



Clean Transportation Education Project 2011 DOE Vehicle Technologies Program Review Presentation

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Organization: NC Solar Center/NC State
University

Date: March 17 , 2011

Project ID #
TI018

Overview

Timeline

- Project start date : Sept 23,2009
- Project end date: Sept 22,2011
- Percent complete: 70%

Budget

- Total project funding
 - DOE share : \$401,852
 - Contractor share: \$0
- Funding received in FFY10: \$80,737
- Funding for FY11: \$321,115

Barriers

- ***Consumer reluctance to purchase new technologies.***
- ***Lack of technical experience with new fuels and vehicle technologies.***

Partners

Interactions/ collaborations:

- Wake Technical Community College- Role: lead educational/instructional
- 24 Clean Cities Coalitions- Role: workshop site hosts
- 104 public & private sector stakeholders- Role: Industry perspective & success story workshop presenters
- Project Lead: NC Solar Center/NC State University- Role: organize and develop content for workshops across the U.S.

Relevance: Project Objectives

- Bring together public and private stakeholders to develop integrated education materials and disseminate them through 48 educational workshops across the country.
- Workshops and collateral education materials will provide technical information that addresses specific concerns that hamper deployment efforts.

Relevance: Objectives & Milestones

| Month /Year | Task Milestones |
|--------------------------------------|--|
| Oct 2009-Mar 2010 | Project Management & Planning- subcontract with Wake Tech, 6 Clean Cities coalitions, 1 media outreach partner, & expand industry relations to serve as additional workshop presenters. Organize regional conference calls & establish workshop calendar for 24 workshops (Year 1) |
| Dec- Sept, 2010 & on going as needed | Develop Workshop Content- develop power point presentations on Biodiesel, Ethanol, Propane, Natural Gas, Fuel Economy/Idle Reduction (including electric vehicles). Develop handouts |
| Jan- Dec 2010 | Media and Evaluation Plan- including media advisory template, letter to the editor template, & trade media contact list |
| Feb –Dec 2010 | Year 1 workshop implementation |
| Aug –Dec 2010 | Year 2 planning: regional conference calls, revisions to sub award contracts, 2011 workshop schedule |
| Jan- Sept 2011 | Year 2 implementation |

Approach/Strategy

- NC Solar Center/NC State University (NCSC/NCSU) subcontracted with Wake Technical Community College (WTCC) to develop power points and give presentations in 4 DOE prescribed subject areas: Ethanol, Biodiesel, Natural Gas & Propane, Fuel Economy/Idle Reduction. NCSU & WTCC PIs have 40 years combined experience with auto tech and alternative fuels.
- NCSU subcontracted with 6 Clean Cities Coalitions (1 in each DOE region) to serve as regional coordinators to partner with other coordinators in region. Regional coordinators work with NCSC/NCSU and local Clean Cities coordinators to host workshops.
- NCSC/NCSU and Clean Cities workshop hosts collaborate with industry representatives and local success story stakeholders to conduct free ½ workshops to overcome consumer reluctance to adopt new technologies by presenting non biased technical information about fuel and technology properties, performance, infrastructure availability, incentives and related resources.

Approach/Strategy

- NCSC/NCSU develops agenda, save the date, invitation and media advisory template in collaboration with Clean Cities hosts.
- Clean Cities workshop hosts select date, location, site and solicit additional industry and success story speakers to add regional perspective.
- NCSC/WTCC collaborate to “customize” education presentation within scope of DOE subject areas depending on interest of workshop hosts. For example: Fuel Economy/Idle Reduction workshop may provide an overview of electric vehicles for first responders.



Approach/Strategy

How project is integrated with other deployment projects within the VT Program:

- The NCSC/NCSU is working directly with 24 Clean Cities coordinators across the U.S. to tailor workshops to meet their outreach needs to address barriers to more widespread adoption of alt fuel, advanced vehicle technologies & practices.
- With over 90 coalitions Clean Cities is the premier deployment mechanism for the DOE's VT program.



