

H2L3: Hydrogen Learning for Local Leaders



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Technology Transition
Corporation
May 10, 2011

ED014

Overview

Timeline

- Start - September 2008
- Complete - September 2011
- Completion - 82%

Budget

- Total project funding
 - DOE share - \$393,400
 - Contractor share - \$81,999
- Funding for FY10
 - \$95,000

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



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NASEO National
Association

of State Energy Officials

ENERGY'S WASHINGTON VOICE

pti
Public Technology Institute

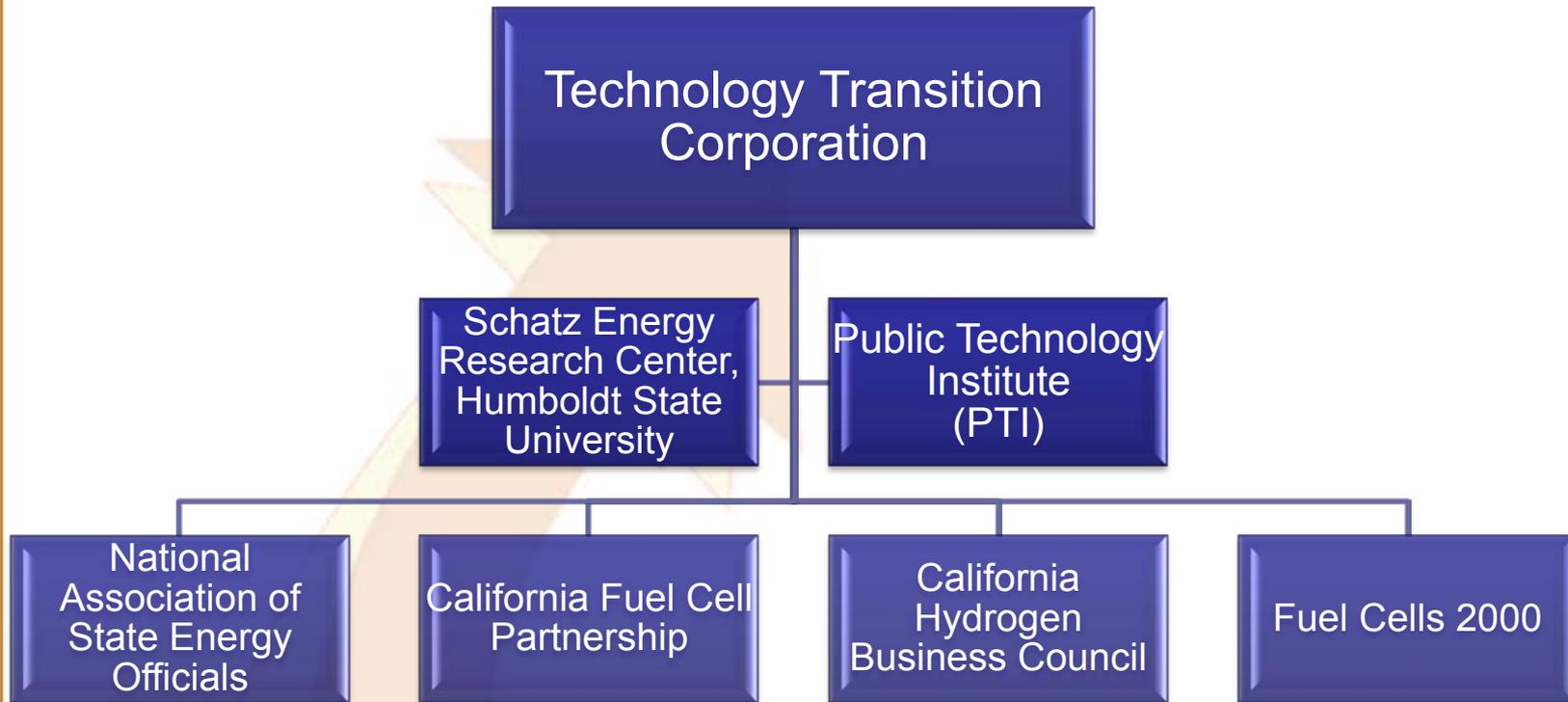


Schatz Energy Research Center

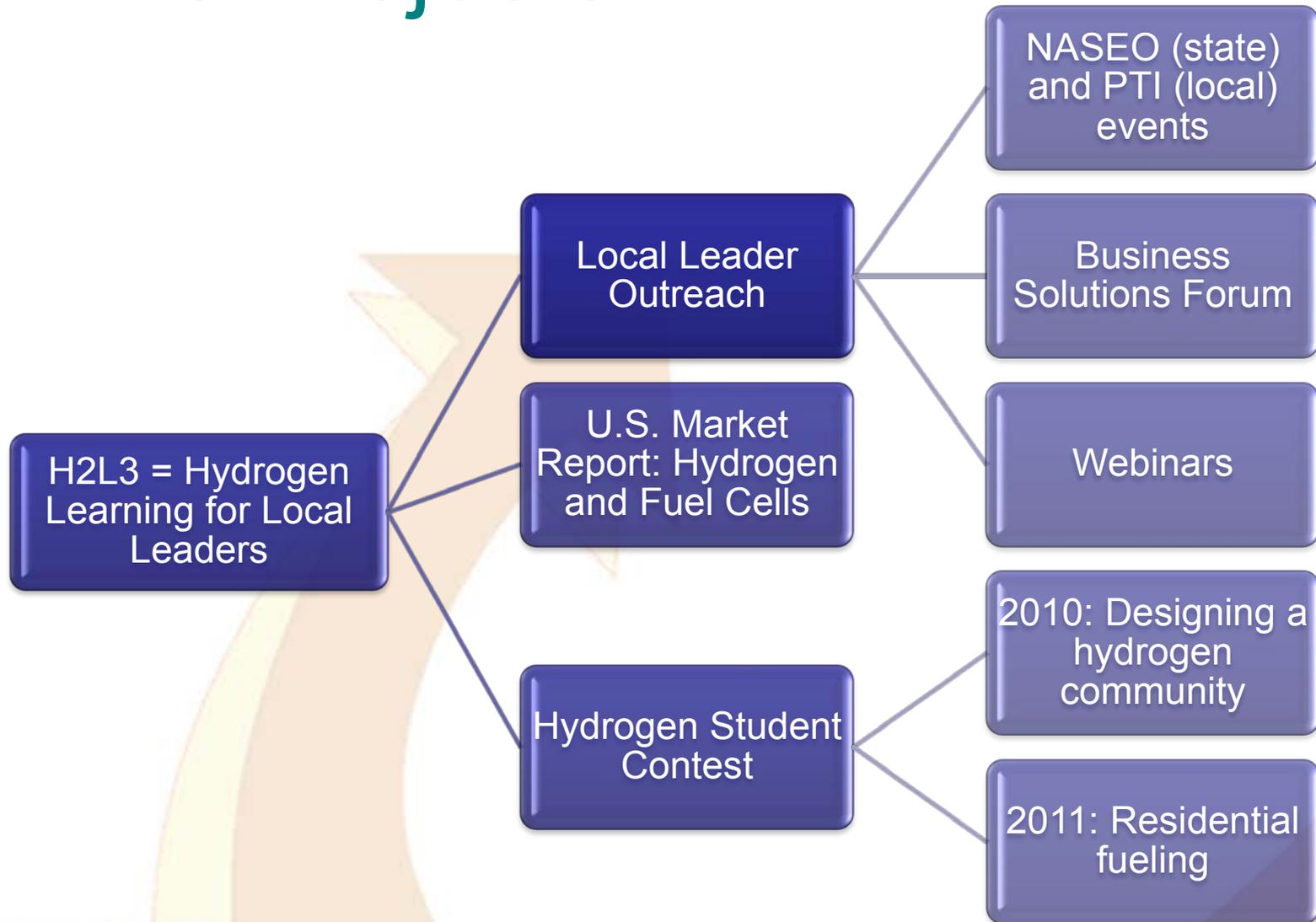
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H2L3 Partners/Collaborators



H2L3 Projects



Objectives - Relevance

Period Addressed: June 2010-March 2011

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)
- Reach “outside the choir” by using the 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

Accomplishments: Local Leaders

- 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: Local Leaders

- 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 my 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.”



Hydrogen Learning for Local Leaders

Monday, May 3, 2010

Hyatt Regency Long Beach

7:30am-9:00am

Coffee and networking at 7:30am, breakfast at 8:00am



You are invited to a private breakfast for Southern California local leaders, co-hosted by the California Fuel Cell Partnership and the US Department of Energy. Learn more about the role that fuel cells and hydrogen can play in your community.

