

# Clean Cities 2009 Petroleum Displacement Awards (ARRA & non-ARRA)

Mike Scarpino  
U.S. Department of Energy  
National Energy Technology Laboratory

May 12, 2011

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

Project ID: TI004

- **TIMELINE**

- Start: December 2009
- End: May 2014
- 35% Complete

- **BUDGET**

- Total Project Funding for **25** Projects:
  - \$804,571,404**
    - DOE: \$298,500,000
    - Cost Share: \$506,071,404
- Fully Funded w/ ARRA funds
- \$68,586,599 spent (23%)  
(as of 4/11/11)

- **BARRIERS ADDRESSED**

- Availability of Alternative Fuel Vehicles
- Availability of Alternative Fuel Infrastructure
- Consumer Reluctance to Purchase New Technologies
- Lack of Technical Experience with New Fuels and Vehicle Technologies

- **PARTNERS**

- Clean Cities Coalitions
- State Energy Offices
- Other State Governments/ Agencies
- Local Governments/ Organizations

## OBJECTIVES:

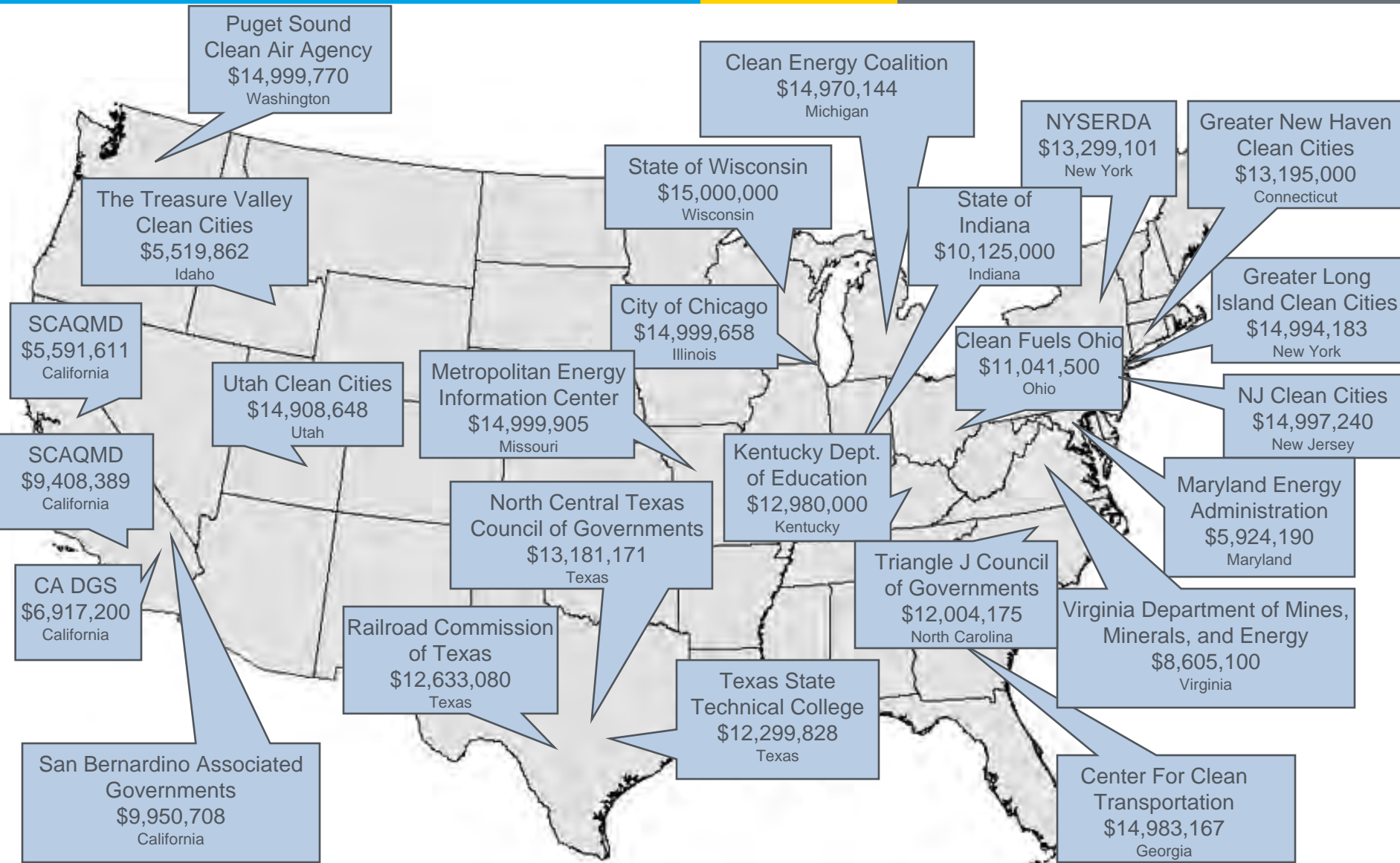
- To **increase the use of alternative fueled vehicles and advanced technology vehicles** as a means to reduce U.S. dependence on imported petroleum, increase fuel economy and improve emissions.
- To **install infrastructure** that supports alternative fuel and advanced technology vehicles.
- To ensure that vehicles capable of using alternative fuel do so to the greatest extent possible.
- To **provide appropriate training for individuals associated with this project and in the larger community about the benefits of alternative fuel and advanced technology vehicles** and provide them with strategies that will help them to maximize these benefits.
- To **collect data** on the success of the project through collection of vehicle, infrastructure and training information.