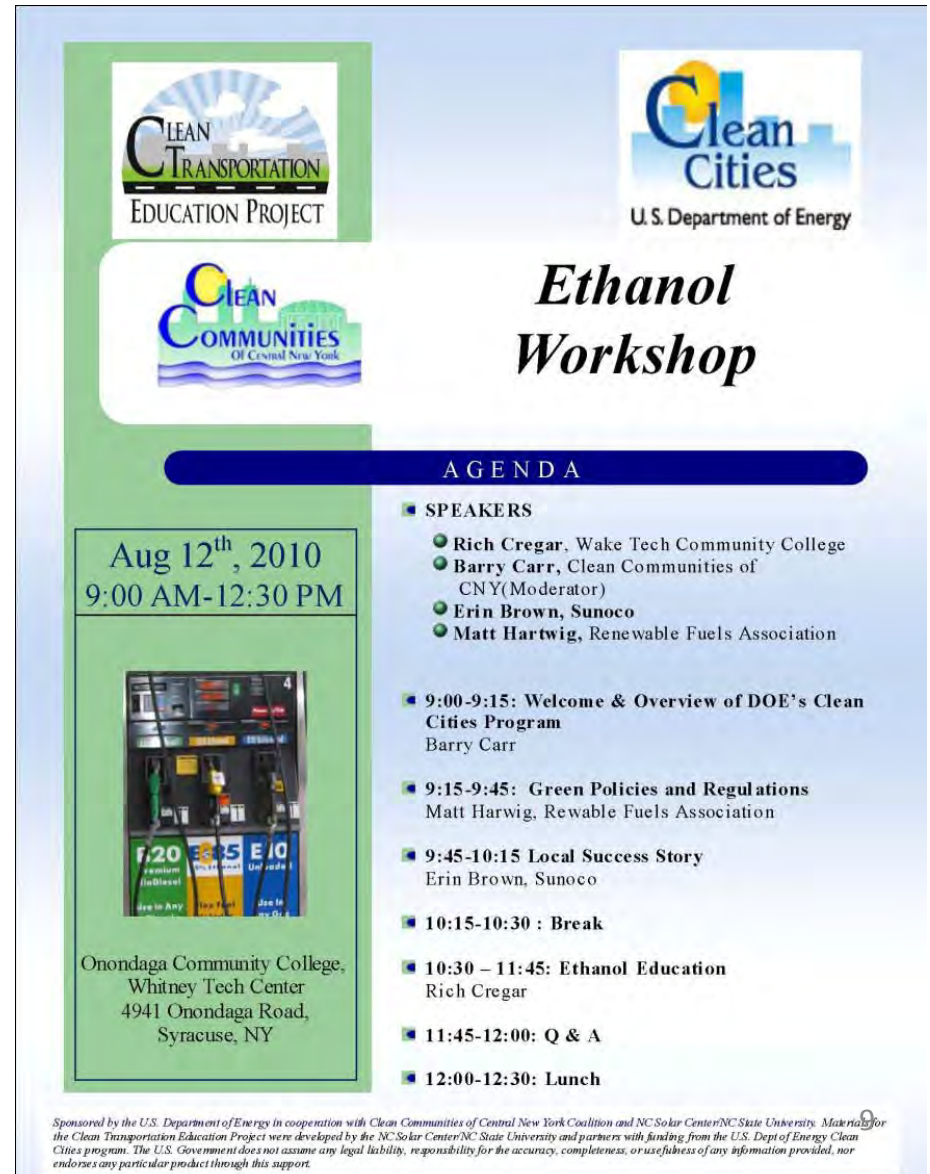
Go/No Go/Changes: Milestones

| Go/No Go Changes | Task Milestones |
|--|---|
| One sub award partner intended for media outreach collaboration dropped out | Project Management & Planning- subcontract with partners (i.e Wake Tech and 6 Clean Cities coalitions)& expand industry partnerships to serve as additional workshop presenters. Organize regional conference calls & establish workshop calendar for 24 workshops (Year 1) |
| One CTEP handout approved by DOE (Fuel Economy). DOE requested that CTEP workshops use DOE materials for all other handouts. | Develop Workshop Content- develop power point presentations on Biodiesel, Ethanol, Propane, Natural Gas, Fuel Economy/Idle Reduction (including electric vehicles). Develop handouts |
| Completed- media advisory, letter to editor, & trade media. On going efforts to gain more media coverage. | Media and Evaluation Plan- including media advisory template, letter to the editor template, & trade media contact list |
| Conducted 24 workshops in 2010 (including 2 ½ day subject area workshop conducted on the same day) | Year 1 workshop implementation |
| NCSC scope revised from 24 workshops in 2011 to 12, sub awards revised to include funding for workshop marketing. At revised total of 36 will be conducted through the 2 year project. | Year 2 planning: regional conference calls, revisions to sub award contracts, 2011 workshop schedule |
| Jan- Sept 2011- Plan to host total of 14 workshops (SE and NW regions agree to less funds per workshop to offer a 3 rd workshop in their region in Y2) | Year 2 implementation |

