Southeast Propane Autogas Development Program
VA Department of Mines, Minerals and Energy
Peter Denbigh
Virginia Clean Cities at James Madison University

Project ID #ARRAVT065
Prepared March 2012
Presented May 16, 2012

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

Timeline

- December 7, 2009
- December 6, 2013
- Less than 50% Complete

Barriers and Risks

Barriers

- Lack of familiarity with propane autogas as an alternative fuel
- Limited EPA certifications

Top Risks

- Quality Control
- Reporting compliance
- Improper training and education
- Conversion pace

Budget

- Total project funding
  - $8,605,100 grant monies
  - $21,346,311 cost-share
- About $30,000,000 total project value

Partners

- Project Lead: DMME, Division of Energy
- Project Manager: Virginia Clean Cities at James Madison University
- Strategic Partners:
  - Alliance AutoGas
  - Municipalities & private transportation companies
  - Clean Cities Coalitions
  - Formation (formerly MSM Communications)

About $30,000,000 total project value
Project Objectives

• Convert over 1,200 vehicles from gasoline to propane autogas in order to reduce U.S. dependence on imported petroleum, increase fuel economy and improve emissions.

• Install propane fueling infrastructure that supports project vehicle refueling, and ultimately, general public refueling.

• Ensure that propane autogas vehicles run on propane autogas to the greatest extent possible and collect quantitative and qualitative data to document the success of the program

• Create and retain jobs in the areas of:
  o Conversion center and fleet technician personnel
  o The procurement and distribution of propane autogas
  o The administration of the integrated program of Alliance AutoGas
  o Marketing and communications specialization for alternative fuels and propane autogas fuel
Relevance

Project Objectives (continued)

• Provide appropriate education and training for partners associated with this project to ensure the vehicle conversions and maintenance are performed safely, beyond the scope of the project

• Promote individuals associated with this project and provide education in the larger community about propane autogas viability and available technology
  o Create immediate and sustainable interest in propane autogas for fleet applications from Maryland to Florida to Mississippi
  o Change the way fleet operations as well as the public view propane autogas vehicles and alternative fuels in general, from a difficult logistical challenge to a logical business decision with direct, positive economic impacts
  o Address ability to utilize existing fleet vehicles, and educate about fuel cost savings
<table>
<thead>
<tr>
<th>Month/Year</th>
<th>Project Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>May-12</td>
<td>100% conversion equipment ordered</td>
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<tr>
<td></td>
<td>90% vehicle deployment</td>
</tr>
<tr>
<td></td>
<td>100% infrastructure installment complete</td>
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<td></td>
<td>100% infrastructure NEPA EQs submitted and approved</td>
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<tr>
<td></td>
<td>Continued periodic audits of conversion system installation</td>
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<tr>
<td></td>
<td>Continued development of fleet written case studies</td>
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<td></td>
<td>First video case study complete</td>
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<td></td>
<td>Continue regional Roadshow Series</td>
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<tr>
<td></td>
<td>Continued online marketing campaign</td>
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<tr>
<td></td>
<td>Continued regional public relations campaign</td>
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<tr>
<td>Jun-12</td>
<td>100% vehicle deployment</td>
</tr>
<tr>
<td></td>
<td>100% Fleet maintenance training complete</td>
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<tr>
<td>Sep-12</td>
<td>Second video case study complete</td>
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<tr>
<td>Feb-13</td>
<td>Begin Phase 2 of Roadshow Series</td>
</tr>
<tr>
<td></td>
<td>Begin Phase 2 of fleet written case studies</td>
</tr>
<tr>
<td>Aug-13</td>
<td>100% Roadshow Series complete</td>
</tr>
<tr>
<td>Sep-13</td>
<td>100% outreach/education activities complete</td>
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</tbody>
</table>
## Technical Accomplishments and Progress - Previous Year Activities Summary