## REQUIREMENTS:

- Implement the requirements of EPACT 2005, Section 721
- Applicants limited to State or local government or a metropolitan transportation authority or any combination of these AND a designated Clean Cities Coalition
- Geographically dispersed project awards
- No more than 30 projects
- Provide appropriate education and training for project participants and in the larger community about project benefits
- Collect data on the success of the project through collection of vehicle, infrastructure and training information
- “Shovel Ready” projects
- ARRA focused on creation and/or retainment of jobs

# APPROACH

## Clean Cities Recovery Act Awards Geographical Distribution



### **Task 1: Project Management and Planning**

- Subtask 1.1 Conduct a project kick-off meeting with all partners to plan and coordinate all project activities. This meeting will include representatives from the partner organizations and will include finalization of the project schedule and coordination of all project-related activities.
- Subtask 1.2 Finalize sub-recipient agreements with project partners.
- Subtask 1.3 Revise and update Project Management Plan.

### **Task 2: Vehicle Deployment**

- Subtask 2.1: Complete Vehicle NEPA process
- Subtask 2.2: Complete actions necessary to enable vehicle purchase or conversions. This could include, but is not limited to drafting specifications, issuing Requests for Quotes (RFQs), Evaluating Quotes, Selecting Vehicle Vendor, Negotiating Agreements with Vendor, etc.
- Subtask 2.3: Purchase and Take Delivery of Vehicles and/or convert vehicles.
- Subtask 2.4: Application of appropriate signage to vehicles stating that they are part of a US DOE Clean Cities Award and are powered by an alternative fuel and/or advanced technology.
- Subtask 2.5: Deployment of vehicles

### **Task 3: Infrastructure Development**

- Subtask 3.1: Complete Infrastructure NEPA process and obtain necessary permits
- Subtask 3.2: Complete actions necessary to begin construction and/or upgrades. This could include, but is not limited to drafting specifications, issuing Requests for Quotes (RFQs), Evaluating Quotes, Selecting Infrastructure/Fuel Hardware Vendor, Negotiating Agreements with Vendor, etc.
- Subtask 3.3: Installation/Development of Fueling Infrastructure
- Subtask 3.4: Application of appropriate signage to fueling infrastructure including all required federal, state and local fuel dispensing information including, but not limited to fuel contents, safety precautions, etc.
- Subtask 3.5: Application of appropriate signage to fueling infrastructure stating that it is part of a US DOE Clean Cities Award.
- Subtask 3.6: Infrastructure Operational

### **Task 4: Training Development & Delivery**

- Subtask 4.1: Identify specific training needs of vehicle operators, vehicle technicians, vehicle staff, refueling site supervisors, refueling site staff, individuals who will use refueling infrastructure and others as appropriate.
- Subtask 4.2: Develop training to address needs identified in subtask 4.1.
- Subtask 4.3: Provide training to appropriate audiences.
- Subtask 4.4: Perform on-going identification of additional training needs and hold follow-up training, as necessary.

### **Task 5: Outreach/Marketing**

- Subtask 5.1: Provide a plan for project marketing/outreach that informs the public on the progress of this project.
- Subtask 5.2: Execution of project marketing/outreach plan.
- Subtask 5.3: Documentation of all marketing/outreach conducted.



### **Task 6: Documentation & Reporting**

- Subtask 6.1: Monitor performance of vehicles for a period of 24 months after deployment. Documentation to include ridership, fuel usage, fuel costs, emissions, operation record, operation schedule, maintenance record, maintenance schedule, lessons learned, etc.
- Subtask 6.2: Monitor performance of infrastructure for a period of 24 months after deployment. Documentation to include quantity of fuel dispensed, average fuel price, etc.
- Subtask 6.3: Documentation of all training provided, attendance at training session(s) and evaluation of training success. Provide DOE with copies of any and all training provided.
- Subtask 6.4: Documentation of all marketing/outreach conducted.
- Subtask 6.5: Documentation of Clean Cities involvement in project.
- Subtask 6.6: Annual reporting of fleet data to local Clean Cities coalition for inclusion in the DOE Annual Survey.
- Subtask 6.7: Participate in DOE- or Industry-sponsored merit reviews, peer exchanges, conferences, etc. to provide project updates/lessons learned to ensure that the information and knowledge gained by project participants is shared.

- **Year 1**
  - Finalize all sub-recipient agreements/contracts
  - All Fueling Infrastructure Permits & NEPA EQs submitted and approved
  - Majority of Vehicles Ordered
  - All Fueling Infrastructure Equipment Ordered
  - Initial Vehicles Received & Deployed
  - Fueling Infrastructure Site Work started
  - Initiate Training Programs
  - Initiate Outreach/Marketing Programs
  
- **Year 2**
  - Complete Vehicle Deployment
  - Fueling Infrastructure Site Work Completed & Operational
  - Continue Training Programs
  - Continue Outreach/Marketing Programs
  
- **Years 3 & 4**
  - Complete Training Programs
  - Complete Outreach/Marketing Programs
  - Complete Data Collection