Technical Accomplishments & Progress

As of March 11th 2011:
27 workshops in 17
states have been
conducted

- 5 Fuel Economy/Idle Reduction (including Heavy Duty Hybrids and EVs for First Responders)
- 10 CNG and/or LPG
- 6 Biodiesel
- 6 Ethanol



The flyer features logos for 'CLEAN TRANSPORTATION EDUCATION PROJECT', 'Clean Communities Of Central New York', and 'Clean Cities U.S. Department of Energy'. The title 'Ethanol Workshop' is prominently displayed. The agenda is listed on the right, and the date and time are on the left. A photo of fuel pumps is included at the bottom left of the flyer.

CLEAN TRANSPORTATION EDUCATION PROJECT

Clean Communities Of Central New York

Clean Cities
U.S. Department of Energy

Ethanol Workshop

AGENDA

- **SPEAKERS**
 - Rich Cregar, Wake Tech Community College
 - Barry Carr, Clean Communities of CNY (Moderator)
 - Erin Brown, Sunoco
 - Matt Hartwig, Renewable Fuels Association
- **9:00-9:15: Welcome & Overview of DOE's Clean Cities Program**
Barry Carr
- **9:15-9:45: Green Policies and Regulations**
Matt Harwig, Renewable Fuels Association
- **9:45-10:15 Local Success Story**
Erin Brown, Sunoco
- **10:15-10:30 : Break**
- **10:30 – 11:45: Ethanol Education**
Rich Cregar
- **11:45-12:00: Q & A**
- **12:00-12:30: Lunch**

Aug 12th, 2010
9:00 AM-12:30 PM

Onondaga Community College,
Whitney Tech Center
4941 Onondaga Road,
Syracuse, NY

Sponsored by the U.S. Department of Energy in cooperation with Clean Communities of Central New York Coalition and NC Solar Center/NC State University. Materials for the Clean Transportation Education Project were developed by the NC Solar Center/NC State University and partners with funding from the U.S. Dept of Energy Clean Cities program. The U.S. Government does not assume any legal liability, responsibility for the accuracy, completeness, or usefulness of any information provided, nor endorses any particular product through this support.

Technical Accomplishments & Progress

Completed CTEP Workshops (as of 3/8/11)

| Workshop | Date | Location |
|-------------------------------------|-------------|-----------------------|
| Idle Reduction/Fuel Economy | 2/24/2010 | Tulsa OK |
| CNG/LPG | 3/11/2010 | Syracuse NY |
| Biodiesel | 3/23/2010 | Columbia, SC |
| CNG | 5/7/2010 | San Diego, CA |
| CNG/LNG | 5/13/2010 | Los Angeles, CA |
| Fuel Economy/Idle Reduction | 5/18/2010 | San Jose, CA |
| Biodiesel | 5/19/2010 | Fresno, CA |
| Ethanol | 5/27/2010 | Bismark, ND |
| HD Hybrid/Fuel Economy | 6/3/2010 | Louisville , KY |
| Hybrids/EV's | 6/8/2010 | Steamboat Springs, CO |
| CNG/Hybrid/EV/ for First Responders | 6/23/2010 | Reynoldsburg, OH |
| Ethanol | 7/9/2010 | Kansas City, MO |
| CNG/ Propane | 7/14/2010 | New Orleans, LA |
| Biodiesel | 7/15/2010 | Baton Rouge, LA |
| Ethanol | 8/12/2010 | Syracuse, NY |
| Fuel Economy/Idle Reduction | 9/7/2010 | Burlington VT |
| Biodiesel | 9/8/2010 | Kingston, RI |
| CNG | 9/14/2010 | Boise, Idaho |
| Natural Gas | 9/29/2010 | Coco Beach, FL |
| Biodiesel | 9/29/2010 | Bozeman, MT |
| Biodiesel/Ethanol | 10/21/2010 | Ann Arbor, MI |
| Ethanol | 12/9/2010 | Macon, GA |
| CNG/Propane | 1/13/2011 | Cupertino, CA |
| Ethanol | 1/14/2011 | Whittier, CA |
| CNG | 1/26/2011 | Greeley, CO |

