H2L3: Hydrogen Learning for Local Leaders

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This presentation does not contain any proprietary, confidential, or otherwise restricted information

Overview

Timeline

- Start - October 2008
- Complete - December 2011
- Completion - 100%

Budget

- **Total project funding**
  - DOE share - $393,400
  - Contractor share - $70,992 (20%)
- **Funding for FY11**
  - $89,000
- **Funding for FY12**
  - $0

Barriers

Barriers addressed

A. Lack of readily available, objective and technically accurate information

B. Mixed messages

C. Disconnect between H2 information and dissemination networks

D. Lack of educated trainers and training opportunities

Partners

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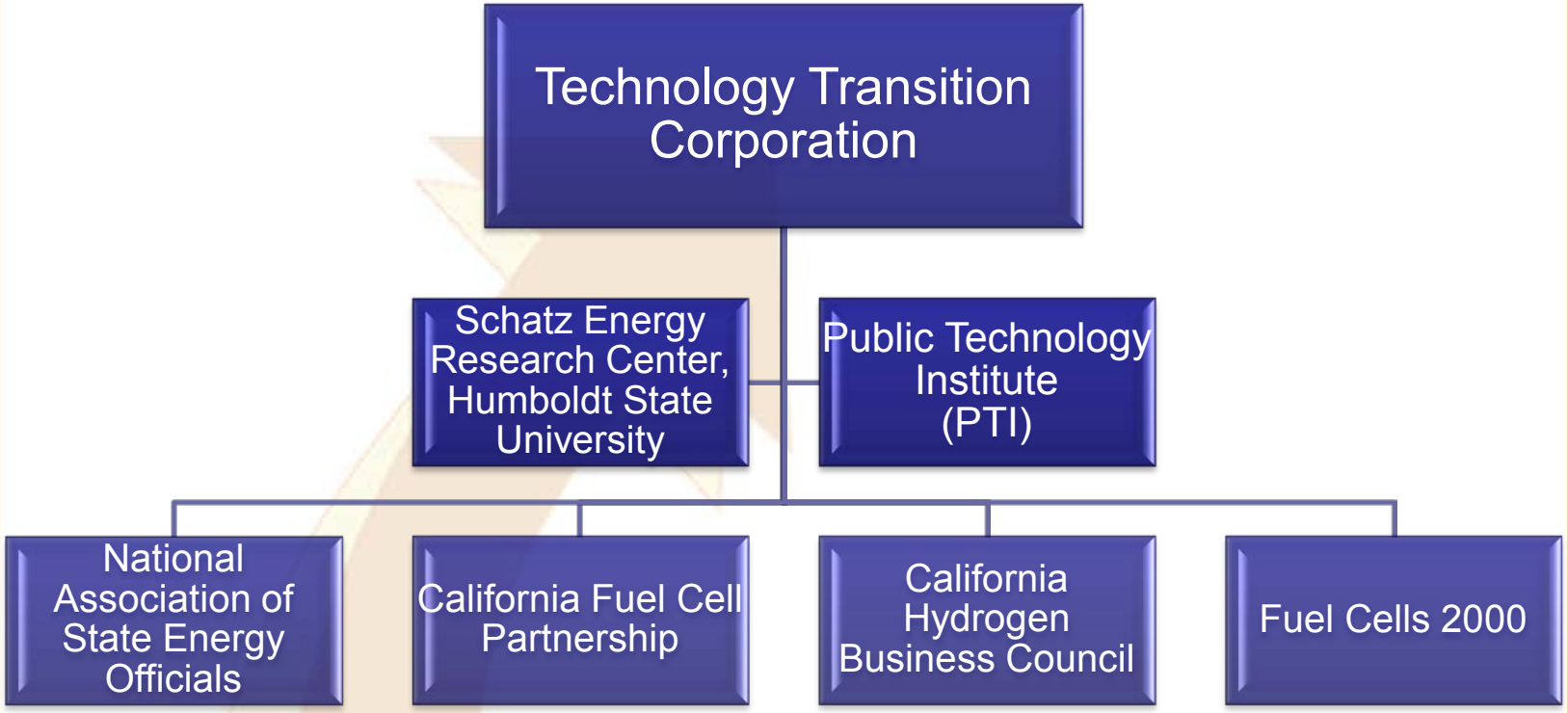
NASEO National Association of State Energy Officials

