<table>
<thead>
<tr>
<th>P.I.</th>
<th>Sean Reed, executive director</th>
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<tbody>
<tr>
<td>Presenters:</td>
<td>Lisa Warshaw, project manager</td>
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<tr>
<td>Organization:</td>
<td>Clean Energy Coalition</td>
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<tr>
<td>Date:</td>
<td>May 12, 2011</td>
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<tr>
<td>Project ID:</td>
<td>ARRAVT055</td>
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This presentation does not contain any proprietary, confidential, or otherwise restricted information.
OVERVIEW

Timeline
Start date: December 21, 2009
End date: December 31, 2013
Percent complete: 30%

Budget
Total project funding: $36,425,437*
Federal share: $14,970,144
Cost share: $23,018,055*
*As of March 8, 2011

Partners
• Implementation partners: Michigan Department of Labor & Economic Growth’s Bureau of Energy Systems & Greater Lansing Area Clean Cities Coalition
• Sub-grantees: Corporations, universities municipalities, & public utilities

Barriers & Risks
• Lack of fuel production capacity and distribution infrastructure
• Due to limited production, AFV’s tend to be more cost prohibitive
• Declining capital budgets amongst project partners
Objective

The purpose of this project is to: (1) increase the use of alternative fuel vehicles and advanced technology vehicles; (2) build infrastructure to support these vehicles; (3) train individuals associated with the projects; and (4) collect relevant data on the projects.

Vehicle Technologies Program Goals

A. Enhance energy efficiency and productivity
B. Bring clean, reliable, and affordable technologies to the marketplace
C. Make a difference in the everyday lives of Americans by enhancing their energy choices and quality of life

Project Relevance

A. Deploy more than 500 vehicles on Michigan’s roads, all of which have significant environmental benefits over gasoline and diesel
B. The alternative fuel vehicles will be supported by more than 60 fuel and/or charging stations to ensure continued investment into cleaner vehicles
ARRA Goals
A. Jump start our economy
B. Create or save millions of jobs
C. Address long-neglected challenges so our country can thrive in the 21st century

Project Relevance
A. This project represents a $5.8M investment into Michigan’s transportation fueling infrastructure in 2010 & 2011.
B. Vehicles and conversions are supplied by Eaton, Roush, and other automotive companies based in Michigan or the Midwest, keeping automotive industry employees working in Michigan.
C. These alternative fuel pumps and EV charging stations support a broad transition to CNG, propane, and electricity as transportation fuels, allowing the U.S. to remain mobile without foreign oil.
VEHICLE TECHNOLOGY - RELEVANCE

Vehicle Technologies Goals
A. Enhance energy efficiency and productivity
B. Bring clean, reliable, and affordable technologies to the marketplace
C. Make a difference in the everyday lives of Americans by enhancing their energy choices and quality of life

Project Relevance
A. Deploy more than 500 vehicles on Michigan’s roads, all of which have significant environmental benefits over gasoline and diesel
B. The alternative fuel vehicles will be supported by more than 60 fuel and/or charging stations to ensure continued investment into cleaner vehicles
Technical Barriers

• Changing priorities/budgets among project partners
• Technical problems/set-backs among technology suppliers
• Failure to achieve EPA/CARB certifications for new model year vehicles

Technical Approach and Addressing Barriers

• Deadlines provided to project partners
• Releasing application solicitations for new project partners when necessary
• Scoring matrix for new partners with go/no-go decisions
• Leveraging DOE Technical Response Service to find qualified technology providers
• Ensuring environmental safety standards are met via NEPA documentation
## APPROACH - MILESTONES

<table>
<thead>
<tr>
<th>Planned Milestones</th>
<th>Status</th>
</tr>
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<tbody>
<tr>
<td>Distribute &amp; Secure Project Sub-Grantee Contracts</td>
<td>Successfully secured contracts with 11 project partners</td>
</tr>
<tr>
<td>Create Marketing &amp; Identity Plan</td>
<td>Marketing/PR firm chosen; press coverage in several publications including TIME Magazine</td>
</tr>
<tr>
<td>Complete Signage for Vehicles &amp; Infrastructure</td>
<td>Signage developed; more than 130 vehicles tagged</td>
</tr>
<tr>
<td>Provide Training for Fleet &amp; Infrastructure Partners</td>
<td>Two training webinars held in 2010</td>
</tr>
<tr>
<td>Host Informational Events</td>
<td>Three events held in 2010; NAFA Alternative Fuels event held on March 24, 2011</td>
</tr>
<tr>
<td>Successfully Purchase all 2010 Project Vehicles &amp; Infrastructure</td>
<td>As of December 2010, 161 vehicles received or deployed; one station operational</td>
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Addressing Project Change