Technical Accomplishments & Progress

CTEP project website created:

- Resources for workshop hosts
- Information for attendees (agenda and education power points)
- From 7/29/10-3/17/11 20 pages were viewed 2,312 times, with 1620 unique page views

North Carolina Solar Center - Clean Transportation

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Workshop Schedule

Alternate Fuels Education (AltFuelEd)

Welcome to the Clean Transportation Education Project



The Clean Transportation Education Project (CTEP) is a 2 year initiative funded by the **U.S. Department of Energy** to provide 48 alternative fuel and advanced transportation technology workshops across the U.S. The NC Solar Center has partnered with **Wake Technical Community College** and several Industry partners to provide content and deliver the ½ day events, one annually in each of the following subject areas: Biodiesel, Ethanol, Compressed Natural Gas / Propane; and Idle Reduction /Fuel Economy in each of 6 DOE Regions.

The project has also teamed up with U.S. Clean Cities Coalitions to host and encourage attendance at the workshops. Attendees will learn about the technical, policy and future trends of alternative fuels and advanced transportation technologies and practices.

For more information about getting involved as an industry partner or regional success story presenter contact Rob Gierka at (919) 515-0395 or rob.gierka@ncsu.edu.

For more information about the workshops contact the [regional coordinators](#).

Our Sponsors

U.S. Department of Energy WAKE TECH COMMUNITY COLLEGE NORTH CAROLINA SOLAR CENTER NC State University

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www.altfueled.org

Technical Accomplishments & Progress

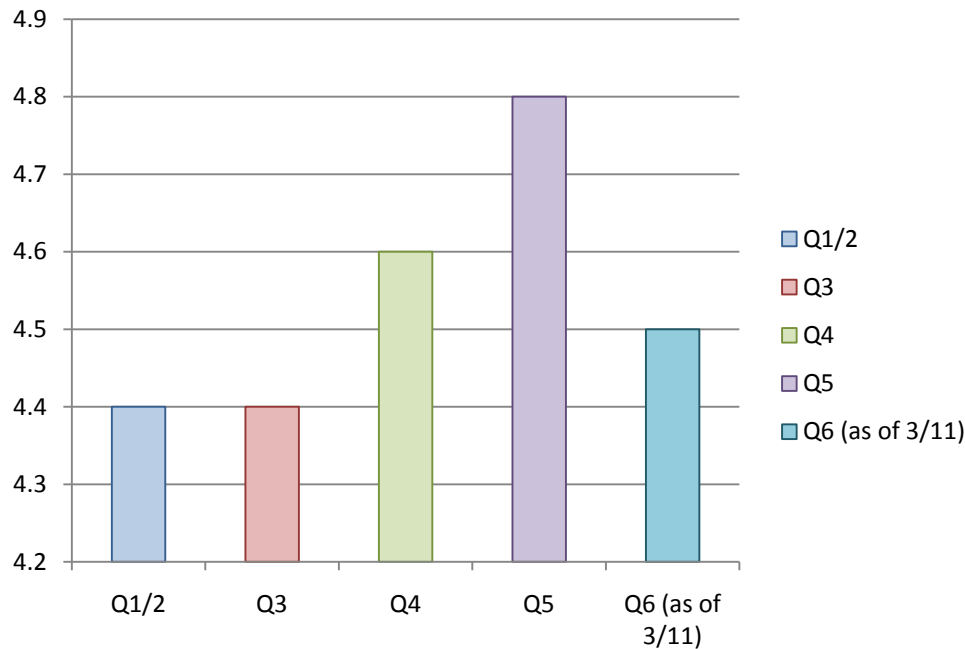
| Quarter | # workshops | Number of attendees | Number of surveys | % returned surveys | Average # attendees per | Average of survey evaluations (possible range of |
|-------------------------|-------------|---------------------|-------------------|--------------------|-------------------------|--|
| Q1/2 | 3 | 104 | 62 | 59.6% | 35 | 4.4 |
| Q3 | 9 | 219 | 125 | 57.1% | 24 | 4.4 |
| Q4 | 9 | 319 | 202 | 63.3% | 35 | 4.6 |
| Q5 | 3 | 64 | 38 | 59.4% | 21 | 4.8 |
| Q6 (as of 3/11) | 3 | 130 | 72 | 55.4% | 43 | 4.5 |
| Total as of 3/11 | 27 | 836 | 499 | 59.7% | 31 | 4.54 |

- A total of 836 attendees participated in 27 workshops (including some that were 2 half day workshops on different subjects on the same day)
- A total of 499 printed surveys were collected from attendees (approximately 60% of attendees).
- The workshops on average received an evaluation of 4.5 out of a possible 5 points.