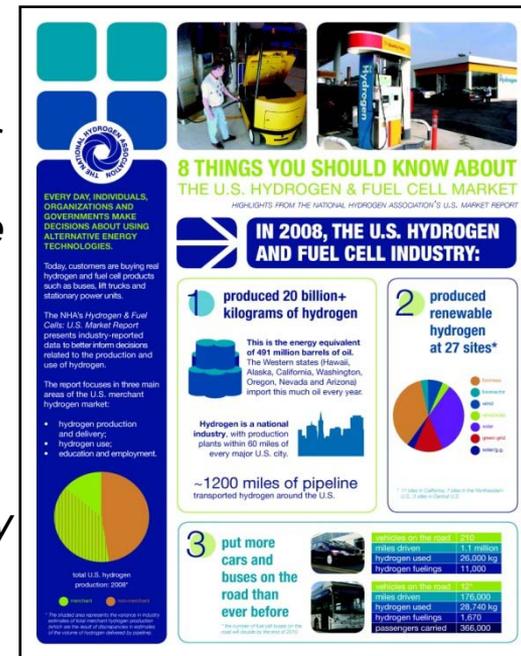
Please RSVP by April 30th to bcarranza@cafcp.org



For more information visit, www.cafcp.org/localbreakfast

U.S. Market Report

- 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>

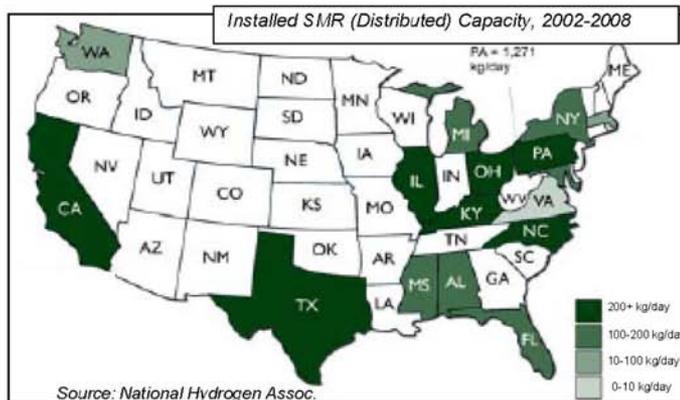
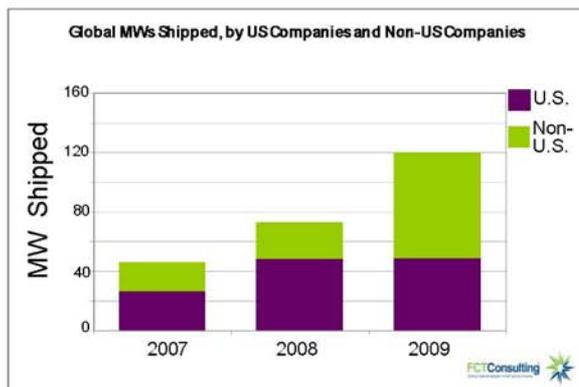
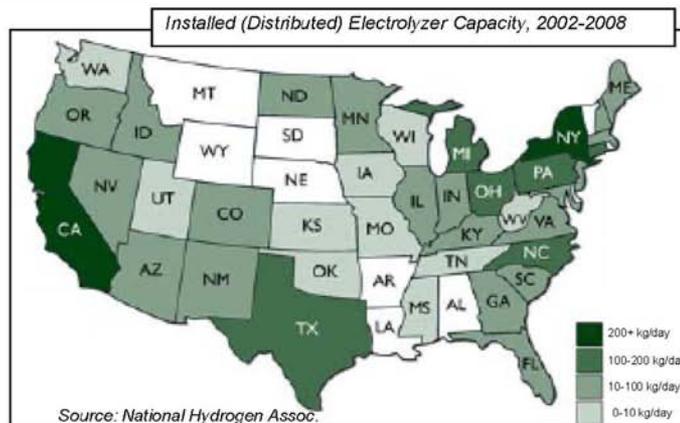
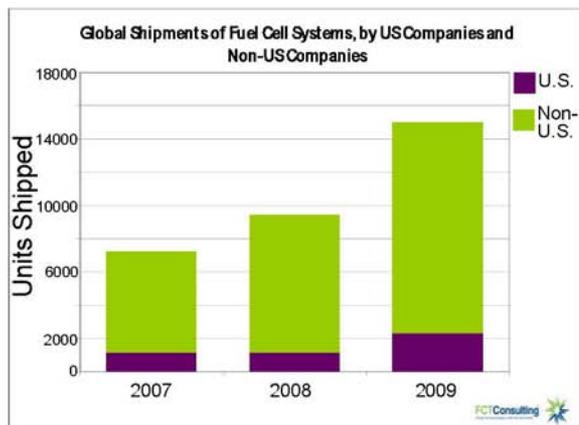