- Approval for project changes/contracts terminated for some
- Learned and communicated barriers to DOE
- Reviewing supporting documentation, EPA and CARB certifications and NEPA EQs
- Selection process for new partners includes scoring for maximum petroleum reduction and project readiness
- Go/no-go decisions include:
  - Eligibility of technology
  - EPA/CARB certification
  - Funding eligibility (incremental and maximum allowable amount)
  - Vehicles and/or infrastructure to be purchased/deployed before December 2011
  - Meet or exceed environmental safety standards
ACCOMPLISHMENTS/PROGRESS

City of Ann Arbor
Deployed four hydraulic hybrid refuse trucks and one plug-in electric hybrid bucket truck

Media Coverage
Covered in TIME Magazine (September 20, 2010 Issue), USA Today, and Reuters among other publications

Results
Five vehicles had logged approximately 4,000 collective miles at the end of 2010

Pictured left to right: Tom Gibbons, City of Ann Arbor Fleet Manager; Lisa Warshaw, Clean Energy Coalition Project; and John Kargul, U.S. Environmental Protection Agency Director of Technology Transfer
ACCOMPLISHMENTS/PROGRESS

Hybrid Vehicles
• Five medium/heavy duty vehicles deployed in 2010
• 30 light-duty hybrids to be deployed in 2011
• Project partners include the City of Ann Arbor and the University of Michigan

Electric Charging Stations
• Two solar energy supported, centralized EV charging centers (in planning phase)
• Project partners include Western Michigan University and the Ann Arbor Downtown Development Authority

Four heavy-duty, hydraulic hybrid trucks and one medium-duty plug-in electric vehicle logged approximately 4,000 collective miles by the end of 2010.
ACCOMPLISHMENTS/PROGRESS

CNG Projects
- 90 Ford E350 service vans converted and deployed in 2010
- One infrastructure site open in 2010; 11 stations broke ground; three stations in planning phase
- Project partners include DTE Energy/MichCon Fuels and UBCR, LLC.

Propane Projects
- 72 propane vehicles ordered, received, or deployed in 2010
- One infrastructure site broke ground in 2010
- Project partners include Schwan’s Home Service, Frito-Lay, Metro Cars, and Wright & Filippis

Deployed 90 CNG vehicles throughout Michigan displacing 3,400 GGEs of petroleum.
ACCOMPLISHMENTS/PROGRESS

Job Creation

- Consistently created ~two full time jobs each quarter
- First quarter 2011 will reflect a significant increase in jobs created
- As the project continues to progress, we will see job creation numbers increase due to a higher volume of vehicle conversions and infrastructure development
Previous Challenges

- Some difficulty securing sub-grantee agreements
- Unobligated funding due to dismissed project partners
- Difficulty communicating and/or accepting contract terms and conditions
- Completing NEPA EQs
- Trouble finding a way to collect mileage and fuel use for reporting purposes

Overcoming Barriers

- Providing contract execution deadlines/dismissing problematic project partners
- Quickly releasing application solicitations to attract new projects or partners/identifying good projects that meet the defined scope of work
- Created FAQs document addressing contract terms and conditions
- Working with Key Logic for NEPA EQ assistance
- Use “shared” Google Docs to collect project partner reporting data
COLLABORATION

Current Sub-Grantees

• Ann Arbor Downtown Development Authority (government)
• City of Ann Arbor
• DTE Energy/MichCon Fuels (utility)
• FedEx Ground (corporation)
• Frito-Lay (corporation)
• Great Lakes Transportation, LLC (private company)
• Schwan’s Home Service (corporation)
• UBCR, LLC (private company)
• University of Michigan
• Western Michigan University
• Wright & Filippis (private company)

Implementation Partners

• Greater Lansing Clean Cities Coalition (education and training partner)

Key Resources

Quarterly conference calls among the ~25 Clean Cities ARRA projects are crucial. DOE leads calls and encourages information and resource sharing.
FUTURE WORK - 2011

- Obligate remaining un-obligated funding (due to reduced budgets, cancelled plans, etc.)
- Continue to refine data collection reporting process
- Purchase and deploy all vehicles by December 2011
- Install all infrastructure by December 2011
- Hold Informational event for the Michigan chapter of the National Association of Fleet Administrators on March 24, 2011
- Host first responder or other technical training workshop in Summer 2011
- Host three community-based regional educational meetings in 2011
SUMMARY

Project Goals
A. Deploy more than 500 vehicles on Michigan’s roads, all of which have significant environmental benefits over gasoline and diesel
B. The alternative fuel vehicles will be supported by more than 60 fuel and/or charging stations to ensure continued investment into cleaner vehicles

Project Status
A. Deployed 90 CNG vehicles throughout Michigan displacing 3,400 GGEs of petroleum in 2010
B. Four heavy-duty, hydraulic hybrid trucks and one medium-duty plug-in electric vehicle logged approximately 4,000 collective miles by the end of 2010
C. 169 vehicles were either ordered, received, or deployed; one infrastructure site was, 12 infrastructure sites were under construction by the end of 2010
D. 2011 work is focused on continued vehicle deployment and infrastructure development