Technical Accomplishments & Progress

Average Survey Responses

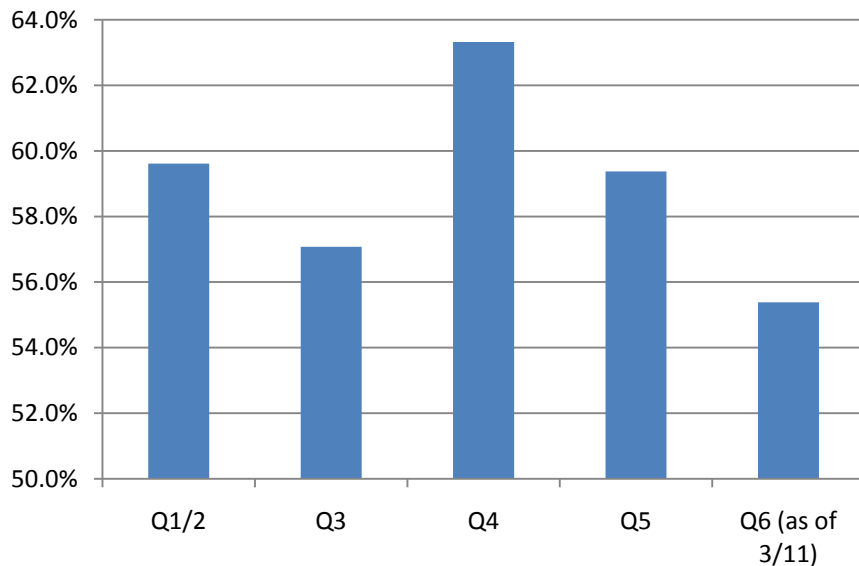
(range of 1-5, 5 being the best)



- Unsolicited email: **I am very grateful for the wonderful presentation Richard Cregar made in Steamboat Springs at the Northern Clean Cities workshop.... presentation was particularly helpful because he clearly explained the classes of hybrid and electric vehicles, how they are powered (i.e., battery type), what electrical hookups are needed, and what we can expect in terms of performance. His presentation was practical, comprehensive, and interesting.** *James L. Schrack, Greening Government Program Manager, Colorado Governor's Energy Office*

Technical Accomplishments & Progress

% of Workshop Attendees Who Returned Their Evaluation Survey

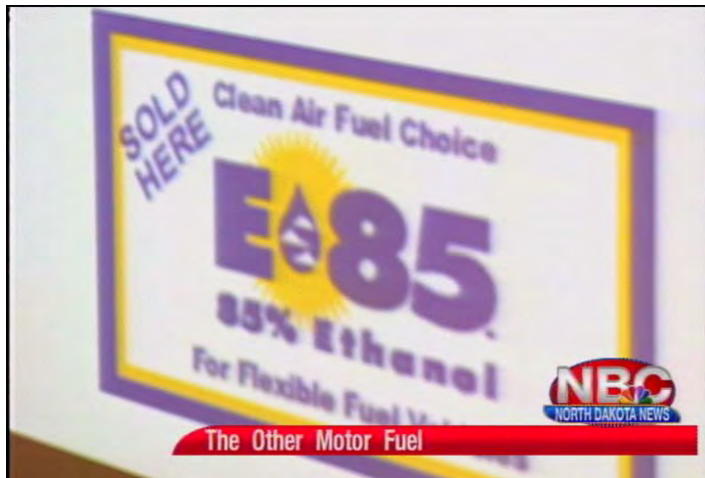


Workshop evaluations- a sampling of evaluation comments : What did you like the most?

- "Explanation of basics of biofuel and effects of various feedstocks on efficiency levels. Success stories, smooth transition in power point presentation and good design of power points to support talks" *Rhode Island Biodiesel workshop*
- "The depth of information and presenters qualifications was top notch" , *Montana Biodiesel workshop*
- "The networking of professionals and their knowledge." *CA CNG/LNG workshop*
- "Very informational and well researched", *GA Ethanol workshop*

Accomplishments: Media

- Media Alerts were created by the NC Solar Center and distributed by Clean Cities workshop hosts
- An trade media list was compiled by the NC Solar Center with over 30 contacts to publicize workshops.
- A *Point of View* editorial about the importance of fuel diversity was created by the NCSC and distributed to workshop hosts to be customized for local region.



