



Northeast Electrochemical
energy storage
Cluster

Tools for NY Small Business Participation in the Hydrogen/Fuel Cell Industry

Dan Connors, NEESC Coordinator
Connecticut Center for Advanced Technology
www.neesc.org

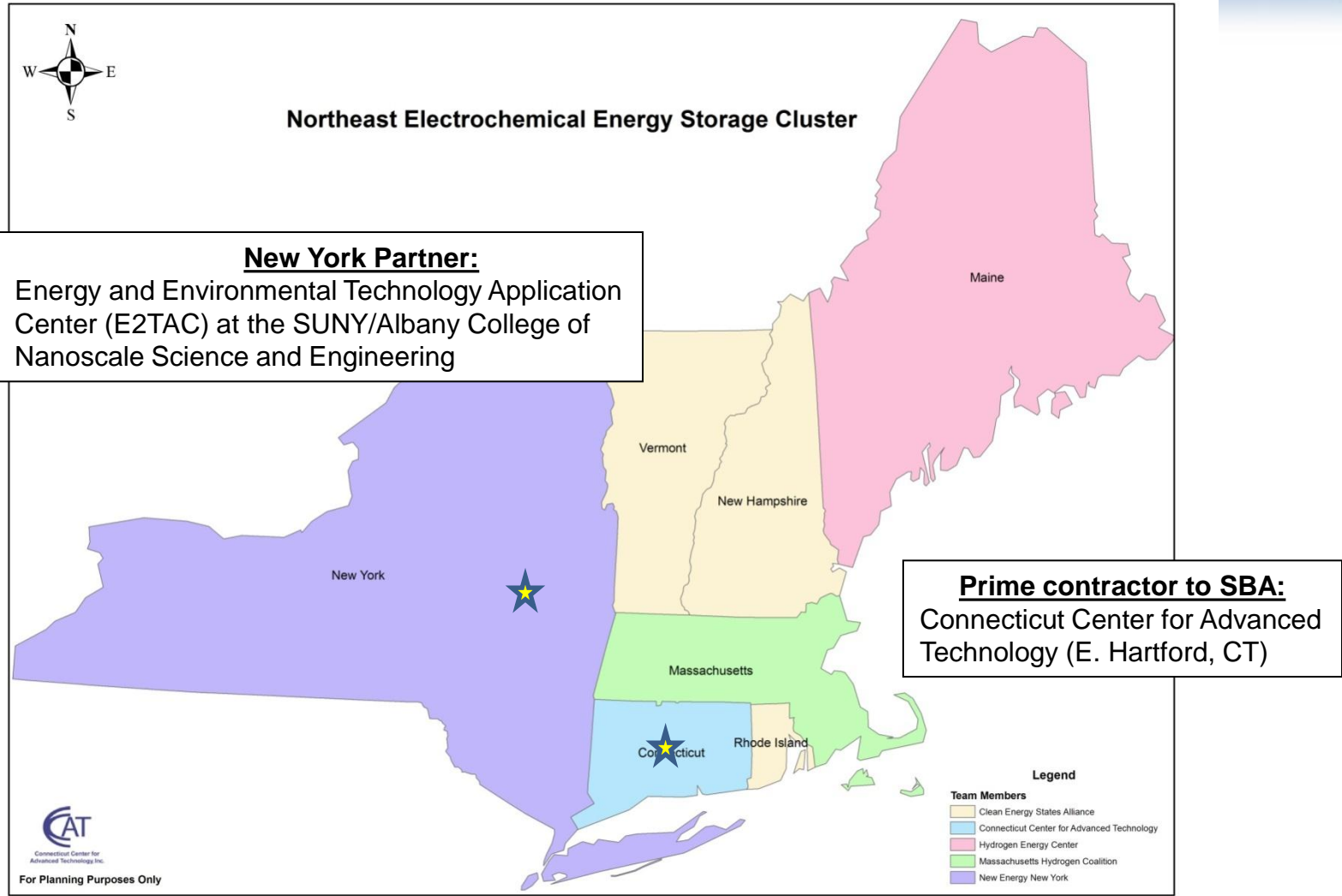
NEESC Background and Mission

The Northeast Electrochemical Energy Storage Cluster (www.neesc.org) is a network of industry, academic, government and non-profit organizations, focused on the development, production and commercialization of hydrogen and fuel cell technologies, providing domestic energy and environmental solutions to the US and the world.

