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2016 DOE Vehicle Technologies Office Review Alternative Fuel Vehicle Curriculum Development and Outreach Initiative

Principal Investigator/Presenter

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Organization

West Virginia University Research Corporation /
National Alternative Fuels Training Consortium

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**National Alternative Fuels
Training Consortium**

A Program of



Project ID: TI066

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



Overview

Timeline

Project start date: 06/01/2015
Project end date: 05/31/2017
Percent complete: 40% to 45%

Budget

Total project funding
DOE share: \$800,000
Contractor share: \$201,511
Funding received in FY15
\$91,025.32
Funding for FY 2016
\$708,974.68

Barriers Addressed

- Impact on consumer reluctance to purchase new technologies through education of critical audiences.
- Lack of technical experience with new fuels and vehicle technologies.
- Maintenance of local coalition effectiveness.

Partners

Project lead: WVU Research Corporation / National Alternative Fuels Training Consortium
Partners: Alabama Clean Fuels; Automotive Recyclers Association (ARA)/ ARA Education Foundation; Dallas-Fort Worth Clean Cities; East Bay Clean Cities; Giant Eagle; Gladstein, Neandross & Associates; Greater Indiana Clean Cities; Greater Long Island Clean Cities; National Truck Equipment Association; WV Clean State Program; Utah Clean Cities



Relevance:

Overall Project Objectives

1. Develop curricula and conduct training related to Alternative Fuel Vehicles (AFVs) and Electric Drive Vehicles (EVs)
 - AFV/EV Collision Repair Technician Training (classroom)
 - AFV/EV Fueling, Repair, Maintenance and Conversion Facility Training (classroom)
 - AFV and Advanced Technology Vehicle Training for Towing and Roadside Assistance (online)
 - AFV and Advanced Technology Vehicle Training for Automotive Recycling Operators (online)
2. Conduct marketing & outreach activities to promote the dissemination of project-related curricula and training materials
 - Develop Internal Advisory Committee
 - Develop online toolbox with promotional & informational materials to assist in dissemination and advertising of curricula
 - Promote project-related curricula and training at industry conferences
 - Conduct a Clean Cities Coordinator Seminar to introduce project curricula and outreach activities
 - Utilize National AFV Day Odyssey to promote project curricula



Relevance:

Project Objectives PY1

Work Completed - PY1 (June 1, 2015 – May 31, 2016)

1. Curriculum Development (*Project Objectives 2.1-2.4*)
 - Groundwork laid to develop curricula for targeted audiences
 - Pre-development analysis
 - Course outlines
 - The four new courses being developed will provide multiple new, underserved audiences with technical experience working with AFVs and advanced technology vehicles, thus filling a critical gap in educational opportunities and reducing apprehension and resistance to support these new fuels/technologies, and breaking down barriers.



Relevance:

Project Objectives PY1

Work Completed - PY1 (June 1, 2015 – May 31, 2016)

Marketing and Outreach (*Project Objectives 3.1-3.4 and 3.6*)

- Advisory Committee of Clean Cities Coalition Coordinators developed and utilized
 - Online Toolbox web micro-site developed and ready for addition of Toolbox materials as they are developed
 - Clean Cities Coordinator Seminar conducted
- The advisory committee helps ensure the successful development of the marketing and outreach materials, providing guidance on the delivery of these materials to all coordinators - for use by them and their stakeholders - and therefore contributing to the maintenance of local coalition effectiveness by providing them with useful information and tools to reach these newly targeted audiences.



Relevance: Project Impact

The project's goals to develop curricula and marketing and outreach materials directly supports the U.S. DOE Clean Cities mission by:

- Identifying and encouraging interest in and understanding of AFVs and advanced technology vehicles among multiple underserved audiences
- Identifying and expanding educational opportunities on AFVs and advanced technology vehicles to multiple underserved audiences
- Providing Clean Cities coalitions with information and tools to reach, build partnerships with, and support training to multiple audiences critical to the proper maintenance, repair, towing, and salvage of AFVs and advanced technology vehicles.



FY1 Milestones

| Date | Milestone or Go/No-Go | Description | Status |
|---------------|-----------------------|---|----------|
| Aug 20, 2015 | Milestone | Hold DOE Kickoff Meeting | Complete |
| Sept 30, 2015 | Milestone | Execute Partner Agreements | Complete |
| Sept 30, 2015 | Milestone | Establish an Internal Advisory Committee | Complete |
| Oct 30, 2015 | Milestone | Complete curriculum outlines for course development | Complete |
| Nov 30, 2015 | Go/No-Go | Course outlines completed for training | Complete |



Approach/Strategy

Curriculum Development

- Training being developed is for audiences identified by DOE Clean Cities to fill a critical gap - serving audiences typically forgotten
 - Classroom training for collision repair personnel and fueling, maintenance and repair facilities personnel
 - Online training and resources for towing operators; salvage yard personnel; and recycling operators – who, according to national industry organizations representing them, are unlikely to attend classroom training
- Utilizing proven method of curriculum development, perfected over almost 25 years of working with industry to develop classroom and online training for audiences that have an impact on the acceptance of AFVs

Marketing and Outreach

- Materials are being developed to help increase the effectiveness of Clean Cities Coalitions as they promote the use of AFVs; provide training to support this underserved audience; and increase public awareness and consumer acceptance and adoption of alternative fuels.