<table>
<thead>
<tr>
<th>Month/Year</th>
<th>Project Milestone</th>
<th>Progress To-Date as of May 15, 2012</th>
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<tbody>
<tr>
<td>May-11</td>
<td>Vehicle conversions begin 2nd phase, with initial beta test at start</td>
<td>Beta test completed and quality control measures documented and comprehensive Conversion Center training completed</td>
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<td></td>
<td>Vehicle and fueling station decals sent to all fleet partners</td>
<td>Decals placed on all converted vehicles and installed fueling stations</td>
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<tr>
<td></td>
<td>Public and private websites launched for Program</td>
<td>Public website (public education) and private website (track program success) launched</td>
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<tr>
<td>Jun-11</td>
<td>Completion of equipment order</td>
<td>All equipment for original fleets ordered</td>
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<tr>
<td></td>
<td>Begin full-scale PR campaign with press releases, media pitching and events</td>
<td>From June 2011 to current, efforts include weekly media pitching, securing VCCmedia interviews, distributed 8 press releases</td>
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<tr>
<td>Sep-11</td>
<td>Final equipment order and audit</td>
<td>VCC audit of remaining equipment completed</td>
</tr>
<tr>
<td>Nov-11</td>
<td>100% infrastructure installment for original fleets completed</td>
<td>All anticipated onsite fueling stations for original fleets installed</td>
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<td></td>
<td>Develop plan for written and video case studies</td>
<td>Identified fleets and arranged for first written and video case studies development</td>
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<td></td>
<td>Schedule Roadshow Series with Clean Cities in 9 states</td>
<td>3 dates set and the others being finalized in conjunction with Clean Cities coordinators</td>
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<tr>
<td>Dec-11</td>
<td>RFP 2 fleets onboarded and subagreements signed</td>
<td>All RFP 2 fleets completed subagreements and conversion schedule developed</td>
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<tr>
<td></td>
<td>Production of Roadshow Series materials</td>
<td>All Roadshow Materials completed and distributed 30% vehicle deployment with aggressive conversion schedule outlined</td>
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<tr>
<td></td>
<td>30% vehicle deployment</td>
<td>30% vehicle deployment with aggressive conversion schedule outlined</td>
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<tr>
<td>Jan-12</td>
<td>Virginia fleet performance audit and maintenance assessment</td>
<td>Audit was successful; converted vehicles operating according to expectations and fleets pleased with vehicles</td>
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<tr>
<td>Feb-12</td>
<td>38% vehicle deployment</td>
<td>38% vehicle deployment with aggressive conversion schedule outlined</td>
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<tr>
<td>Apr-12</td>
<td>First two events of Roadshow Series executed</td>
<td>Events in Atlanta, GA and Columbia, SC were successful and attracted fleets and media</td>
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## Technical Accomplishments and Progress – Current Year

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<td>100% conversion equipment ordered</td>
<td>Aggressive conversion schedule outlined</td>
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<td>90% vehicle deployment</td>
<td>Working with new fleet locations on infrastructure</td>
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<tr>
<td></td>
<td>100% infrastructure installment complete</td>
<td>Outlined plan for roadshows to be held in new states</td>
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<td>100% infrastructure NEPA EQs submitted and approved</td>
<td>Maintenance trainings executed and training video to be developed</td>
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<td>Continued periodic audits of conversion system installation</td>
<td>Extensive PR national and regional PR efforts outlined</td>
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<td>Plan developed for online marketing campaign</td>
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Partners and Collaborators

Sponsor/Funding Agency
Department of Energy (DOE)
Primary Role: Oversees project activities and ensure they are in accordance with negotiated terms and conditions, and meet DOE goals and objectives.

Prime Award Recipient
Virginia Department of Mines, Minerals, and Energy (DMME)
Primary Role: Award administrator and pass-through entity. Ensure compliance with ARRA, DOE and state terms & conditions.

Project Manager
Virginia Clean Cities (VCC) at James Madison University (JMU)
Primary Role: Overall award and project manager. Ensures project is completed on-time, within budget, and exceeds expectations. Daily project monitor and liaison between sponsor agency (DOE) and project partners. Responsible for ensuring information and data is collected to comply with reporting duties. Identifies and mitigates risks.

Sub-Recipients

Public & Private Fleet Partners
- AMS Van
- Airport Shuttle
- Augusta County
- Buchanan Gas
- Buckingham County
- Carroll County Sheriff’s Office
- Carroll County (City)
- Cobbled City
- Community Counseling
- Loudoun County Sheriff’s Office
- Fredericksburg Sheriff’s Office
- Greenville County
- Greene Transportation
- Jackson County
- James Madison University
- King George County
- Lee County
- Lee’s Pest Control
- Limousine Livery
- Madison County Sheriff’s Office
- Newport News (City)
- Paul’s Pizza
- Prince William
- Prince George Sheriffs Office
- Prince George, West Palm Beach
- Prince William County
- Springfield (City)
- Spotsylvania Sheriff
- Spotsylvania County
- Stafford County
- VCU Transportation
- Virginia Clean Cities
- Virginia Department of Mines, Minerals, and Energy (DMME)
- Virginia State Clean Cities Coalition
- Winchester

BioMass Gas / Alliance Autogas
Supports refueling infrastructure installation and maintenance.

