## Overview

### Timeline
- Start date Dec 3, 2009
- End date Dec 2, 2011
- Percent complete: 45%

### Barriers/Risks
- Expiration of alt-fuel vehicle tax credit
- Municipal budget cuts
- Vehicle/equipment lead times

### Budget
- DOE share $15 M
- Recipient share $29 M
- Total project $44 M

### Partners
- Lead: Puget Sound Clean Air Agency
- Partners: 14 municipalities, 3 universities, 8 private businesses
Puget Sound Clean Cities Coalition Petroleum Reduction Project
DE-EE0002020

Project Objectives:
• Reduce petroleum use in the Seattle-Puget Sound region through targeted deployment of alternative fuel vehicles and infrastructure.
• Create a regional sustainable market for renewable alternative fuels with low lifecycle emissions.
• Preserve and create 350 jobs nation-wide, and enhance our local economy.
• Elevate public awareness of the Clean Cities program through an innovate outreach campaign designed to reach an audience of 30 million people per year.
Vehicle Deployment:
• 223 alternative fuel and advance technology vehicles deployed in local government fleets.
• 220 compressed natural gas vehicle conversion in taxi and shuttle fleets.
• 594 pieces of battery electric ground support equipment at Seattle-Tacoma (Sea-Tac) Airport.

Infrastructure Deployment:
• Biomethane fueling facility at diary farm in Lynden, WA.
• One biodiesel station and one ethanol station in Everett, WA.
• 130 regional electric vehicle charging stations.

Marketing, Outreach & Education:
• Video-loop about DOE Clean Cities to play continuously on 16 baggage claim terminal screens at Sea-Tac Airport.
• Green driver training, EV guidebooks, biogas workshops.
## Milestones

<table>
<thead>
<tr>
<th>Completed</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2010</td>
<td>25% of Vehicles Deployed</td>
</tr>
<tr>
<td>April 2011</td>
<td>50% of Vehicles Deployed</td>
</tr>
<tr>
<td>February 2011</td>
<td>50% of Vehicles Ordered</td>
</tr>
<tr>
<td>May 2010</td>
<td>100% of Sub-Recipient Agreements Finalized</td>
</tr>
<tr>
<td>March 2010</td>
<td>100% NEPA Documentation for Vehicles Approved</td>
</tr>
<tr>
<td>March 2011</td>
<td>100% NEPA Documentation for Fueling Infrastructure Approved</td>
</tr>
<tr>
<td>April 2011</td>
<td>100% of Cost-Share Partner Agreements Finalized</td>
</tr>
<tr>
<td>April 2011</td>
<td>100% of NEPA Documentation for EV Infrastructure Approved</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Planned Completion</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 2011</td>
<td>100% of Vehicles Ordered</td>
</tr>
<tr>
<td>September 2011</td>
<td>75% of Vehicle Deployed</td>
</tr>
<tr>
<td>December 2011</td>
<td>100% of Vehicles Deployed</td>
</tr>
<tr>
<td>October 2011</td>
<td>50% of Fueling Infrastructure Complete and Dispensing</td>
</tr>
<tr>
<td>December 2011</td>
<td>100% of Fueling Infrastructure Complete and Dispensing</td>
</tr>
<tr>
<td>May 2011</td>
<td>50% of EV Charging Infrastructure Installed</td>
</tr>
<tr>
<td>November 2011</td>
<td>100% of EV Charging Infrastructure Installed</td>
</tr>
<tr>
<td>May 2011</td>
<td>50% of Training/Workshops Completed</td>
</tr>
<tr>
<td>December 2011</td>
<td>100% of Training/Workshops Completed</td>
</tr>
<tr>
<td>May 2011</td>
<td>50% of Marketing/Outreach Conducted</td>
</tr>
<tr>
<td>December 2011</td>
<td>100% of Marketing/Outreach Conducted</td>
</tr>
<tr>
<td>June 2011</td>
<td>100% of Airport GSEs Ordered</td>
</tr>
<tr>
<td>December 2011</td>
<td>100% of Airport GSEs Deployed</td>
</tr>
</tbody>
</table>
Technical Accomplishments

Vehicles Ordered and Deployed
• 80 CNG vehicles retro-fitted and deployed
• 12 propane vehicles deployed
• 110 OEM light-duty hybrid, electric and CNG vehicles deployed
• 44 heavy duty diesel hybrid vehicles deployed

Marking and Education
• Electric vehicle outreach documents drafted, including utility bill supplement and guidebook for consumers
• Grant project website and fact sheets completed
• Bio-methane workshop curriculum developed
• Storyboard of Clean Cities-SeaTac baggage claim video complete
• 400 drivers enrolled in web-based green driver training program

Grant-supported CNG taxi ready for deployment
Technical Accomplishments (2)

NEPA Review Completion
- 100% of EV charging station NEPA applications approved (130 units)
- 100% of fueling station NEPA applications approved
- 100% of OEM vehicle and vehicle retrofit NEPA applications approved

Fueling Infrastructure
- First fueling at CNG/biomethane station
- Contracts executed with all EV charging station partners
- Construction bid for biofuel tanks in Everett, WA awarded
- Construction started on EV charging stations

Biomethane storage array at fueling station in Lynden, WA (photo courtesy: Western Washington University)
Project Partners

Sub-Recipients:
- City of Seattle
- Port of Seattle
- WorldCNG
- Western Washington University
- Snohomish County
- Washington State University

Vehicle Purchase & EVSE Cost-Share Partners:
- Cities of Bellevue, Everett, Issaquah, Kirkland, Mercer Island, Olympia, Renton, Sammamish, Seattle, Tacoma,
- University of Washington
- King County and Snohomish County
Future Work

- Complete electric vehicle charging station installations
- Deploy additional CNG retrofitted vehicles
- Deploy electric ground support equipment at Sea-Tac Airport
- Execute biomethane workshops
- First fueling at Everett bio-fuel stations
- Compute and publish fuel economy results from driver training
- Report on annual fuel displacement for charging stations, fueling stations, vehicles and ground support equipment

CNG tanks awaiting installation in grant-supported taxis
Summary

• The project encourages adoption of alternative fuel and advanced technology vehicles in the Puget Sound region through the purchase of over 1000 pieces of equipment.

• We are on target for vehicle purchases and deployment, but the pace of infrastructure development continues to be challenging.

• This project has created direct jobs such as CNG mechanics, and has maintained regional administrative, engineering, and trade jobs.

• The project gives unprecedented exposure to the US DOE Clean Cities program through targeted marketing at Sea-Tac Airport.

• We are well positioned for planned future work.