ENERGY'S WASHINGTON VOICE

pti Public Technology Institute

Schatz Energy Research Center SERC

H2L3 Partners/Collaborators

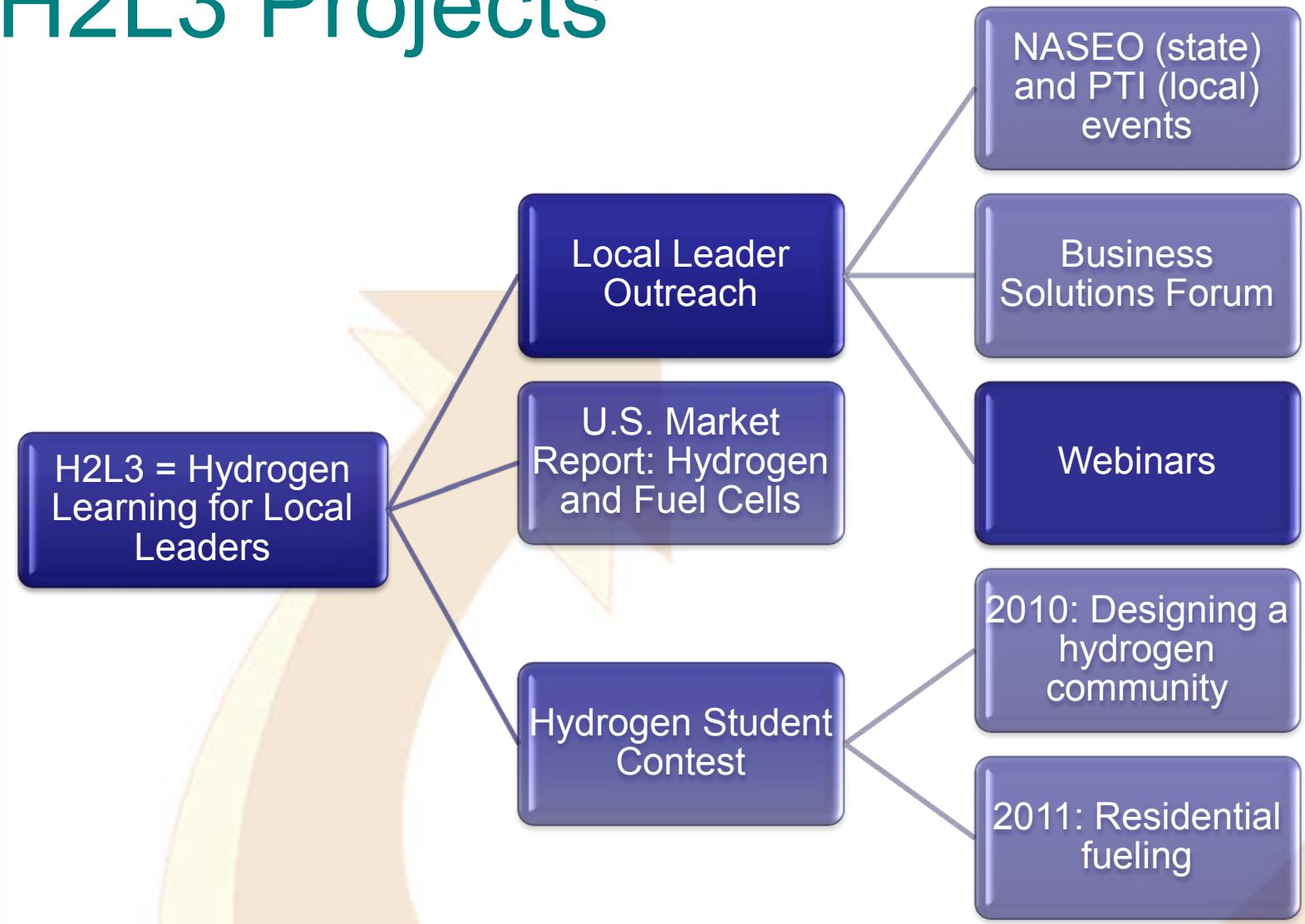


H2L3 Partners/Collaborators

- Schatz Energy Research Center, Humboldt State University
- Public Technology Institute (PTI)