The Cluster's formal organization is funded by the SBA's "Innovative Economies Initiative", to drive small business growth in this sector across the 7-state region spanned from New York to Maine.



NEESC – Regional Hydrogen/Fuel Cell Cluster



Why Hydrogen and Fuel Cells?

- Reduced emissions of greenhouse gases and primary air pollutants
- Provides an energy storage solution for integration with other renewable technologies.
- New generation capacity to meet projected electric consumption demands
- Growth of peak electric demand
- Increased energy efficiency required (oil cost/\$bbl)
- Renewable Portfolio Standards
- Provides economic benefits and jobs in the region

Hydrogen/Fuel Cell Industry Job Growth

- **Permanent**, technology/manufacturing jobs
- Growth of existing **domestic** supply chain
- Excellent opportunities for **export** revenue

NEESC Cluster Economic Value

- 25+ OEM level technology/system suppliers
- \$225 million/yr direct revenue
- ~2000 direct employees
- 1,000+ supply chain member organizations
- Est'd total labor (direct, indirect, induced) - ~4,000 jobs
- Est'd total revenue (direct, indirect, induced) - \$580 MM/yr

Preliminary results of March 2011 economic assessment

NEESC is a Small Business Based Cluster

- 90% of Cluster membership are Commercial organizations
- 96% of commercial organizations US Owned
- > 80% are Small Businesses
 - Employ < 100 people
 - Rev < \$25M/yr
- ~55% of the supply chain are manufacturing businesses

Preliminary results of March 2011 economic assessment

NEESC Tools For Cluster Small Businesses

- Identification and role of the OEM technology and system suppliers
- Online searchable databases:
 - Cluster Supply Chain, by major category, by state, key words, geographic radius search*
 - Business Incubators*
 - State stakeholder organizations (ex, NYSERDA, Greater LI Clean Cities, etc)
 - Biz, econ development resources (state SBIR offices, US Dept of Commerce, etc)
 - Workforce development training sources

* Available at www.neesc.org now

NEESC Tools For Cluster Small Businesses

- Guidance to government incentives, programs and funding opportunities
- Free guidance/mentoring to qualified early stage companies to enhance corporate investment
- Analytical tools to support stationary power and transportation hydrogen/fuel cell deployment
- Webinars and networking events
 - Next event is webinar, noon, May 9 “State of the European Hydrogen/Fuel Cell Industry”

NEESC Technology/Systems OEM's

NEESC Fuel Cell Suppliers		NEESC Hydrogen System Suppliers	
Stationary Power		Hydrogen Generation	
<ul style="list-style-type: none"> • Large (MW Class) • Med (10-400 kW) • Small (1-10 kW) 	<ul style="list-style-type: none"> FuelCell Energy FuelCell Energy, UTC Power, ZTEK Accumetrics, Infinity Fuel Cells, Nuvera Fuel Cells, Trenergi 	<ul style="list-style-type: none"> • Electrolysis • Reforming 	<ul style="list-style-type: none"> Avalence Giner Proton Energy Systems Treadwell Nuvera ZTEK Precision Combustion
Transportation/Motive Power		Hydrogen Purification/Compression	
<ul style="list-style-type: none"> • Light Duty Vehicles (Cars) • Buses/Trucks • APU's • Industrial (Forklifts) 	<ul style="list-style-type: none"> General Motors UTC Power Delphi, CellTech Nuvera, Plug Power 	<ul style="list-style-type: none"> • Electrochemical • Catalytic 	<ul style="list-style-type: none"> H2Pump Giner Sustainable Innovations Precision Combustion, Hy9
Portable Power		Car/Truck Hydrogen Fueling Systems	
<ul style="list-style-type: none"> • Military • Specialty Industrial • Consumer Electronics 	<ul style="list-style-type: none"> Accumetrics, CellTech, MTI Micro, Protonex Protonex Lilliputian, MTI Micro 	<ul style="list-style-type: none"> • Central H2 Mfg and Distribution • Distributed H2 Fueling Systems 	<ul style="list-style-type: none"> Praxair American Wind & Hydrogen, Avalence, SunHydro