Data Use by DOE

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



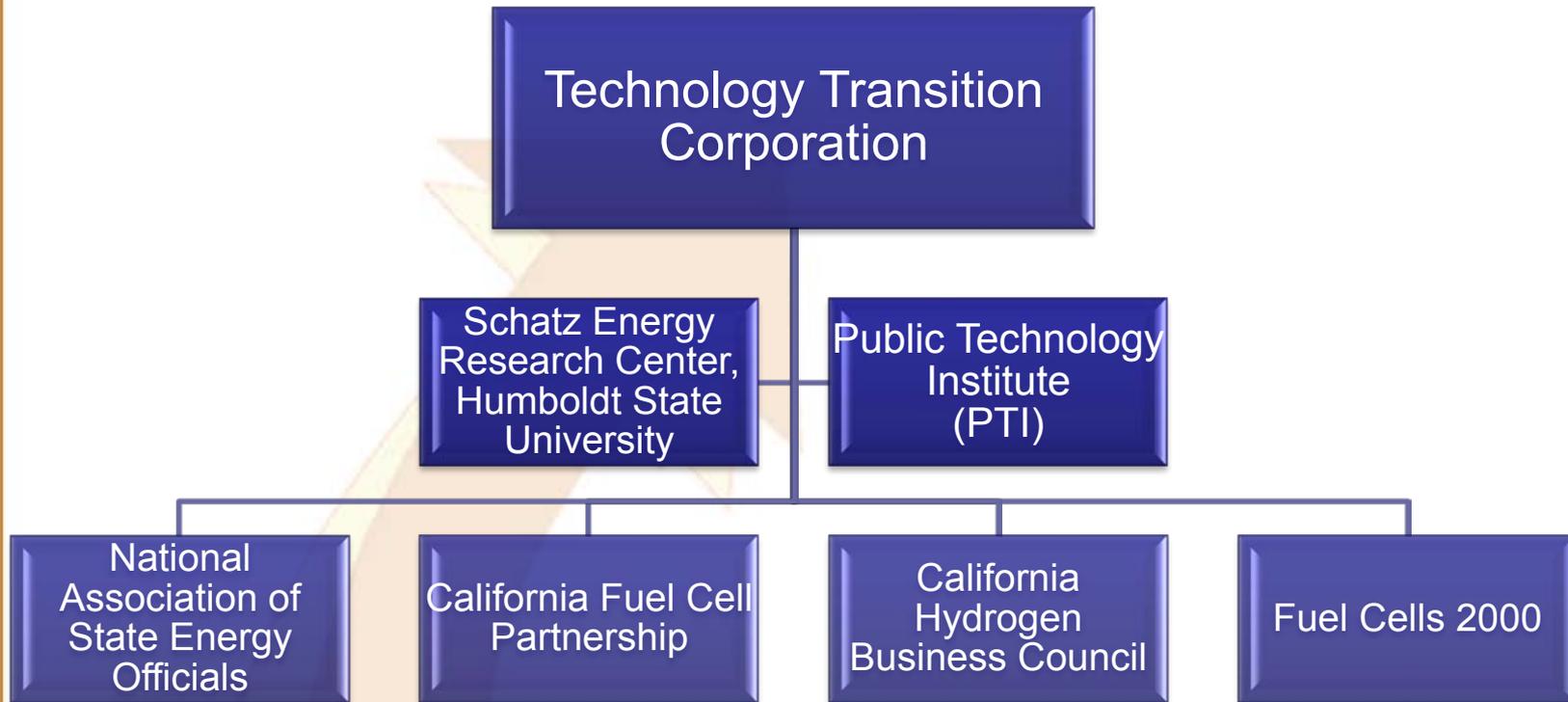
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Future Work

FY 11

- Launch webinar series in partnership with current collaborators and several more to be officially identified.
- Each webinar is carefully created to meet a need identified by this project that exists for a specific group of local leaders.
 - **Fuel Cells and Businesses in your Area: Impacts and Implications for Local Leaders**
 - **Hydrogen Fuel Cells: The State of the States**
 - **Hydrogen Fuel Cells: Where the Jobs Are**
 - **Hydrogen Fuel Cells: Policy Wrap Up**
 - **Fuel Cells on the Military Base: What You Need to Know**
 - **Hydrogen and Fuel Cells: Powering Buses and Other Transit**
 - **Hydrogen Fuel Cells: Maximizing Your Local Renewable Resources**
 - **Hydrogen Fuel Cells and the Council of Governments: What Local Leaders Need to Know**
- Survey participants for feedback and leads development

Summary

- Local Leaders goal surpassed
 - Educate 700 local leaders
- Local Leaders goal on target
 - Educate an additional 1,000 through webinars
- U.S. Market Report
 - most downloaded report on NHA site: over 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!

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Catalyzing Change for Clean Energy