  - National Association of State Energy Officials
  - California Fuel Cell Partnership
  - California Hydrogen Business Council
  - Fuel Cells 2000
  - Clean Energy States Alliance
  - Connecticut Center for Advanced Technology
  - Connecticut Hydrogen Fuel Cell Coalition
  - Fuel Cell and Hydrogen Energy Association
  - Hydrogen Education Foundation
  - American Biogas Council
  - Northeast Electrochemical Energy Storage Cluster
  - U.S. Department of Energy: Fuel Cell Program Office and EERE Communications Team

H2L3 Projects



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Relevance

Objective: Curriculum Development

- Tailored presentation materials for state and local government leaders…Relate hydrogen to THEIR interests and spheres of responsibility.
  - Addresses Barrier A *Lack of information resources*
  - Addresses Barrier B *Mixed messages*

Objective: Dissemination Path

- Establish pathways for working with national associations of state and local officials as route for disseminating information about hydrogen….Set pattern for on-going information flow.
  - Addresses Barrier C *Disconnect with dissemination networks*
  - Addresses Barrier D *Lack of trainers and opportunities*

Objective: National Venue

- Launch learning sessions by conducting initial workshops for local and state officials at national gatherings and online….Achieve nationwide reach
  - Addresses Barriers A,B,C and D

Approach

- Communicate with state & local officials by working with them, not talking “at” them
- Leverage existing materials (Schatz curriculum)
- Leverage distribution networks to reach more people (see chart of partners)
- Utilize events that local leaders already attend
- Allow the project to evolve as business has evolved
  - Original design was to utilize in-person events
  - Project has evolved to utilize online tools like webinars due to restricted travel abilities of the target audience
- Utilize local leaders as speakers: Peer to Peer communication
- Favor customers as speakers over industry reps
- Utilize industry reps for Q&A

Accomplishments: Previous

- Hydrogen 101 Curriculum based on Schatz work and telling stories
- Advisory Committee (test audience to critique curriculum)
- Events (reaching :
  - National Association of State Energy Officials Annual Meeting
  - Public Technology Institute: “The Opportunities Hydrogen Offers Your Community”
  - National Council of State Legislators “Hydrogen Fuel Cells: State Policy and Technology” Webinar
  - PTI Local Government Energy Assurance Workshop (Photo)
  - Mike Honig radio show, CNN, “Basics of hydrogen and fuel cells”
  - Business Solutions Forum: For existing and potential customers of hydrogen and fuel cell technologies
  - Green Energy Leaders Webinar & Networking
- Survey participants for feedback and leads for peer presenters

Accomplishments: Previous

- Over 100 individually identified, 700+ counted and several thousand reached so far (radio and online).
- Actual quotes from local leaders
  - "Very understandable"
  - "For the first time, I understood what hydrogen is."
  - "Personally, I'm not that interested in this [topic] but y boss needed me to learn about it and now I won't be totally lost."
  - "This was really good."
  - "Really informative."
  - "Showing the number of fueling stations made it real. I thought hydrogen was more of an impossibility before."
  - "Great job! I thought the [radio] show was informative and definitely not the typical talk radio format that we tend to get."

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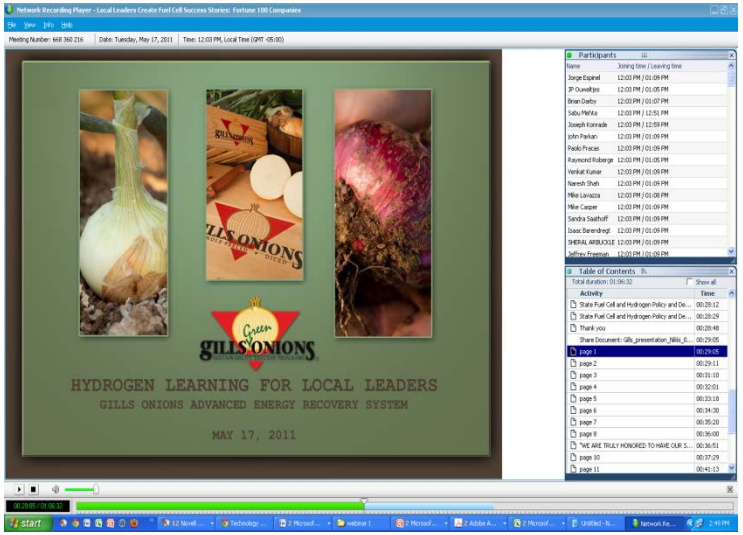
Accomplishments: New