Online Searchable Supply Chain Database



Search Type: Supplier

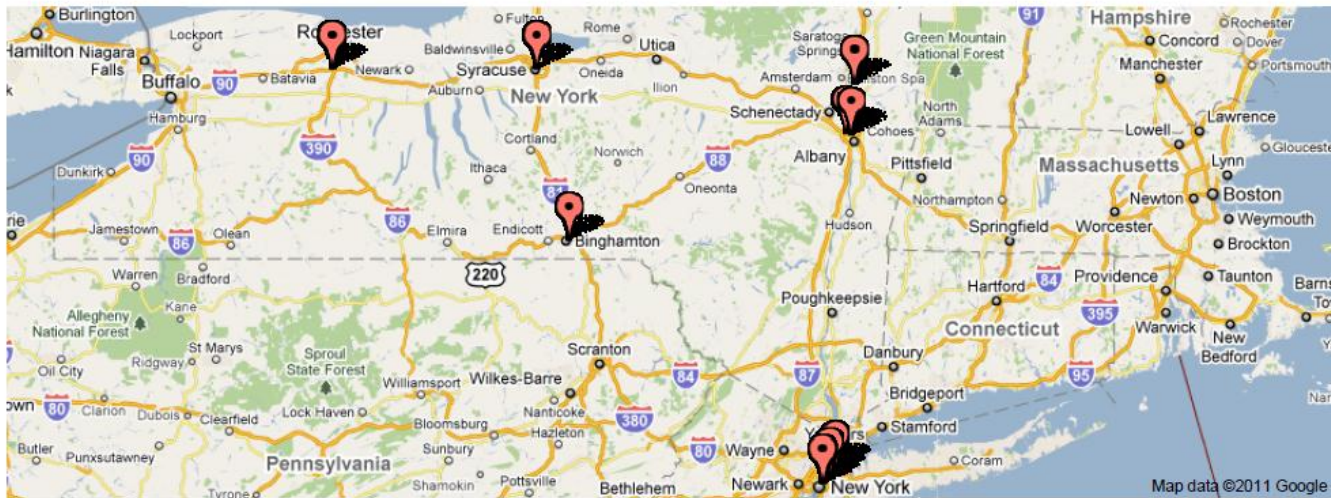
Product: Equipment

[Export to Excel](#)

Company Name	Address	City	State	Website	Phone Number
Electro Industries/GaugeTech	1800 Shames Drive	Westbury	NY	http://www.electroind.com/index.html	(516) 334-0870
Flow Safe Inc.	3865 Taylor Road	Orchard Park	NY	http://www.flowsafe.com/Home/tabid/36/Default.aspx	(716) 662-2585
Fluid Metering Inc.	5 Aerial Way	Syosset	NY	http://www.fmipump.com/index.html	(516) 922-6050
Global Equipment Company Inc. (Systemax Inc.)	11 Harbor Park Drive	Port Washington	NY	http://www.globalindustrial.com/	(516) 608-7000
IMR Test Labs	131 Woodsedge Drive	Lansing	NY	http://www.imrtest.com/	(607) 533-7000
Intertek	303 Normanskill Street	Albany	NY	http://www.intertek.com/	(888) 400-0084
KNF Clean Room Products Corporation	1800 Ocean Avenue	Ronkonkoma	NY	http://www.knfcorporation.com/	(631) 588-7000
Lee Spring Company	140 58th Street	Brooklyn	NY	http://www.leepring.com/index.asp	(888) 777-4647
Piller USA Inc.	45 Turner Drive	Middletown	NY	http://www.piller.com/default.asp	(800) 597-6937

http://www.neesc.org/resources/index.php?page=2&action=SEARCH&resource_switch=1&product=Equipment&key_word=&... 3/16/2011