# ACCOMPLISHMENTS & PROGRESS

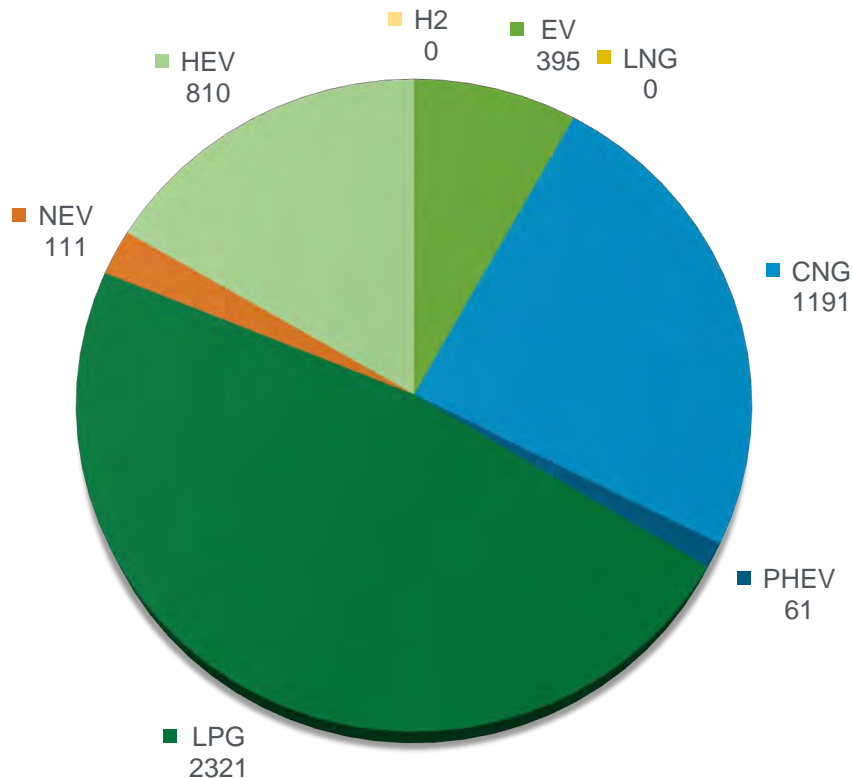
## Planned Vehicle Distribution by Fuel/Technology

(based on Recipient Reporting from period ending 12/31/10)