Webinar #1 of 5 - May 17, 2011

Local Leaders Create Fuel Cell Success Stories: Spotlight on Leading Local Companies



- Average rating: 3.47
- 364 registrants
- 276 attendees
- 45 local leaders

Speakers:
•Ronda Mosley - Public Technology Institute (moderator)
•Josh Lieberman – Technology Transition Corporation
•Sandra Curtin - Breakthrough Technologies Institute
•Nikki Rodoni - Sustainability Director, Gills Onions
•Kevin Hartigan - Hartigan/Foley
•Steve Gill - Co-owner, Gills Onions

What Attendees Said:

"This was a helpful introduction to the technology and its applications."

"Fuel cell technology developers are moving along, despite the greatly constricted research funding! That there are several commercial FC products on the market (non transportation applications)"

Watch Now:
http://www.ttcorp.com/webinars.asp

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Accomplishments: New

Webinar #2 of 5 – June 21, 2011

Top 5 Fuel Cell States: Why Local Policies Mean Green Growth

- Average rating: 3.66
- 415 registrants
- 361 attendees
- 49 local leaders

Speakers:
•Patrick Serfass– Technology Transition Corporation
•Pat Valente - Executive Director, Ohio Fuel Cell Coalition
•Jennifer Gangi - Program Director, Fuel Cells 2000
•Julia Donoho - Major Project Architect, County of Sonoma, CA

What Attendees Said:

" I was most impressed with the variety and volume of fuel cell activities in the United States … Keep up the good work.“

"(You provided a) useful background on current projects and business models for financing hydrogen projects.“

"(I learned about the) depth of activity in various states and the players involved. Excellent webinar."

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http://www.ttcorp.com/webinars.asp

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Accomplishments: New

Webinar #3 of 5 – July 19, 2011

Where the Jobs Are: Hydrogen and Fuel Cells in Your Area

- Average rating: 3.41
- 321 registrants
- 207 attendees
- 50 local leaders

Speakers:
•Ronda Mosley - Public Technology Institute (moderator)
•Shannon Baxter-Clemmons - South Carolina Hydrogen and Fuel Cell Alliance
•Marianne Mintz - Argonne National Laboratory
•Rachel Lipsey - Office of Rep. Paul D. Tonko (NY-21)
•Patrick Serfass - Technology Transition Corporation

What Attendees Said:
"The information on the jobs measuring tool was particularly helpful. Also, the presentations from Shannon and Rachel were well done and provided additional details in the area of implementation of partnerships that was helpful.

"There is a greater effort in the fuel cell industry than I was aware. There are many future jobs associated (with this presentation)."

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Accomplishments: New

Webinar #4 of 5 – August 16, 2011

Go Local: Maximizing Your Local Renewable Resources With Fuel Cells

- Average rating: 3.78
- 639 registrants
- 340 attendees
- 58 local leaders

Speakers:
•Ronda Mosley - Public Technology Institute (moderator)
•Lewis Nelson - City of Tulare
•Chris Peeples - AC Transit
•Amy Bolten - County Water Agency

What Attendees Said:

"Good to hear some real world case studies, and hear the types of questions interested parties are asking."

"Excellent information regarding the Tulare waste water treatment project, and all of the relevant particulars."

"Great to hear from municipalities with working systems...it provides information that has great depth from experience behind it."

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http://www.ttcorp.com/webinars.asp

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Accomplishments: New

Webinar #5 of 5 – December 7, 2011

Fuel Cells and Telecom: Reports from the Field

Hydrogen Learning for Local Leaders Webinar Series, #5 of 5
Fuel Cells and Telecom
Reports from the Field

- Average rating: 3.55
- 584 registrants
- 381 attendees
- 35 local leaders

Speakers:
•Ronda Mosley - Public Technology Institute (moderator)
•James Kerr - IdaTech
•Joe Blanchard - ReliOn, Inc.
•Thomas Browning - MetroPCS

What Attendees Said:

"The presentations and the Q&A were very helpful in providing an overview of this market."

"(I appreciated the) higher level of granularity than after talks at conferences because of amount of time left for Q&A."

"Great information about the telecom sites. I work with industrial trucks and this webinar gave me several ideas for further leveraging the telecom success to (those) applications."

