't, won't

2009 Policy roundup -

<http://www.fuelcells.org/2009StatesH2FCWrapUp.pdf>

# 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](http://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

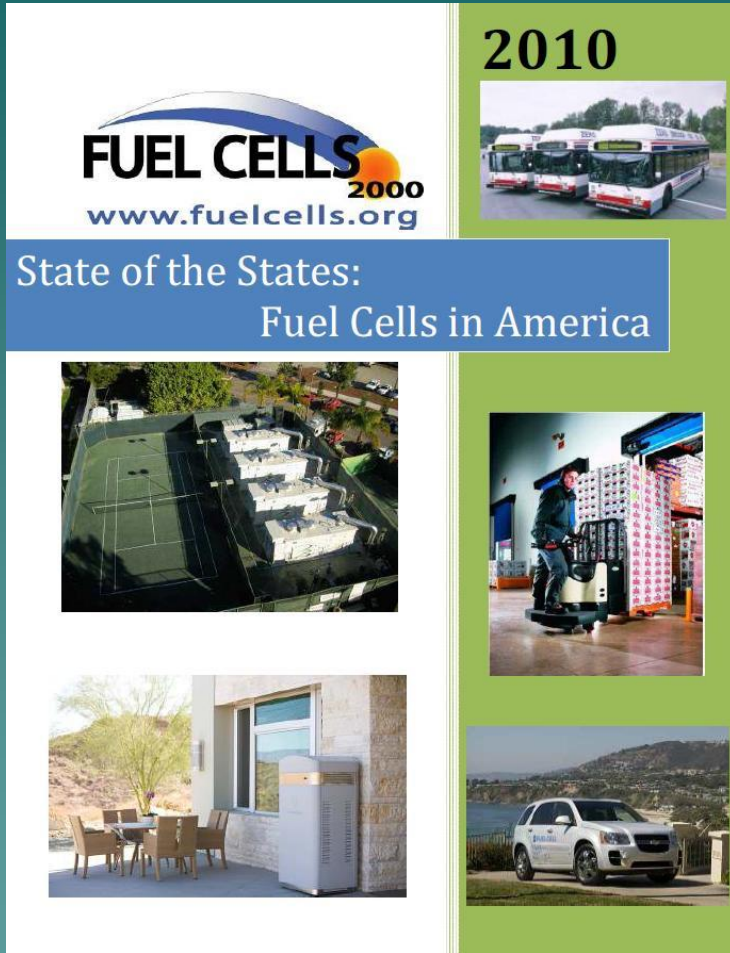
Searchable database includes:

- All state policy, incentives, tax credits, grants, RPS, interconnection standards, net metering
- Stationary fuel cell installations
- Hydrogen fueling stations
- Vehicle demonstrations (cars, buses, forklifts)
- Roadmaps, initiatives, state/regional groups

Available at [www.fuelcells.org](http://www.fuelcells.org)



# State of the States Report



- ◆ Released April 2010
- ◆ Summary profile of each state's activity
- ◆ Top 5 States – CA, CT, NY, OH, SC
- ◆ Led to ton of media coverage in those states
- ◆ More than 670 companies in U.S. involved in fuel cells. Way more if including total supply chain.

Download at: <http://www.fuelcells.org/statereport.html>

# Top 5 – Investment Paying Off

- ◆ Ohio's Third Frontier Fuel Cell Program has resulted in the creation or retention of 295 jobs with an average salary of \$61,651.
- ◆ The South Carolina Hydrogen and Fuel Cell Alliance reports 65% job growth in its hydrogen cluster since 2004 and a 10:1 return on its hydrogen investment.
- ◆ In Connecticut, which is home to several of the world's major fuel cell manufacturers, it is estimated that 240 jobs are created per MW of installed capacity, so annual production of 50 MW could yield around 7,500 – 8,000 jobs.

