April 8, 2010
Grand Opening
CESE Biofuels Testing Laboratory
+
2010 UCONN Biofuels Symposium
DOE Program / Project Funding

- Clean Cities Recovery Act
- Total amount in program awards announced on 26 August 2009 – $283,500,000
- 25 awards made, ranging from $5.5M-$15M
- CT Funding 11th largest award in the program
  - USDOE funding – $13,195,000
  - Non-federal Cost Share – $13,583,789
    (provided by project team members)
  - Total Project – $26,778,789
Project Map

• Greater New Haven Clean Cities Coalition, Inc. — Award Recipient from the USDOE
  • Cooperating Clean Cities Coalition Partners
    • Capitol Clean Cities Coalition
    • Southwestern Connecticut Clean Cities Coalition
    • Norwich Clean Cities Coalition
  • Innovation Drive, Inc. – Project Manager
  • Sabre Engineering – Technical Advisor & Data Collection System development, implementation
DOE funding will flow into the project for payment of allowable expenses as approved by DOE in the negotiated award package.

Non-federal Cost Share will flow into or through the project for payment or verification of contribution for allowable project expenses.

All funding will flow into the project to be distributed according to the Statement of Work and Budgets approved by DOE prior to Award.

Project will be executed according to the approved Statement of Work and Budget. Schedules will be monitored closely.
**Project Goals**

- **Goal 1:** Direct and manage project-related activities;
- **Goal 2:** Complete and commission multiple alternative fuel infrastructures, and deploy > 180 AFVs in Connecticut;
- **Goal 3:** Implement a semi-automated data collection and reporting system for petroleum and emissions displacement, and fuel sales/distribution;
- **Goal 4:** Provide training for relevant personnel, First Responders and technicians, including Safety and Operations;
- **Goal 5:** Develop and implement: Education, Outreach and Marketing programs and Business Cases for fleets and public consumers.
Project Overview

Over the next 4 years, the CT Clean Cities Future Fuels Project will:

- Make 5 Alternative Fuels Available at new sites;
- In 10 Distinctive Locations;
- Deploy 183 Vehicles as part of the project;
- Provide fueling for > 20 Vehicles purchased outside the project;
- Engage > 30 Team Member organizations;
- Collect Data and Report to the USDOE and CT residents;
- Train 1st Responders, site personnel and technicians; and,
- Implement the largest Education, Outreach and Marketing campaign in the history of Clean Cities or Alternative Fuels in the state of Connecticut.
**Displacements**

- **Petroleum Fuels** (Diesel/Gasoline)
  - More than **5.8 Million Gallons** during in-fleet life span
  - Equivalent to over 1,000 fuel tanker trucks!

- **Emissions**
  - Almost **11 Million pounds** of Greenhouse Gases (GHG)
  - Nearly **500 Thousand pounds** of Carbon Monoxide (CO)
  - Over **300 Thousand pounds** of Nitrogen Oxides (NOx)
  - Over **50 Thousand pounds** of Volatile Organic Compounds (VOC), and,
  - Over **3 Thousand pounds** of Fine Particulate Matter (PM2.5)
The project will install and commission five alternative fuels across the state, including:

- LNG (Liquefied Natural Gas)
- CNG (Compressed Natural Gas)
- Electric
- Hydrogen
- B20 (20% Biodiesel blended with 80% diesel fuel)
The project will deploy 183 AFVs across the state, including:

- 18 Heavy-Duty Tractors
- 4 Heavy-Duty Dump Trucks (conversions)
- 152 Light-Duty Vehicles
- 7 Medium-Duty Shuttle Buses
- 2 Hybrid Sedans
Vehicles

Kenworth
Liquefied Natural Gas (LNG)
Class 8 Tractor

Vehicle Production Group, LLC
MV-1 CNG Taxi

Ford CNG Medium Shuttle Bus
Schedule

Review high-level project schedule

**Phase I**
- Design, Build & Commission Fueling Stations
- Deploy New & Converted Vehicles
- Develop/Conduct Training
- Marketing/Outreach
- Reporting and Data Collection

**Phase 2**
- Data Collection & Reporting
- On-going Training
- Marketing/Outreach

**Project Close-out**
- Month 48
Schedule

• Official Project Start
  – 1 February 2010

• Kick-off Meeting
  – 17 February 2010

• Deployment of Project Technologies
  – No Later Than 31 January 2012

• Data Collection, Reporting, Marketing/Outreach, Demonstration – 24-months minimum
  – Date of earliest deployment after start date – 31 January 2014

• Wrap-up and final reports
  – January 2014
Locations

- Bridgeport
- Bloomfield
- Fairfield
- Glastonbury
- Hartford
- Norwich
- Meriden
- West Haven
- Windsor Locks
Fueling Stations