American Alternative Fuel
Provides conversion equipment for vehicles (PHEVs), supports vehicle conversions, training technicians, and provides support to conversion centers.

Formation
Supports marketing, education, and outreach efforts.

Propane Education and Research Council (PERC)
Supports education and training efforts.
Partners and Collaborators

Top-level Partners

- U.S. Department of Energy
- Clean Cities
- Virginia Clean Cities
- Virginia Department of Mines, Minerals and Energy
- James Madison University
- Alliance AutoGas
- Blossman
- American Alternative Fuel
- Propane Education & Research Council
- Formation
Partners and Collaborators

Fleet Partners

- VA Premier
- Augusta County, VA
- Fleet Partners
- Groome Transportation
- Lee County, AL
- Jackson County, GA
- Sandy Springs
- Spotsylvania County Schools
- Spotsylvania Sheriff's Dept
- Spotsylvania, VA
- Airport Shuttle New Orleans
- CCSMS
- The City of Carrollton, GA
Partners and Collaborators

Clean Cities Coalitions participating in regional Roadshow Series
See the entire SPADP media archive at: http://www.usepropaneautogas.com/media-archives/
Future Work for 2012

• Install remaining infrastructure for new fleets
• Complete vehicle conversions by target completion date (June 2012)
• Work with fleets to review options for transition private fueling stations to publicly accessible fueling stations
• Promote Program and partner successes to generate wide-scale interest in alternative fuels
  o Continue aggressive marketing and PR efforts, including press releases and media events
  o Execute Phase 1 of Roadshow Series in 10 Southeast states
  o Collect detailed information regarding ROI and impact of project
  o Develop and distribute numerous case studies about fleet successes with autogas
Summary

• This is the largest Department of Energy-funded propane autogas conversion deployment Program in U.S. history
• 1,201 vehicles from public and private fleets are being converted using the same equipment provided by one technology supplier organization
• Detailed, comprehensive data on all 1,201 propane autogas vehicles is being collected and widely distributed to highlight the impact of the funds
• Project teams brings unique ability to leverage program far beyond proposed objectives by marketing the program throughout the Southeast U.S. using a number of mediums – media, Internet, video, and roadshow events
• An estimated 4 million gallons of gasoline and 4,000 tons of air pollutants will be displaced each year of the program that all of the propane autogas vehicles are on the roads
• To date, this program has funded more than 32,000 hours of work, creating and retaining jobs
The Alliance AutoGas Chain

Our Fleet Customers make a commitment to achieve:
- Lower fuel costs
- Lower emissions
- Less dependence on foreign oil
- Without sacrificing power
- Without sacrificing performance

When Alliance AutoGas converts vehicles into AutoGas hybrids, we use Certified Technicians working in Certified Conversion Centers. That means our fleet customers receive:
- The highest quality equipment
- Installed by the best technicians
- With tight quality & process control

Each of our fleet customers is:
- Displacing thousands of gallons of gasoline with propane AutoGas
- Using a fuel that is 90% produced in the U.S.
- Fueling their vehicles right at the home base
- Using a cleaner, less expensive alternative to foreign oil

FUELING + SUPPORT
- Alliance installs AutoGas station at fleet base
- Provides operational & safety training for operators
- Provides fuel with 100% availability guarantee
- Provides ongoing technical/ safety support & service

CERTIFIED CONVERSION CENTER
CONVERSION + TRAINING
- Alliance AutoGas provides training for Certified Technicians
- Prins Vapor Sequential Injection Systems installed
- Alliance ensures Prins system is EPA-certified for make/model
- Dot Certified fuel tanks installed

FLEET VEHICLES
- Cars / Trucks / Van & Shuttles
Program Statistics - March 2012

CURRENT PROGRAM STATISTICS

993.7 tons of greenhouse gases eliminated
651,880 gallons of gasoline displaced
32,673.5 hours of work funded by project

Click on the dots to view Program fleets