Online Searchable Incubator Database



Search Type: Incubator

[Export to Excel](#)

Company Name	Address	City	State	Website	Phone Number
Adirondack Regional Business Incubator	36 Elm Street	Glens Falls	NY	www.arbi.biz	518.761.6007 ext. 306
Batavia Industrial Center (BIC)	56 Harvester Avenue	Batavia	NY	http://www.bic4biz.com/	585-343-2800
Business Resource Center	One Development Court	Kingston	NY	http://www.sunyulster.edu/continuing_ed/business_resource_center/index.jsp	845-339-1322
Cazenovia Business Center	132 1/2 Albany Street	Cazenovia	NY	http://www.ravenglass.com/cazenovia/html/chamber/bizcenter/index.htm	315-655-8814 ext.10
Center for Cleantech Entrepreneurship	235 Harrison Street	Syracuse	NY	http://www.thecleantechcenter.com/	315-579-0028
Center For Environmental Sciences And Technology Management Incubator	251 Fuller Road - CESTM B110	Albany	NY	http://www.nystar.state.ny.us/incubators/capital/cestm.htm	518.437.8686

http://www.nesc.org/resources/index.php?page=1&&action=SEARCH&resource_switch=2&state=NY&miles=&zip_code=

3/16/2011

*Dan Connors
NEESC Coordinator*

Email: dconnors@ccat.us

Web: www.neesc.org

*Connecticut Center for Advanced
Technology (CCAT)*

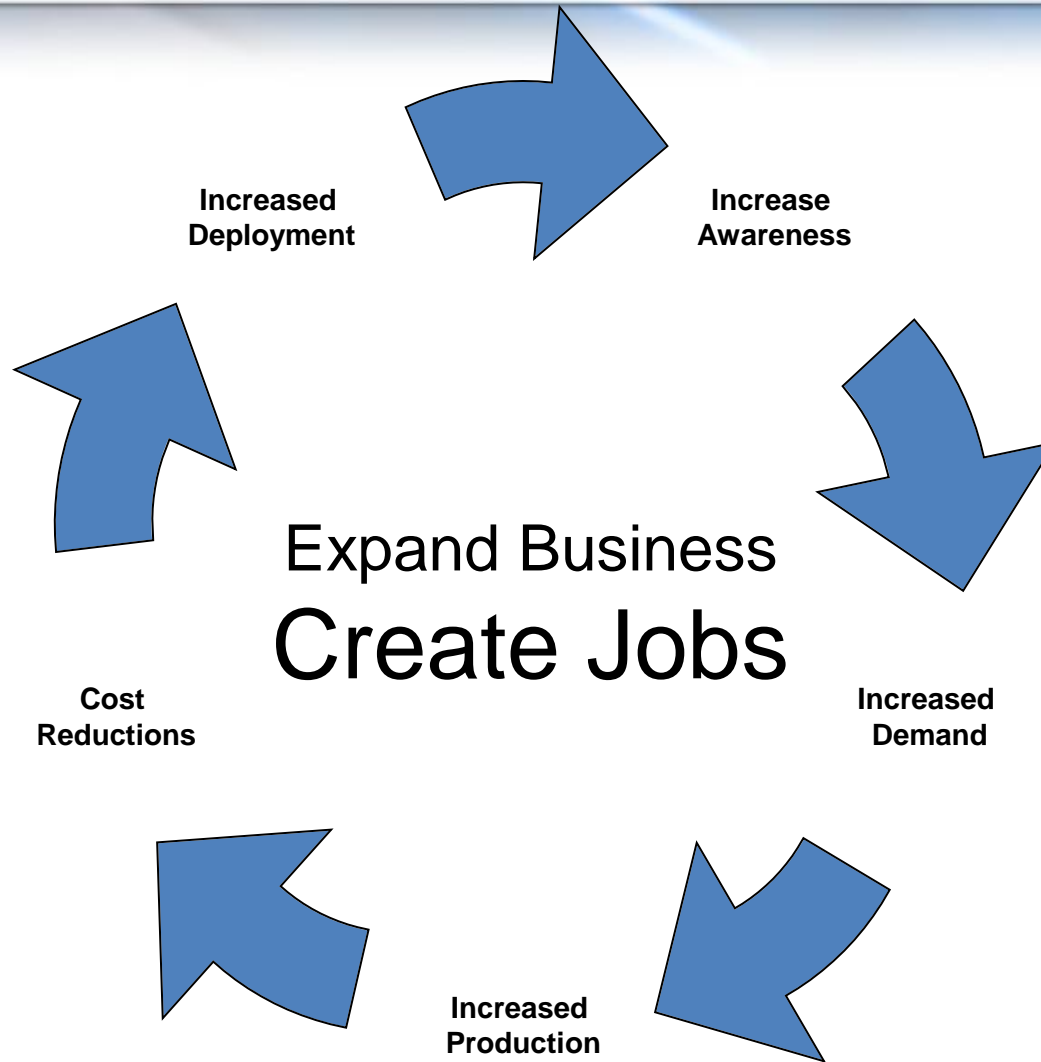
Acknowledgment

U.S. Small Business Administration



Your Small Business Resource

Market Pull



Electric Generation: Fuel Cell Power Facility

- Energy Efficiency (50% to 90%)
- High Availability Factor (24/7 \approx 93%)
- High Productivity (CHP and CHHP)
- Low Carbon Emissions



Hydrogen & Fuel Cell Transportation

- Zero Carbon Emissions
- Safe
- Efficient
 - Transit
 - 12.4 mpge
 - Passenger
 - 62 mpge



Chevy Equinox:



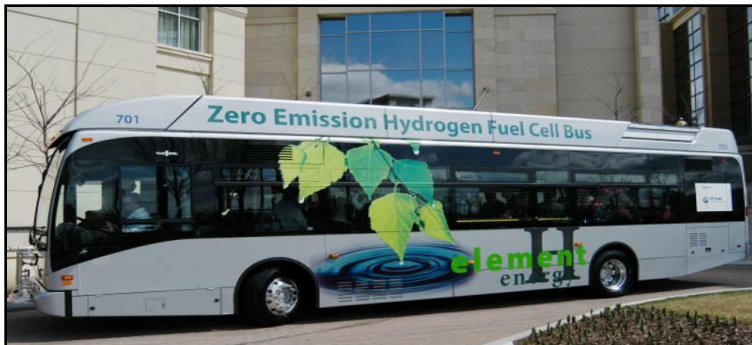
Kia Borrego



Mercedes B Class F-Cell



Toyota FCHV



Honda FCX Clarity



Nissan FCV

Hydrogen Refueling

- High Efficiency
- Fast Fill
- Safe
- Zero Carbon Emissions



Strategic Market Assessment

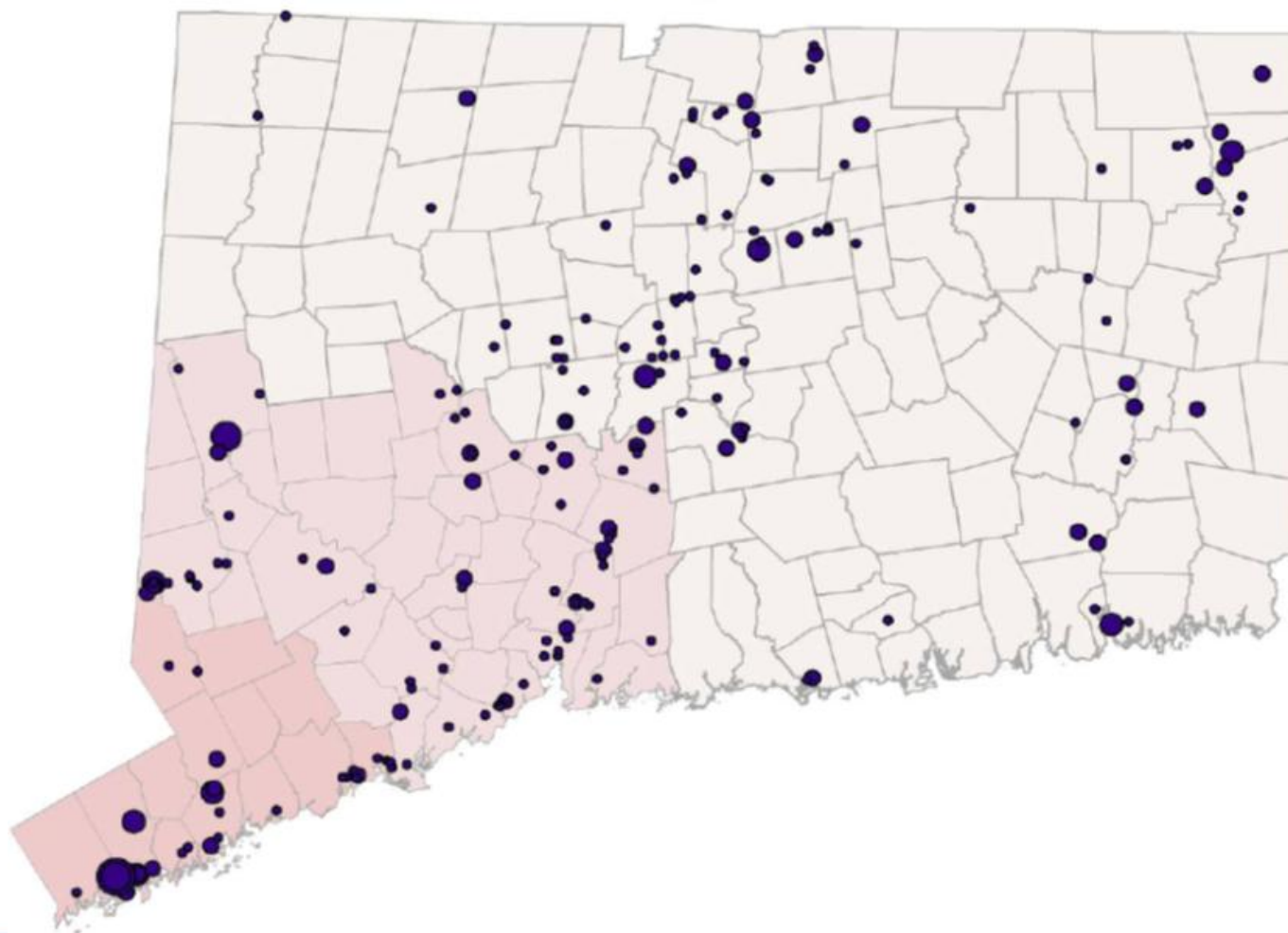
- Electric Generation
- Transportation
- Hydrogen Refueling



Mapping Strategic Targets

Potential Hydrogen and Fuel Cell Applications

Energy Intensive Industries



Legend

Energy Intensity

Million BTU

- 2943 - 250770
- 250771 - 961285
- 961286 - 2916000
- 2916001 - 8736500
- 8736501 - 80375600

CT Electrical Regions

- CT
- Norwalk-Stamford
- SWCT