Watch Now:
http://www.ttcorp.com/webinars.asp

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Accomplishments: New

Webinars

- 5 events
- 2,323 registrants/ 1,565 attendees
- 237 local leaders
- Feedback: High survey response rate (avg: 3.6/4.0) with data and quotes
- Lower cost

In-person Workshops

- 7 events
- 700 attendees
- 100 local leaders
- Feedback: low response rate, some data
- Personal connection

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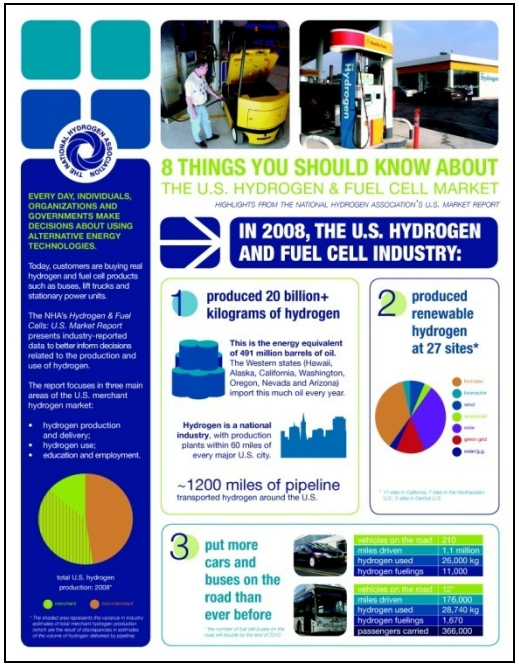
U.S. Market Report: Previous

- Completed aggressive schedule of research covering 57 different sectors of the hydrogen and fuel cell industries.
- Peer reviewed, endorsed by NHA, Published
- ***Lot of great data. I had no idea that there are so many renewable projects.*** - Sandy Thomas, former President, H2Gen Innovations
- *I've started teaching the **graduate course at Wayne State University** in alternative energy, and **I plan to share this report with my class, as well as working it into my thinking about price and market position.*** - Robert Buxbaum, President, REB Research & Consulting
- *A really good report. I think the front sections will make a great reference tool on the hydrogen industry generally and **I already learned a few things!*** - Lisa Callaghan-Jerram, Fuel Cell Today
- ***Love the 8-point brief**. Succinct and direct. Thanks for drawing our attention to it*. - Tom Sperrey, CEO, UPS Systems plc, **via LinkedIn**
- ***The brief version is my kind of report**! The full version looks very useful; many thanks for sharing the link*. - Graham Cooley, CEO, ITM Power Plc, **via LinkedIn**
- **Downloaded over 70,000 times!** http://www.ttcorp.com/marketReport/fullReport.pdf



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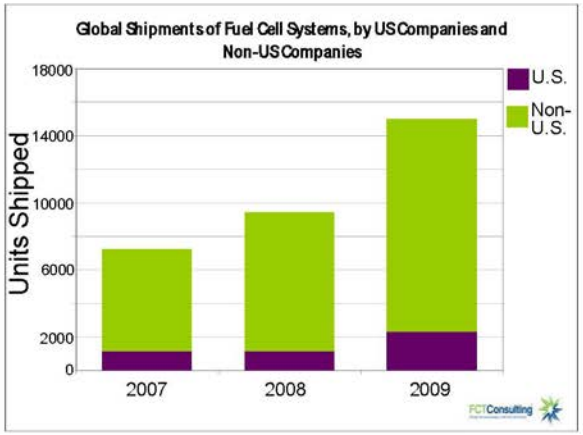
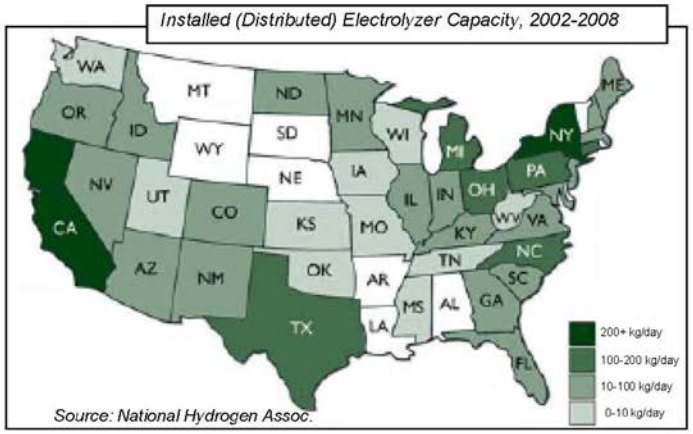
Data Use by DOE: Previous