- Bridgeport- 1 LNG/CNG Station
- West Haven- 1 CNG Station
- Bloomfield- 1 CNG Station
- Windsor Locks- 1 CNG Station, Electric Charger, & B20
- Glastonbury- 1 CNG Station
- Fairfield- 1 CNG Station
- Meriden- 1 CNG Station
- Norwich — at CMEEC, 2 Electric Chargers
- Norwich — at NPU, 1 B20, an efficiency upgrade to existing CNG, and 8 Electric Chargers
- Hartford- 1 Hydrogen Station
Data Collection and Reporting

• State-of-the-Art Data Collection System Implementation at major fueling infrastructure installations.
  • Hardware installation will enable automatic capture of key information for reporting to the USDOE and project participants
  • System generated data will contribute to reporting information of petroleum and emissions displacement, and alternative fuels sales and distribution.
• Web ERP (Enterprise Resource Planning) software development and deployment will assist the Team in gathering remaining data required for reporting, such as miles traveled per vehicle.
  • Results will be posted on the project web site periodically at www.ct-futurefuels.org for access by interested parties;
• The objective of this system is to ensure accuracy and promote sustainable growth opportunities in the alternative fuels industry
Project Team

- Greater New Haven Clean Cities
- Capitol Clean Cities
- Norwich Clean Cities
- Southwestern CT Clean Cities
- Innovation Drive, Inc.
- Sabre Engineering, Inc.
- Big Fish Ad/PR
- National Alternative Fuels Training Consortium
- Signature Transportation Parts & Service, Inc.
- CONNDOT
- City of Bridgeport
- Town of Glastonbury
- City of Meriden
- Town of Fairfield
- CTTRANSIT
- Avalence
- Metro Taxi

- Enviro Express
- Nana Corporation
- Yellow Cab
- Executive Valet Parking
- R&G Services
- Norwich Public Utilities (NPU)
- CMEEC
- Clean Energy (CE)
- Air & Gas Technologies (AGT)
- Southern Connecticut Gas Company
- Connecticut Natural Gas Corporation
- Bonner Electric, Inc.
- Manchester Honda
- Matthews Bus

Supporting Organizations
- Connecticut DECD
- Connecticut DEP
Training

• Establish requirements with local officials for each site location.

• Design, develop, and deliver AFV operational safety and fueling infrastructure safety training to:
  • 1st Responders,
  • Mechanics/automotive technicians,
  • Operators, and,
  • Other operational and safety personnel.
Education, Outreach, Marketing

Develop and implement education, outreach and marketing programs for fleet and public consumers.

• Utilize target audience approach to Educate Fleet Operators and Consumers on the advantages & availability of alternative fuels & vehicles.

• Showcase AFVs and available fueling infrastructures to fleets and consumers in the state through participation in this annual event – CT Clean Cities Expo.

• Use information and data gathered during the project to build and convey a strong business case for Alternative Fuels and AFVs.
Target Audiences

- Fleet operators
- City/County/State government officials
- First responders
- Key industry & civic stakeholders
- Consumers
- OEMs
- Utilities
- Policy makers
- Code officials

- Engineers
- Maintenance technicians
- Educators
- Students
- Consumers & future consumers
- Media
  - Local
  - Regional
  - National
Campaign Firsts

• Enviro Express will be the 1st LNG station east of the Mississippi

• Add significant public access to Alt Fuels along I-95 and I-91 — creating an alternative fuels “highway” with 4 publicly accessible CNG Stations

• Reach > 2.1 million residents of Connecticut with traditional outreach, the largest single opportunity in the history of the Clean Cities Coalitions in Connecticut
Market Transformation

• Create demand for alternative fuel vehicles & alternative fuels,
• Dispel rumors and inaccurate information about alternative fuels,
• Communicate benefits of alternative fuels to key decision makers in fleets, promoting additional transitions to alternative fuels,
• Erect an alternative energy highway in major metropolitan area corridors across the state,
• Increase the level of sustainability in transportation fuels,
• Add to the displacement of petroleum-based fuels and their associated emissions,
• Improve energy independence, and,
• Create jobs.
Events

- 10 grand-opening celebrations over the next 2 years;
- Multiple outreach events in various locations across the state, aimed at reaching Fleets, Policy Makers, Consumers, Teachers, Students, and Emergency Personnel;
- At least 6 training classes;
- Multiple press conference and open-house opportunities over the next 4 years; and
Thank you for the opportunity to share information about this exciting alternative fuels project in Connecticut!

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Coming 19 February…Project Web Site

www.ct-futurefuels.com