From TV news about North Dakota E85 workshop



Middle Ga. Clean Cities to Host Ethanol Workshop

As part of the Clean Transportation Education Project, Middle Georgia Clean Cities will host an Ethanol Workshop on Dec. 9 from 10 a.m. to 2 p.m. at Middle Ga. Regional Commission in Macon.

Speakers include:

Dennis Burnett of Davis Oil, Rich Cregar from Wake Tech Community College, Matt Rhodes from Walthall Oil Company, Dr. Linda Smith from Clean Cities of Middle Ga. Board and Charise Stephens from Middle Georgia Clean Cities will serve as moderator. Middle Ga. Regional Commission is located at 175 Emery Hwy Suite-C in Macon.

From web posting at Macon.com

Collaboration and Coordination

- Workshops conducted/planned in 19 states with **24 Clean Cities hosts**
- **104 additional industry and regional “success story” speakers** as of March 11, 2011.
 - Industry collaborators include: Clean Energy, Propane Education Research Council, North Dakota Ethanol Producers, REG Marketing & Logistic (Biodiesel), EnergyXtreme (Idle Reduction).
 - Regional “ success stories” include: NY Dept of Transportation, University of Michigan, Los Angeles County, Corinthian Parking, Davis Oil



Proposed Future Work

- Organize and conduct 11 more workshops

| Workshop | Date | Location | Coordinator |
|-----------------------------------|---------------|------------------|---------------------|
| Driving Success with Propane | 3/15/2011 | Kansas City, MO | Kelly Gilbert |
| Fuel Economy Idle Reduction (EVs) | 3/23/2011 | Fairfax, VA | Chelsea Jenkins |
| Ethanol | 4/14/2011 | New Orleans, LA | Rebecca Otte |
| Fuel Economy Idle Reduction (EVs) | 4/27/2011 | Syracuse, NY | Barry Carr |
| CNG | 5/5/2011 | Jackson Hole, WY | Phil Cameron |
| Biodiesel | 5/18/2011 | Flushing, NY | Christina Ficicchia |
| Natural Gas | 6/2/2011 | Moab, Utah | Robin Erickson |
| Idle Reduction/Fuel Economy | 6/15/2011 | Knoxville, TN | Jonathan Overly |
| Electric Vehicle | 9/16/2011 | RTP, NC | Kathy Boyer |
| Biofuels in Badgerland | 9/14/2011 | Milwaukee, WI | Francis Vogel |
| Propane | Reschedueling | Reynoldburg, OH | Andrew Conley |

Proposed Future Work

- Increase measurable results
- Work with hosts to increase attendance, number of evaluations collected, and media coverage



Proposed Future Work

- Expansion of Fuel Economy workshop opportunities
 - Introduce driving component using fuel economy tool. 30 ScanGauge II™ tools will be incorporated into driving segment of workshop
 - Short video has been created and will be utilized to instruct and illustrate how to set up the tool to track average and instantaneous fuel economy per trip



Summary

- As of March 11, 2011 the CTEP project has been successful in providing useful technical information to over 836 attendees of 27 workshops about vehicle technologies, fuels and practices to help overcome barriers to more widespread adoption. Attendee evaluations averaged 4.54 points out of a possible 5 points.
- NCSU underestimated the amount of effort required to organize 48 workshops across the U.S. in 2 years. DOE reduced FFY 2 workshop requirements from 24 to 12. NCSU will work with project partners for the remainder of the project to increase attendance (an average of 50 is sought) and increase evaluation response rate and scores.



Summary

- **Relevance-** barriers to consumer adoption are overcome through non-biased educational workshops on alternative fuels and advanced transportation technologies
- **Approach-** collaborative effort bringing together Wake Tech Community college automotive technology instructor and NCSU NC SC Clean Transportation program to create and deliver educational materials that are relevant and customized to specific regions of the U.S.
- **Technical Accomplishments-** 27 workshops, 836 attendees, 4.54 average evaluation out of possible 5
- **Collaborations-** 24 Clean Cities coordinators, 104 industry and stakeholder workshop speakers, and 2 educational institution leads
- **Future Directions-** increase attendance and media awareness and evaluations