Technical Accomplishments & Progress

Task 1. Project Management and Administration

- Subtask 1.1: Kickoff Meetings
 - DOE Kickoff Meeting held August 20, 2015
 - Kickoff Calls have also been held with each partner
- Subtask 1.2: Subgrantee Agreements
 - Agreements are in place with all project partners
- Subtask 1.3: Reporting
 - Up-to-date on the submission of all progress, financial and property reports



Technical Accomplishments & Progress

Task 2. Curriculum Development & Training

- Subtask 2.1: AFV/EV Collision Repair Technician Training (classroom)
 - Subtask 2.2: AFV/EV Fueling, Repair, Maintenance and Conversion Facility Training (classroom)
 - Subtask 2.3: AFV and Advanced Technology Vehicle Training for Towing and Roadside Assistance (online)
 - Subtask 2.4: AFV and Advanced Technology Vehicle Training for Automotive Recycling Operators (online)
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- Course outlines submitted to DOE for review / DOE approval received
 - Multiple conversations with subject matter experts have been held
 - SMEs will aide in curriculum development, provide images and other content, as well as SME review of content as it is developed
 - Curriculum development underway for all four courses



Technical Accomplishments & Progress

Task 3. Marketing & Outreach

- Subtask 3.1: Promotional and Informational Materials
 - Development of multiple promotional and informational materials is ongoing. These materials will assist in dissemination and advertising of project-related curricula
- Subtask 3.2: Promote Curricula & Training at Industry Conferences & Meetings
 - Online AFV/EV Trainings for Towing Operators and Salvage Yard/Recycling Technicians featured at FDIC (April 18-23, 2016) and ACT Expo (May 2-5, 2016)
 - Two webinars conducted as part of ACT Expo 2016
 - Preparing Your Shop for Alternative Fuels webinar conducted March 3, 2016
 - Comprehensive Training for Alternative Fuel Vehicle Deployment: Internal & External Stakeholders conducted April 7, 2016
 - Additional planning currently underway for FY2 conferences
 - Automotive Recyclers Association Annual Convention & Expo (October 26-29, 2016)
 - 2017 NTEA Green Truck Summit (March 2017)
 - ACT Expo 2017 (May 2017)
 - Towing/Automotive Service Conference (TBD)



Technical Accomplishments & Progress

Task 3. Marketing & Outreach

- Subtask 3.3 Update and Enhance Online Toolbox
 - Structure of the Online Toolbox currently being revised to allow for better accessibility and utilization of the materials
 - Content for Online Toolbox currently under development
- Subtask 3.4: Conduct a Clean Cities Coordinator Awareness Seminar
 - Clean Cities Seminar conducted at ACT Expo on May 2, 2016
- Subtask 3.5 Utilize National AFV Day Odyssey to promote AFV safety training products developed as part of this project
 - National AFV Day Odyssey will be conducted in 2017
 - Planning for event is underway
- Subtask 3.6: Develop Advisory Committee
 - Subgrantee agreements with members of the Advisory Committee are in place
 - Advisory Committee Conference Calls held on September 24, October 19 and November 16, 2015 and April 1, 2016



Technical Accomplishments & Progress

Products developed as part of the project directly support the goals of the Vehicle Technologies program by:

- Positively impacting consumer reluctance to purchase new technologies by providing education to audiences that directly impact the success of AFVs
 - Providing services such as maintaining the vehicles
 - Properly towing the vehicles
 - Addressing concern about the safe disposal of AFV components
 - Easing market introduction of AFV technologies through efforts in partnership with Clean Cities Coalitions in local communities
- Developing curricula and training a cadre of instructors to help address the lack of technical experience with new fuels and vehicle technologies
- Working with an Advisory Committee of Clean Cities Coalition Coordinators to develop materials that will help maintain local coalition effectiveness



Response to Reviewers Comments

- This project began on June 1, 2015, therefore this is the first review and there are no previous reviewer comments.