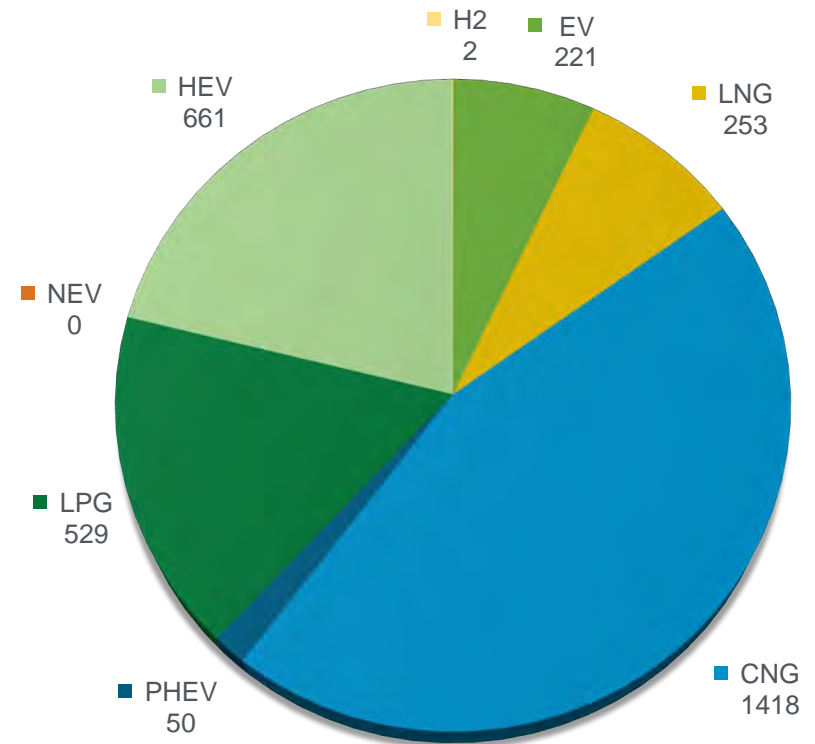
### LDV Distribution

4,889 vehicles



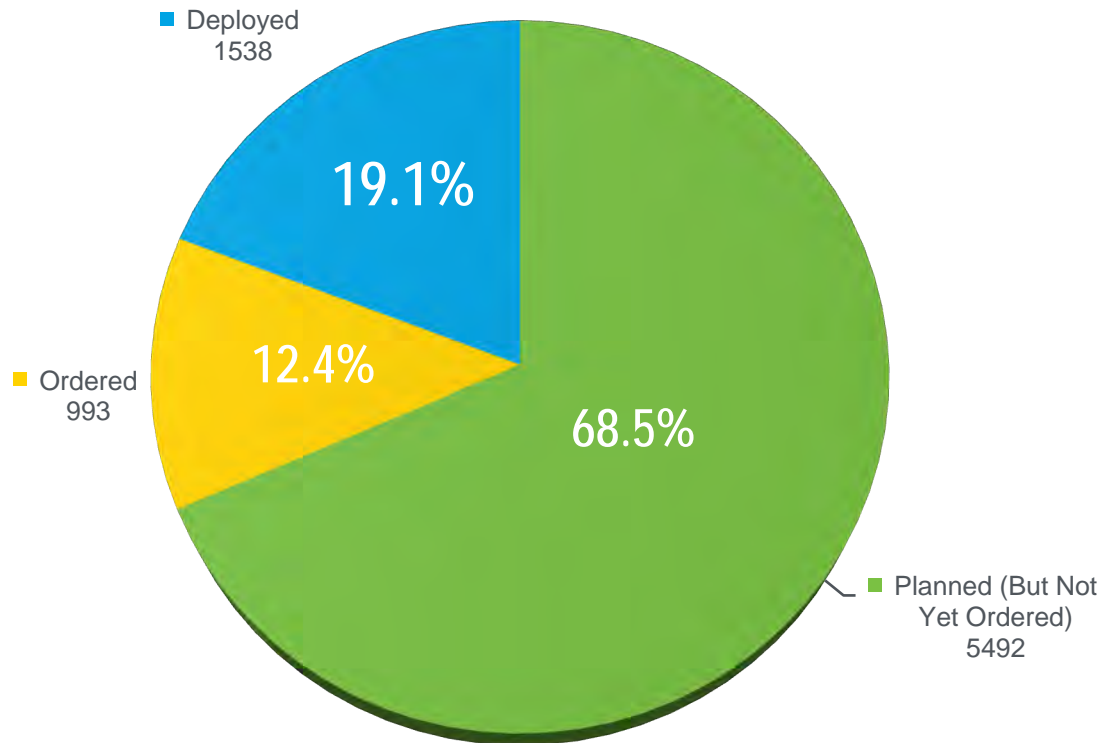
### MDV/HDV Distribution

3,134 vehicles



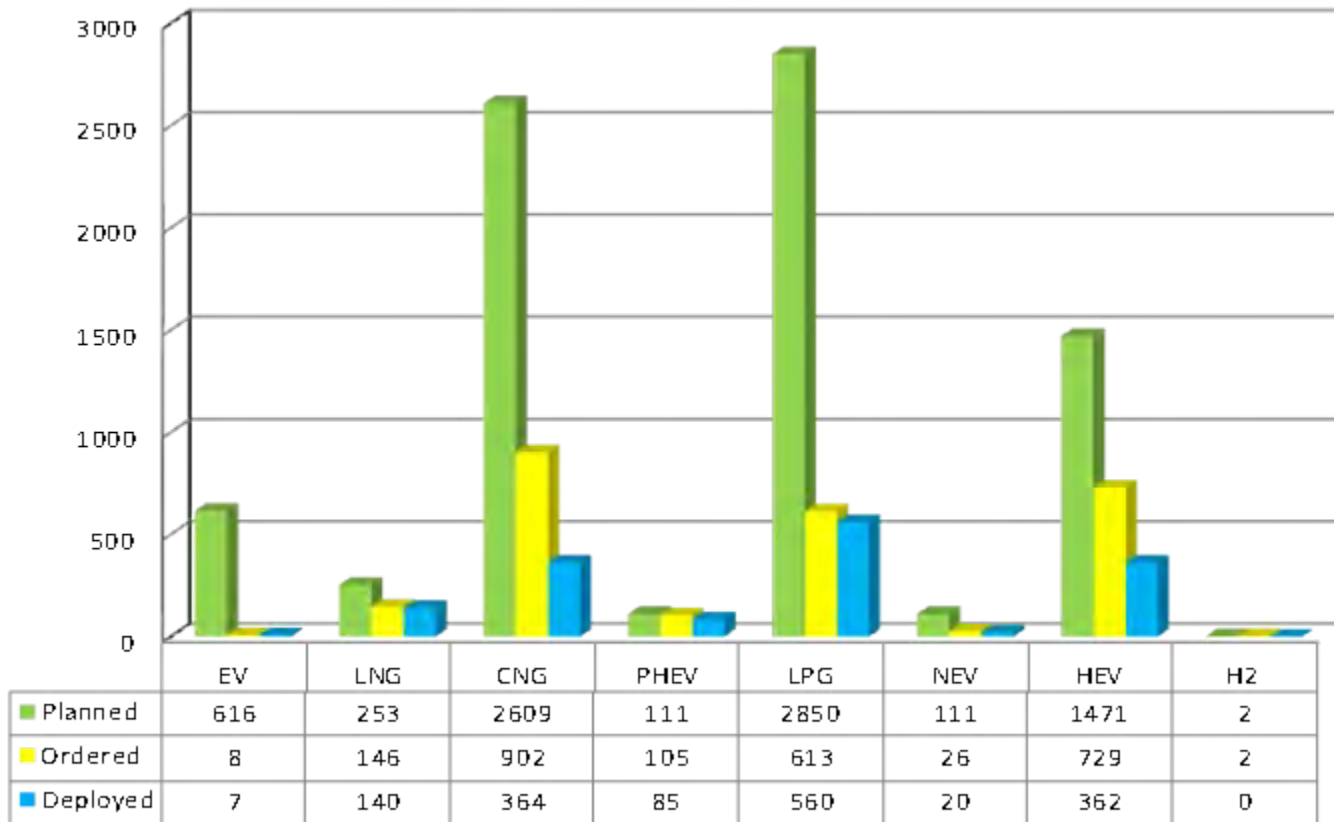
8,023 Total Planned Vehicle Orders

### Clean Cities ARRA Projects: Vehicle Status



8,023 Total Planned Vehicle Orders

### Clean Cities ARRA Projects: Total Vehicle Status by Type

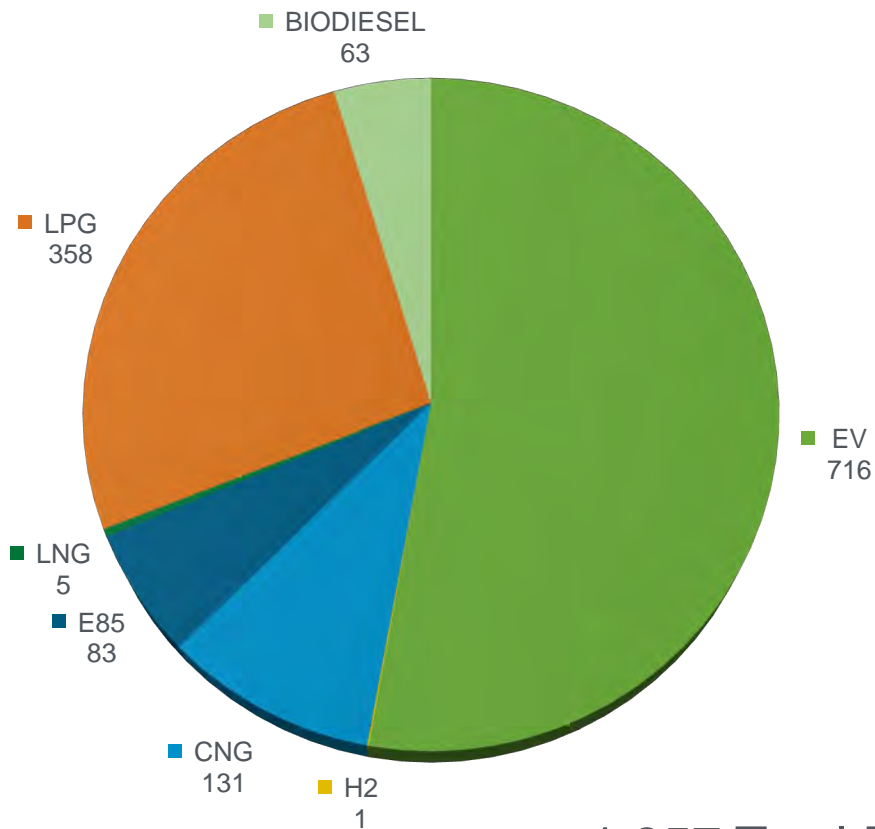


8,032 Total Planned Vehicle Orders

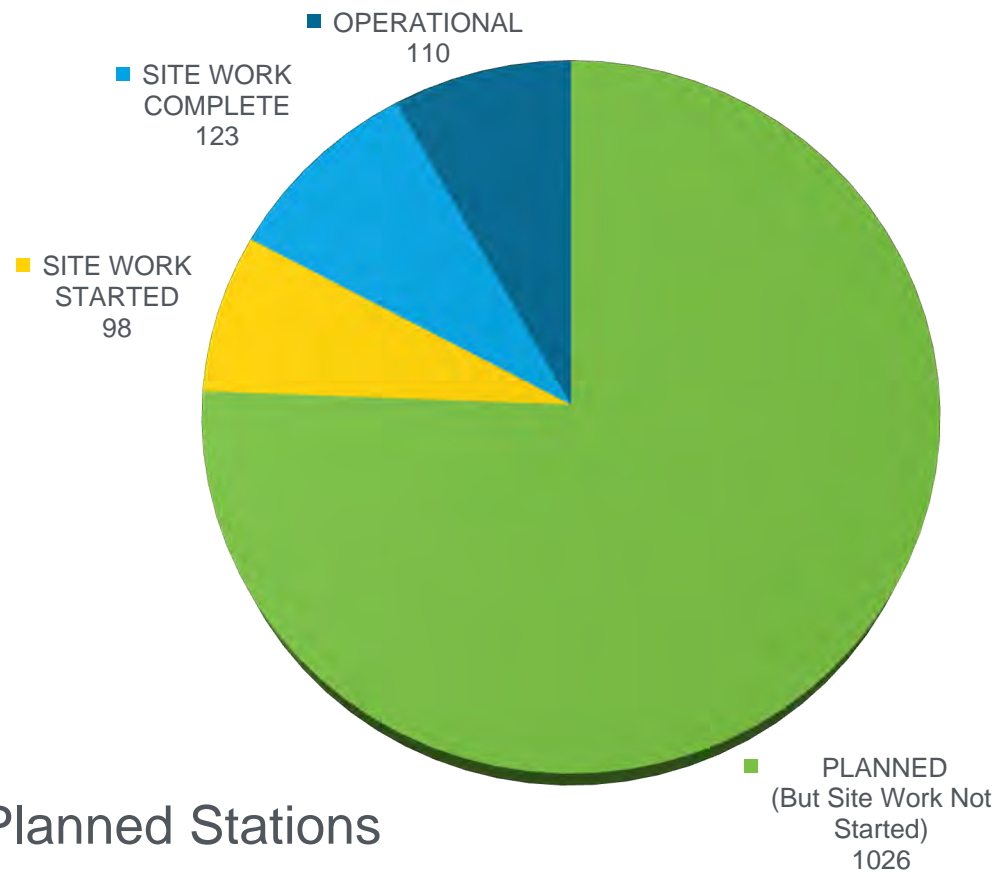


# Clean Cities ARRA Projects: Infrastructure

Fuel Type



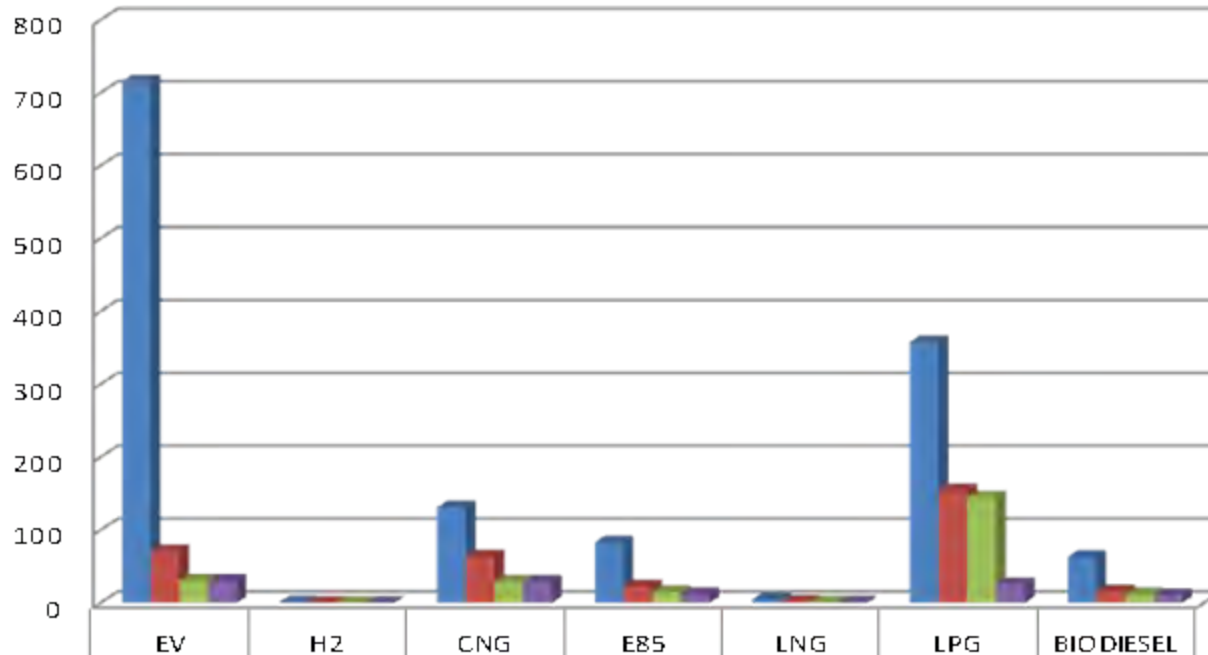
Station Status



1,357 Total Planned Stations



### Total Fueling Infrastructure Status by Type



	EV	H2	CNG	E85	LNG	LPG	BIODIESEL
Planning	716	1	131	83	5	358	63
Site Work Started	71	0	64	23	2	155	16
Site Work Completed	31	0	29	15	1	145	12
Operational	31	0	29	12	1	26	11

1,357 Total Planned Stations

# COLLABORATIONS

## ARRA Prime Recipient Organizations



- **Clean Cities Coalitions**
  - Clean Energy Coalition (Ann Arbor)
  - New Jersey Clean Cities
  - Greater Long Island Clean Cities
  - Utah Clean Cities
  - Clean Fuels Ohio
  - Greater New Haven Clean Cities
  - Treasure Valley Clean Cities
  - Center For Clean Transportation (Atlanta)
- **Other State Agencies/Institutions**
  - Kentucky Dept. of Education
  - Texas State Technical College
  - California Dept. of General Services
  - Railroad Commission of Texas
- **State Energy Offices**
  - New York
  - Virginia
  - Indiana
  - Wisconsin
  - Maryland
- **Local Governments/Agencies**
  - Puget Sound Clean Air Agency
  - Triangle J COG
  - South Coast AQMD
  - San Bernardino Assoc of Govs
  - City of Chicago