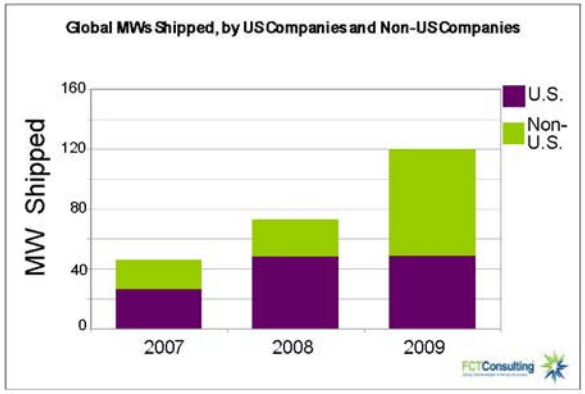
State of the Industry:
Growing Markets and Capacity

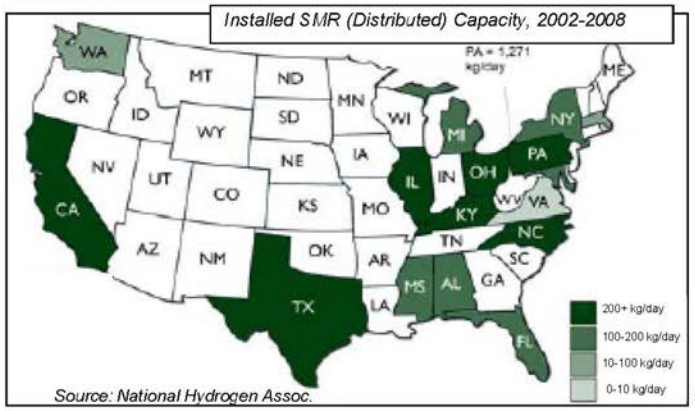
U.S. DEPARTMENT OF ENERGY

The hydrogen and fuel cell industry is growing steadily, serving key near-term markets.









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2010 Hydrogen Student Design Contest

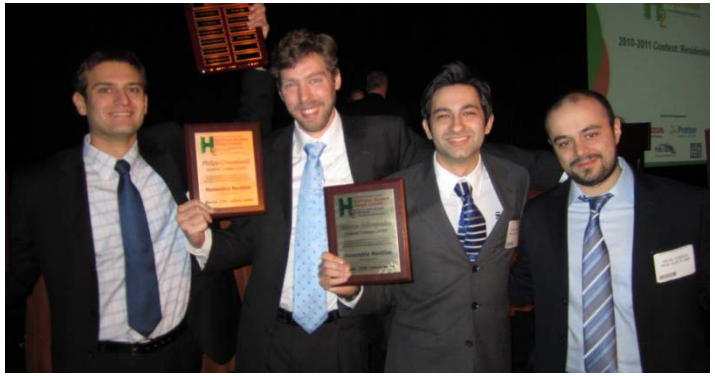
Designing a Hydrogen Community

- Theme: design a hydrogen community in Santa Monica, CA.
  - fueling station
  - renewable hydrogen sources
  - customers for early markets
- 32 schools
- 4 countries: United States, Canada, Bangladesh, Ukraine
- Grand Prize: Missouri University of Science and Technology
- HM: University of Waterloo and the National University of Kyiv (Ukraine)
- www.HydrogenContest.org

2011 Hydrogen Student Design Contest

Residential Fueling with Hydrogen

- 54 registered universities (a new record)
- 19 countries
- 7 of top 20 engineering schools in the world
- Grand Prize: University of Waterloo (5-time winner)
- Honorable Mentions: Imperial College London, University of California Riverside
- 89% of survey respondents say they would participate in the Contest again
  - Other 11% would consider, depending on theme



2011 Sponsors and Supporters

FUEL CELL & HYDROGEN ENERGY
FEB. 13-16 2011 • WASH, DC AREA
Formerly the NHA Hydrogen Conference and Expo

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Proton ENERGY SYSTEMS
The Leader in On-site Hydrogen Generation