Collaboration with Other Institutions

- 7 DOE Clean Cities Coalitions are participating on the Advisory Committee (*Subgrantee*)
 - Alabama Clean Fuels; Dallas-Fort Worth Clean Cities; East Bay Clean Cities; Greater Indiana Clean Cities; Greater Long Island Clean Cities; State of West Virginia Clean Cities; and Utah Clean Cities
 - Advisory Committee reviewed, discussed and provided input on the Clean Cities Awareness Seminar Presentation, structure of the Online Toolbox and development of marketing and outreach materials
- Gladstein, Neandross & Associates (*Subgrantee*)
 - Multiple conference calls have been held with GNA regarding ACT Expo 2016
 - NAFTC and GNA partnered to present two webinars as part of ACT Expo 2016, with GNA promoting and hosting the webinars and NAFTC preparing and conducting them
 - Preparing Your Shop for Alternative Fuels webinar on March 3 and Comprehensive Training for Alternative Fuel Vehicle Deployment: Internal & External Stakeholders on April 7, 2016
 - Working together to plan and hold Clean Cities Coordinator Awareness Seminar at ACT Expo 2016



Collaboration with Other Institutions

- **AAA** (*SME Partner*)
 - Providing subject matter expertise related to towing industry
 - Will also help disseminate information about the Online AFV/EV Training for Towing Operators
- **Giant Eagle** (*SME Partner*)
 - Providing subject matter expertise related to natural gas vehicle facility development and fleet management
- **National Truck Equipment Association** (*Event Partner*)
 - Event partner for 2017 NTEA Green Truck Summit
- **Automotive Recyclers Association / ARA Education Foundation** (*SME Partner and Event Partner*)
 - Providing subject matter expertise related to Salvage Yard and Automotive Recycling industries
 - Will also help disseminate the information about the Online AFV/EV Training for Salvage Yard/Recycling Technicians



Remaining Challenges & Barriers

- Ever-changing technology means curricula needs to be constantly updated.
 - How to do this, especially with online training, is being evaluated.
- Getting the training into the hands of the actual users.
 - There are multiple audiences not used to having training developed for them.
 - The target audience (actual user) is normally not the person making the decision on funding for training. This will require NAFTC, Clean Cities and others to ensure these management personnel also understand the clear need for training.



Proposed Future Work

- Finalize curricula materials (*Subtasks 2.1-2.4*)
- Conduct train-the-trainer courses for classroom curricula (*Subtask 2.5*)
- Work with partners to roll out online training to their members (*Subtask 2.5*)
- Continue development of marketing and outreach materials (*Subtask 3.1*)
- Conduct Clean Cities Coordinator Awareness Seminars at 2017 NTEA Green Truck Summit and ACT Expo (*Subtask 3.2*)
- Finalize and populate Online Toolbox (*Subtask 3.4*)
- Conduct National AFV Day Odyssey in 2017 (*Subtask 3.5*)
- Continue Advisory Committee Discussions/Conference Calls (*Subtask 3.5*)



Summary

Significant progress has been made in PY1

- Curricula development – **Status: In Progress**
- Marketing and promotional materials – **Status: In Progress**
- Promotion of curricula & training at industry conferences – **Status: ☒ PY1 Conferences Completed and PY2 Conferences In Progress**
- Development of Online Toolbox – **Status: In Progress**
- Clean Cities Coordinator Awareness Seminars – **Status: ☒ PY1 Seminar Completed, PY2 Seminar In Progress**
- Develop Advisory Committee – **Status: ☒ Completed**

Milestones on target to be completed in PY2

- Complete classroom and online curricula
- Complete development of promotional materials for training
- Conduct train-the-trainer courses for classroom curricula
- Beta test online training

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Technical Back-Up Slides



**National Alternative Fuels
Training Consortium**

A Program of





Classroom Curricula

Alternative Fuel Vehicle Collision Repair Technician Training

1. Introduction
2. Importance of AFVs
3. Types of AFVs – Natural Gas, Propane Autogas, Hydrogen, Electric Drive, Biodiesel and Ethanol
4. Overview of Collision Repair Facility Requirements
5. Safety
6. Specialized Tools, Equipment, Parts and Resources
7. Overview of Alternative Fuel Vehicle Fueling/Electrical Systems
8. Vehicle Immobilization/Defueling/Discharging
9. Collision Repair Concerns
10. Post Repair Procedures and Inspections
11. Course Conclusion



Classroom Curricula

AFV Fueling, Repair, Maintenance and Conversion Facility Training

1. Introduction
2. Importance of AFVs
3. Types of AFVs – Natural Gas, Propane Autogas, Hydrogen, Electric Drive, Biodiesel and Ethanol
4. Overview of Facility Requirements and Recommendations
5. Natural Gas Vehicle Repair and Maintenance Facility
6. Propane Autogas Vehicle Repair and Maintenance Facility
7. Hydrogen Vehicle Repair and Maintenance Facility
8. Electric Drive Vehicle Repair and Maintenance Facility
9. Biodiesel Vehicle Repair and Maintenance Facility
10. Ethanol Vehicle Repair and Maintenance Facility
11. Course Conclusion