  - No Central TX COG
  - Metropolitan Energy Information Center



- National Fleets
  - United Parcel Service
  - Sysco
  - Coca Cola
  - Verizon
  - Waste Management
  - Frito Lay
  - Ryder
  - Fed Ex
  - Allied Waste
  - Canteen Vending
- Other National Companies
  - Staples
  - ConnocoPhillips
  - Marriott
  - Hilton
  - The Parking Spot
- Industry Partners
  - Clean Energy
  - Blossman Gas
  - Clean FUEL USA
  - Gas Technology Institute
  - Propel
  - National Alt Fuels Training Consortium
  - Propane Education & Research Council
  - Daimler Trucks North America
  - Bluebird
  - Freightliner Trucks
  - CALSTART
- Utilities
  - Questar Gas
  - Peoples Gas
  - National Grid
  - Citizens Energy
  - DTE Energy
  - Commonwealth Edison

- Regional/Local Fleets/Companies

- Atlantic City Jitney Association
- Meijer
- Rumpke
- Enviro Express
- Manhattan Beer Distributors
- Westchester Ambulette
- Central Jersey Waste

- Colleges/Universities

- University of Missouri KC
- University of Michigan
- University of Wisconsin-Madison
- Washington State University
- SUNY-Albany
- James Madison University
- University of Utah

- State/Local Governments/Agencies

- California Energy Commission
- Dallas-Ft. Worth Int'l Airport
- City of Milwaukee
- Seattle-Tacoma Int'l Airport
- Indiana DOT
- Ann Arbor Transportation Authority
- Wisconsin DOT
- LA Unified School District
- Nassau & Suffolk Counties (NY)
- Hartsfield-Jackson Atlanta Int'l Airport



## TIMELINE

- Start: September 2009
- End: December 2012
  - 25% Complete

## BUDGET

- Total Project Funding for **23** Projects:
  - \$31,509,544**
    - DOE: \$13,656,158
    - Cost Share: \$17,853,386
- Fully Funded w/ FY09 & FY10