# Laying the Groundwork

- ◆ Renewable Portfolio Standards (RPS) – 22 states (also DC and Puerto Rico)
- ◆ Interconnection Standards – 32 states (also DC)
- ◆ Net Metering – 27 states (and also DC, Guam), some specify fuel cells using renewable fuel
- ◆ Hydrogen stations – California leading world, SunHydro east coast highway, SC, NY, many other states have one

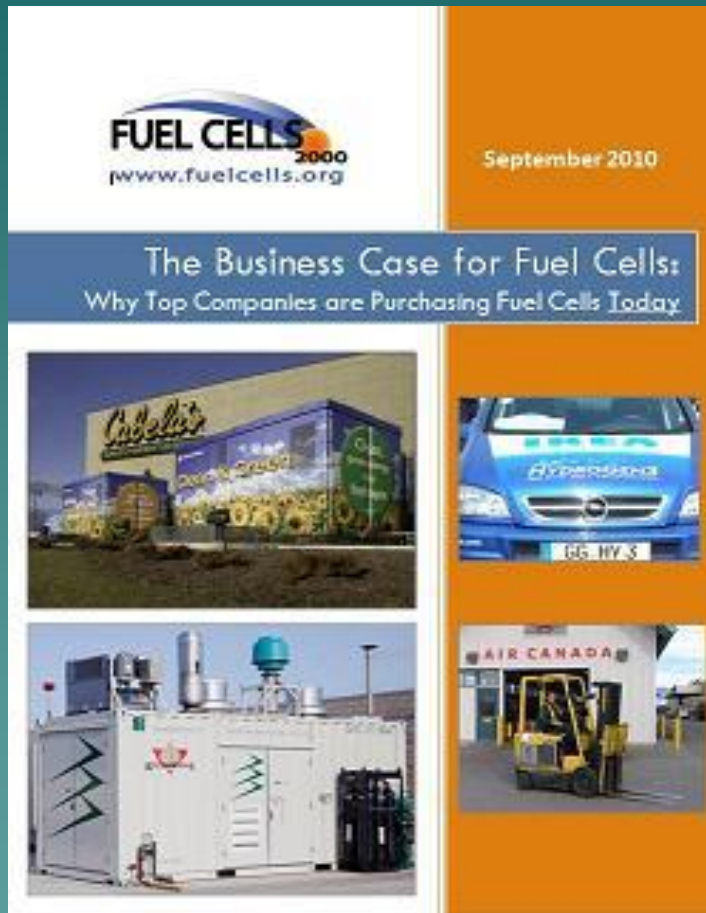
# State Shout-Outs - California

- ◆ **Self-Generation Incentive Program (SGIP)** - reimburses \$4,500/kW for biogas units and \$2,500 for natural gas. First MW is eligible for 100% of the incentive; the 2<sup>nd</sup> MW is eligible for 50% of the incentive; and 3<sup>rd</sup> MW is eligible for 25% of the incentive.
- ◆ SGIP assisted many installations – Gills Onions, Sierra Nevada, Westin San Francisco Airport, Chevron HQ
- ◆ **California Public Utilities Commission (CPUC)** - authorized 6 MW of fuel cell installations in 4/10
- ◆ **California Fuel Cell Partnership (CaFCP)**
- ◆ **California Stationary Fuel Cell Collaborative (CaSFCC)**
- ◆ **CARB** – AB 118 = \$ for hydrogen stations, Zero Emission Bus Rule, ZEV Mandate

# Other States Pushing Installations and Infrastructure

- ◆ OH: \$7 M in grants will be awarded 1/11, focused on supply chain, research, attracting industry to state
- ◆ SC: Cost-shared research program, demos, SCHFCA, Columbia Fuel Cell Challenge
- ◆ NY: NYSERDA, NYPA, \$21 million from Public Service Commission
- ◆ CT: CCEF helping fund installations
- ◆ MA: Private venture capital fund

# Business Case for Fuel Cells



Profiles 38 nationally-recognized companies, including Coca-Cola, Staples, Walmart, Whole Foods, Hilton Hotels, Sysco and many more!

Companies in report have ordered, installed or deployed:

- more than **1,000** fuel cell forklifts;
- **58** stationary fuel cell systems totaling almost 15 MW of power;
- more than **600** fuel cell units at telecom sites.

Download at

<http://www.fuelcells.org/BusinessCaseforFuelCells.pdf>

# Notable Results

- ◆ >\$2 million/year in electricity costs (6 companies, 4.2 MW)
- ◆ \$700,000/year in labor and insurance cost savings (3 companies)
- ◆ 43,122 tons of carbon emissions per year (20 companies)
- ◆ Nissan: 35 staff hours/day recharging forklift batteries allowing reassignment of 6-7 employees to other work.

# Thank you

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