PRAXAIR

HONDA
The Power of Dreams

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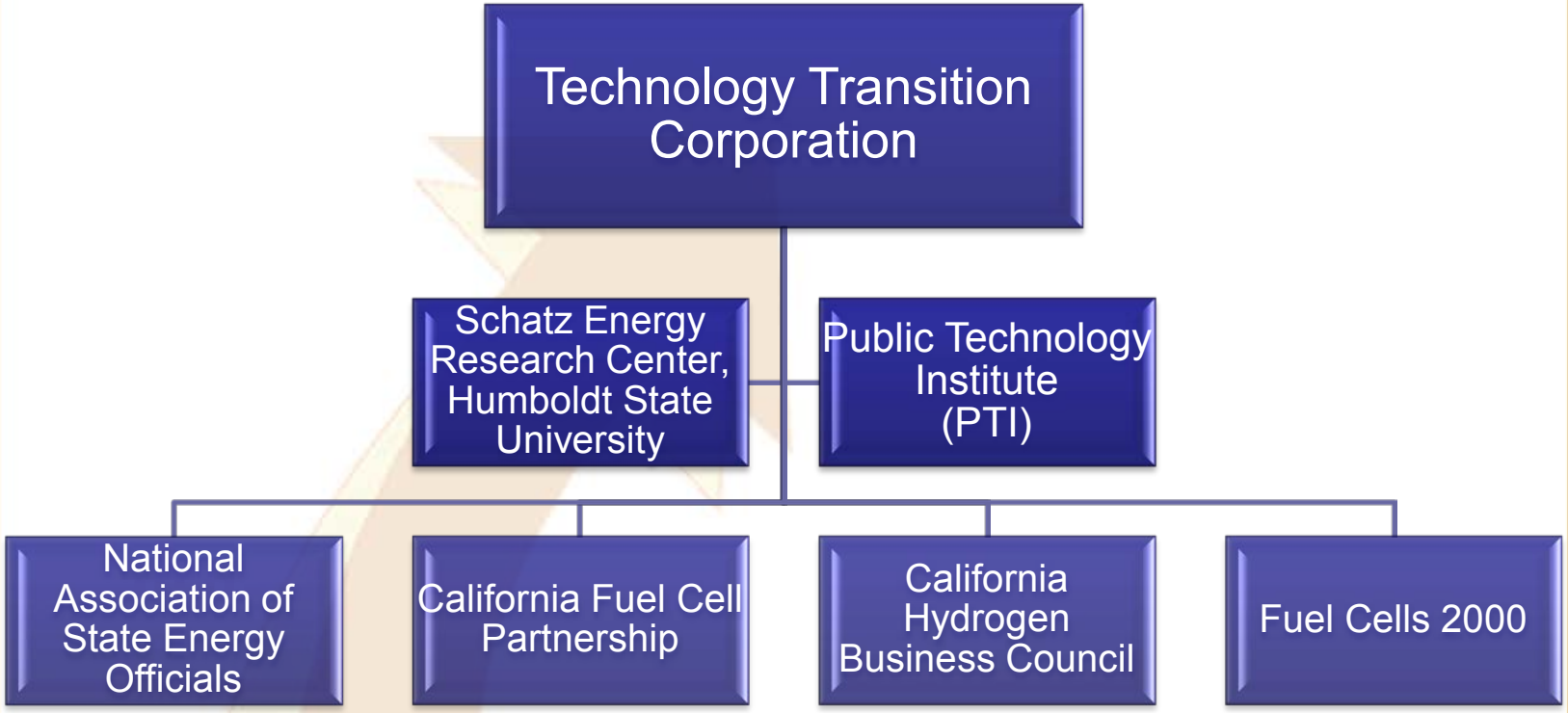

Future Work

FY ??

- We have:
  - A successful model that's scalable and highly rated by our audiences
  - Tons of data showing the occurrence real learning and feedback
  - An audience who needs to be further educated and is hungry for more events
  - No more funding
- We look forward to continuing this project with anyone who would like to contribute funding to do so

Summary

- Local Leaders goal surpassed (500)
  - Educated 700 local leaders in person
  - Educated 237 local leaders through webinars
- Overall education goal surpassed (1,000)
  - Educated an additional 3,061 participants plus thousands more through radio
- U.S. Market Report
  - Most downloaded report on NHA site: 70,000+
  - Data used by DOE
- Design Contest: most schools ever registered
  - 57 from 19 countries and 5 continents
  - Two year total: 86 schools/approx/ 900 students

Thank you!

Contact

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