## BARRIERS ADDRESSED

- Availability of Alternative Fuel Vehicles
- Availability of Alternative Fuel Infrastructure
- Consumer Reluctance to Purchase New Technologies
- Lack of Technical Experience with New Fuels and Vehicle Technologies

## PARTNERS

- Clean Cities Coalitions
- State Energy Offices
- Other State Governments/ Agencies
- Local Governments/ Organizations
- Private Companies
- Industry Partners

The objective of this funding opportunity announcement was to decrease the nation's dependence on petroleum in the transportation sector through providing financial support for commercial deployment projects in the following areas:

- Refueling Infrastructure for E85 and Other Alternative Fuels
- Incremental Cost of AFVs
- Education and Outreach Workshops for Petroleum Reduction Fuels and Technologies

## **Area of Interest 1: Refueling Infrastructure for Alternative Fuels**

- Subtopic Area 1A: Biofuel Retail Infrastructure Program
- Subtopic Area 1B: Terminal Blending & Other Alt Fuel Infrastructure
- Estimated Funding Available: \$1.3M-\$2.6M (FY09 & FY10)
- Expected Number of Awards: 3-10

## **Area of Interest 2: Incremental Cost of Dedicated Alt Fuel Vehicles**

- Only on-road, highway certified vehicles that operate exclusively on alternative fuels are eligible
- Estimated Funding Available: \$800,000-\$1.6M (FY09 & FY10)
- Expected Number of Awards: 4-8

## **Area of Interest 3: Education and Outreach Workshops for Petroleum Reduction Fuels and Technologies**

- Subtopic Areas for Ethanol (3A), Biodiesel (3B), Natural Gas and Propane (3C), and Fuel Economy and Idle Reduction (3D)
- Estimated Funding Available: \$900,000-\$1.8M (FY09 & FY10)
- Expected Number of Awards: 1-4