Online Curricula

AFV and Advanced Technology Vehicle Training for Towing and Roadside Assistance

1. Introduction
2. Importance of AFVs
3. Types of Alternative Fuels and their Properties
4. Automotive Towing and Roadside Assistance Basics
5. Towing and Roadside Assistance for Electric Drive Vehicles
6. Towing and Roadside Assistance for Natural Gas Vehicles
7. Towing and Roadside Assistance for Hydrogen Internal Combustion Engine (ICE) Vehicles
8. Towing and Roadside Assistance for Propane Autogas Vehicles
9. Towing and Roadside Assistance for Biodiesel Vehicles
10. Towing and Roadside Assistance for Ethanol Vehicles
11. Course Conclusion



Online Curricula

AFV and Advanced Technology Vehicle Training for Automotive Recycling Operators

1. Introduction
2. Importance of Alternative Fuels
3. Types of Alternative Fuels and Their Properties
4. Automotive Recycling Basics
5. Identifying, Dismantling, Recycling and Crushing Electric Drive Vehicles
6. Identifying, Dismantling, Recycling and Crushing Natural Gas Vehicles
7. Identifying, Dismantling, Recycling and Crushing Hydrogen Internal Combustion Engines (ICE) Vehicles
8. Identifying, Dismantling, Recycling and Crushing Propane Autogas Vehicles
9. Identifying, Dismantling, Recycling and Crushing Biodiesel Vehicles
10. Identifying, Dismantling, Recycling and Crushing Ethanol Vehicles
11. Course Conclusion



Online Toolbox

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NATIONAL ALTERNATIVE FUELS TRAINING CONSORTIUM

HOME PROJECTS TOOLBOX

TOOLBOX

CLEAN CITIES PROJECTS

Welcome to the Clean Cities Projects Toolbox.

WELCOME TO THE CLEAN CITIES LEARNING PROGRAM!



The NAFTC worked in partnership with the U.S. Department of Energy (DOE) Clean Cities Program to develop the turn-key *Clean Cities Learning Program* to raise awareness and foster a greater understanding of alternative fuels, alternative fuel vehicles (AFVs), and advanced technology vehicles, through a targeted education and outreach effort. This toolbox includes information to assist with the promotion and hosting of First Responder Safety Training (for fire fighters, law enforcement, and emergency medical services personnel) and Petroleum Reduction Technologies Training (which includes biofuels; gaseous fuels; electric drive; fuel economy; and idle reduction) activities.

TOOLBOX CONTENT PROJECT VIDEOS

WELCOME TO THE AFV CURRICULUM DEVELOPMENT AND OUTREACH INITIATIVE!



The NAFTC is working in partnership with the U.S. Department of Energy (DOE) Clean Cities Program to develop the *AFV Curriculum and Outreach Initiative* which will include the development of alternative fuel vehicles (AFVs) and advanced technology (biofuels, gaseous fuels; and electric drive), for a wide underserved audiences, such as collision repair personnel, recycling operators, and AFV fueling and charging stations, facilities and repair facilities. This toolbox will include information to assist with the promotion and hosting of training activities, worksheets and other information specific to individuals working in these fields.

TOOLBOX CONTENT PROJECT VIDEOS

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NATIONAL ALTERNATIVE FUELS TRAINING CONSORTIUM

HOME PROJECTS TOOLBOX

MEDIA RELATIONS

This section includes information on promoting training workshops, along with promotional ideas.

Media Relations Overview

Media relations are important because they provide a successful method of reaching your target audiences, affecting policy and practice, and altering public opinion. This section discusses proactive and reactive media relations including fielding press calls, preparing a media kit, and interview dos and don'ts. You will also learn how to develop and maintain relationships with journalists in the national, regional, and specialist press as well as broadcast media. In addition, this section will teach you how to prepare and evaluate a media relations campaign and how to get free, positive coverage.

2010 State of the Media(.pdf)

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NATIONAL ALTERNATIVE FUELS TRAINING CONSORTIUM

HOME PROJECTS TOOLBOX

AFV CURRICULUM DEVELOPMENT AND OUTREACH INITIATIVE

Learn how to utilize interactive media to promote your workshop and organization.

- Media Relations
- Marketing Communications
- Interactive Media
- AFV Shop Prep
- AFV Collision Repair
- AFV Training and Safety

Establish relationships with one or two specialist journalists customized with your topics and to report on them accurately. Maintaining good relationships with members of the media.