## 23 Projects Awarded

- \$31.5M in Cost-Shared Projects (\$13.6M DOE & \$17.9M cost share)
- Funding awarded in FY09 & FY10
- AREA OF INTEREST #1: Refueling Infrastructure for Alternative Fuels  
13 projects selected to fund the development of 150+ fueling sites
  - 95 E85 sites
  - 25 B20 sites
  - 16 LPG sites
  - 7 CNG sites
  - 1 LNG site
  - 7 Biodiesel Terminal Blending sites
- AREA OF INTEREST #2: Incremental Cost of AFVs  
7 projects selected to fund the deployment of 476 alternative fuel vehicles
  - 261 CNG vehicles
  - 215 LPG vehicles

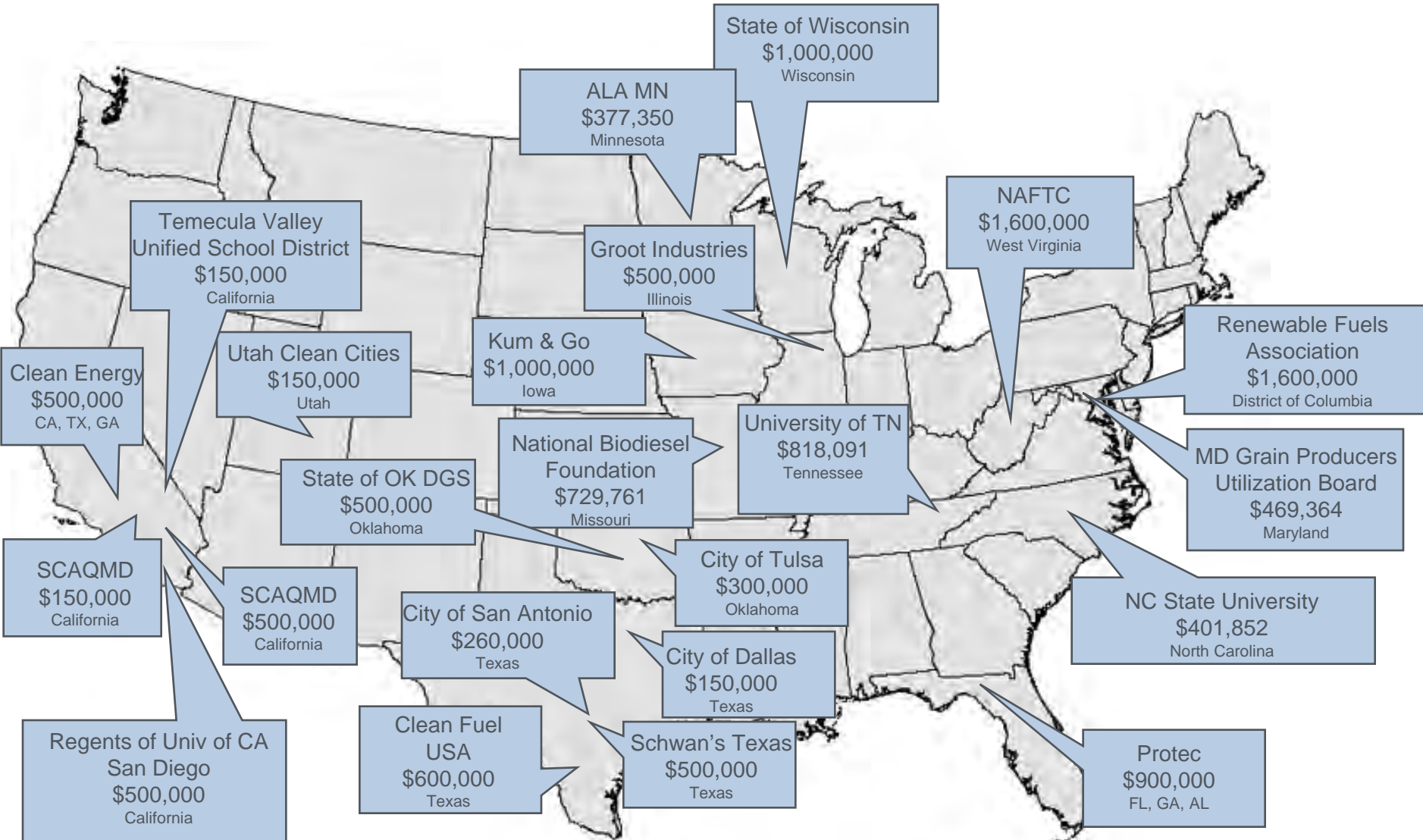
- AREA OF INTEREST #3: Education and Outreach Workshops for Petroleum Reduction Fuels and Technologies

3 projects selected to raise awareness and foster a greater understanding of alternative fuels and advanced technology vehicles through a targeted education and outreach effort

- 58 workshops will be held at selected locations through September 2011
- In-depth training sessions to be provided to Clean Cities Coordinators at Clean Cities Peer Exchange Meetings
  - First Responder Safety Training (NAFTC)
  - Media Training (RFA)
- Curriculum and other education/outreach materials to be refined on an on-going basis to ensure accuracy and incorporate new information as it becomes available
- Additional Clean Cities University courses to be constructed using information developed as part of these projects

# APPROACH

## NON-ARRA: FY09 CCities Petroleum Displacement Projects (AOI#1-3)





# ACCOMPLISHMENTS & PROGRESS

NON-ARRA: FY09 CCities Petroleum Displacement Projects (AOI#1-3)



- **Refueling Stations Completed**
  - 52 E85 Stations (55%)
  - 3 B20 Stations (12%)
  - 1 CNG Stations (14%)
  - 1 LPG Stations (6%)
- **Total Gallons of Alt Fuel Dispensed from Vehicles & Stations**
  - 2,429,458 gallons of E-85
  - 579,120 gallons of B100
  - 384,593 GGEs of CNG
  - 317,305 gallons of LPG
- **Vehicles Deployed**
  - 130 CNG (44%)
  - 96 LPG (45%)
- **Education & Outreach Workshops**
  - 41 workshops completed (71%)
  - 1603 workshop attendees
  - Recipients are also participating in activities with individual coalitions, providing course content for CCU and contributing to monthly program-level webinars for coordinators and interns, among other specialized tasks.



- **Kum & Go** – includes Iowa Department of Natural Resources, Iowa Corn Growers Association, Iowa Renewable Fuels Association, National Ethanol Vehicle Coalition, and the Iowa Farm Bureau
- **Maryland Grain Producers Utilization Board** – includes PMG, Mid-Atlantic Petroleum Properties, LLC, Phillips, and Montgomery County
- **University of Tennessee** - includes Clean Energy Coalition, Ann Arbor Clean Cities, Clean Fuels Ohio, Kentucky Clean Fuel Coalition, East Tennessee Clean Fuels Coalition, Clean Cities-Atlanta, Middle Georgia Clean Cities, Florida Solar Energy Center, Space Coast (FL) Clean Cities, and the Gold Coast (FL) Clean Cities Coalition.
- **American Lung Association**- includes the Minnesota Clean Air Choice Team, the Twin Cities Clean Cities Coalition, Kwik Trip, Holiday Companies, the Farmers Union Oil Company, and the Minnesota Corn Growers Association.
- **Protec Fuel Management**- includes the Renewable Fuel Association, Growth Energy, Testing LLC, General Motors, National Ethanol Vehicle Coalition, NASA, the U.S. Postal Service, and Enterprise Rent-A-Car.
- **State of Wisconsin**- includes the Wisconsin Retail Gas Stations/Fuel Distributors, Innovation Fuels Tanco Milwaukee and CHS, Inc.
- **National Biodiesel Foundation**– includes Amerigreen, Intercontinental Fuels, GrowMark, Magellan, Westmore Fuels, and Guttman Oil.



- **City of Dallas**— includes Clean Energy.
- **City of Tulsa**- includes the Indian Nations Council of Governments, Oklahoma Department of Central Services, Oklahoma Natural Gas, and Tulsa Gas Technologies.
- **Utah Clean Cities Coalition**- includes Questar Gas Company.
- **Temecula Valley Unified School District**- includes Gas Equipment Systems, Inc. and the Southern California Gas Company.
- **CleanFUEL USA** - includes ConocoPhillips Oil Company, the Propane Education & Research Council, Atlanta Clean Cities, Chicago Area Clean Cities, Middle Georgia Clean Cities, South Shore Clean Cities, and Denver Metro Clean Cities.
- **South Coast Air Quality Management District**— includes the Los Angeles/Ontario International Airport.
- **Schwan's Home Service, Inc**— includes Bi-Phase Technologies, LLC and Monroe Truck Equipment
- **Clean Energy**- includes transportation partners that serve airports in Atlanta, Austin, Dallas, Houston, San Antonio, Santa Ana, and Los Angeles.



- **Groot Industries**— includes Mack, McNeilus, and Cummins.
- **South Coast Air Quality Management District**— includes CNG taxicabs and shuttle vans serving the California South Coast Basin.
- **Regents of the University of California-San Diego**- includes the San Diego Clean Cities Coalition.
- **State of Oklahoma Department of Central Services**
- **City of San Antonio**- includes the Alamo Area Clean Cities Coalition, the Texas Transportation Institute, and the Alamo Area Council of Governments.
- **North Carolina State University**- includes Wake Technical Community College.
- **West Virginia University Research Corporation**— includes the National Alternative Fuels Training Consortium.
- **Alternative Fuel Trade Alliance**— includes the Renewable Fuels Association, the National Biodiesel Foundation, the Clean Vehicle Education Foundation, and the Propane Education & Research Council.

- Major Project Activities for the Next Year
  - All Vehicles Ordered
  - All Fueling Infrastructure Site Work started & Equipment Ordered
  - Majority of Vehicles Received & Deployed
  - Majority of Fueling Infrastructure Site Work completed & operational
  - Continue with on-going Training Programs
  - Continue with on-going Outreach/Marketing Programs
- Enhanced Project Monitoring by DOE Project Managers
- Technical Assistance available from Clean Cities Program

- The Clean Cities Petroleum Reduction Technology Projects have commenced and are moving forward to meet aggressive progress and spending plans
  - **Relevance:**
    - **Increase the deployment of alternative fueled vehicles and advanced technology vehicles** as a means to reduce U.S. dependence on imported petroleum, increase fuel economy and improve emissions.
    - **Install infrastructure** that supports alternative fuel and advanced technology vehicles.
    - **Provide appropriate training for individuals associated with this project and in the larger community about the benefits of alternative fuel and advanced technology vehicles** and provide them with strategies that will help them to maximize these benefits.
  - **Approach:** Project Planning, Vehicle Deployment, Infrastructure Development, Training & Outreach/Marketing and Data Collection activities per the approved Project Management Plan
  - **Project Accomplishments/Progress:**
    - All Vehicles ordered during year 1-2 of projects
    - All Vehicles Deployed during year 2-3 of projects
    - All Fueling Infrastructure sites completed and operational during year 2-3 of projects
    - Training & Outreach/Marketing efforts initiated during year 1 and completed during year 3
  - **Collaborations:** Clean Cities Coalition leading or partnering with State and Local governments/agencies/organizations and numerous other private & public partners
- Efforts will continue through May 2014