

New EV Outreach, Communication and Deployment Efforts

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



**Metropolitan Washington Council of
Governments
Electric Vehicle Forum
April 29, 2011**

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Background

- Goal: One million electric vehicles on road by 2015
- Major Barrier: Build out of infrastructure with home charging key



Challenges

- Breadth of stakeholders necessary to establish home charging infrastructure
 - electrical contractors, inspectors, utilities, consumers, and cities
- Variety of charging options depending upon vehicle purchased, driving patterns, utility rate structures, metering, preferred EVSE equipment, etc.
- Permitting (some States)
- Cost

Focus

- To facilitate SAFE, reliable, cost effective installation of home charging EVSE with positive consumer impact



EVSE Level 2 Installation for residential home charging

- **Audience: electrical contractors and inspectors**

Feature of Clean Cities TV

- **Video Outline**

- Types of EDVs and EVSE charging options
- NEC Article 625
- EVSE Installation Processes
 - Retrofit
 - New construction
- Electrical contractor/inspector resources



- **Video Participants**

- NECA
- IAEI
- Electrical contractor
- Utilities
- ANL
- DOE

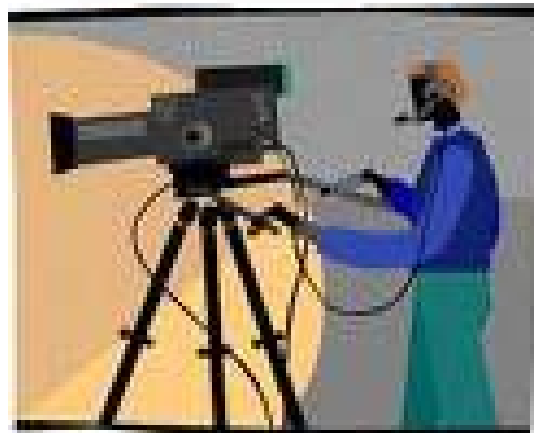
- **Additional Reviewers**

- OEMs
- EVITP
- INL
- NREL
- NEMA
- EVSE mfgs



Current Activities

- Identification of footage
- Script development and review
- Filming- week of April 18th
- Post Production- May 2011
- Video completion- June 2011



Future Activities

- Companion document for EVSE 101 video
- Possible video for multi-unit dwellings
- Possible video for commercial charging (fleets, businesses, parking garages,...)



Alternative Fuels and Advanced Vehicles Data Center

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Alternative Fuels & Advanced Vehicles Data Center

About the AFDC | Fuels | Vehicles | Fleets | Incentives & Laws | Data, Analysis & Trends | Information Resources



The Alternative Fuels and Advanced Vehicles Data Center (AFDC, formerly known as the Alternative Fuels Data Center) provides a wide range of information and resources to enable the use of alternative fuels (as defined by the [Energy Policy Act of 1992](#)), in addition to other petroleum reduction options such as advanced vehicles, fuel blends, idle reduction, and fuel economy.

This site is sponsored by the U.S. Department of Energy's [Clean Cities](#) initiative.



Data, Analysis, and Trends

Our [Data, Analysis, and Trends](#) section provides industry trends and facts based on data analysis.

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Alternative Fuel Portals

- [Biodiesel](#)
- [Electricity](#)
- [Ethanol](#)
- [Hydrogen](#)
- [Natural Gas](#)
- [Propane](#)

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- [Emissions](#)
- [Fuel Economy](#)
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AFDC Tools

- [Light-Duty Vehicle Search](#)
- [Heavy-Duty Vehicle Search](#)
- [Alternative Fueling Station Locator](#)
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- [Publications Search](#)
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■ **NEWS**

EPA Streamlines Alternative Fuel Conversion Compliance Requirements >
March 30, 2011

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NPGE SE Convention & International Propane Expo >
04/16/2011 - 04/18/2011

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■ **FEATURES**



National Clean Fleets Partnership >



Plug-in Ready?

Read case studies featuring metro areas preparing for electric vehicles. >

Vehicle Technologies Program

eere.energy.gov

Hybrid, Plug-in Hybrid, & All-Electric Vehicles

Basics

- Hybrids
- Plug-in Hybrids
- All-Electric Vehicles

Benefits

Availability

Emissions

Charging

Batteries

Maintenance & Safety

Deployment

Research & Development

Related Links

Basics of Hybrid, Plug-in Hybrid, and All-Electric Vehicles

Learn the basics below about hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and all-electric vehicles (EVs)—also called electric drive vehicles collectively. These vehicles use electricity either as their primary fuel or to improve the efficiency of conventional vehicle designs.

Hybrid Electric Vehicles ▶



HEVs are powered by conventional or alternative fuels as well as electric power stored in a battery. The battery is charged through regenerative braking and the internal combustion engine and is not plugged in to charge.

Learn more about [hybrid electric vehicles](#).

Plug-in Hybrid Electric Vehicles ▶



PHEVs are powered by conventional or alternative fuels as well as electric power stored in a battery. The vehicle can be plugged into an electric power source to charge the battery. PHEVs are sometimes called extended range electric vehicles (EREVs).

Learn more about [plug-in hybrid electric vehicles](#).

All-Electric Vehicles ▶



EVs use a battery to store the electric energy that powers the motor. EV batteries are charged by plugging the vehicle into an electric power source. EVs are sometimes referred to as battery electric vehicles (BEVs).

Learn more about [all-electric vehicles](#).

 [Printable Version](#)

Compare Electricity Sources and Annual Vehicle Emissions

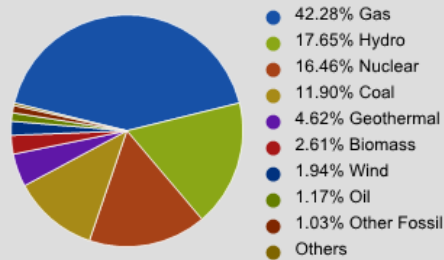
Enter a ZIP code to see a breakdown of the electricity sources used to charge EVs and PHEVs on a local grid and compare the annual emissions generated from vehicles using electricity from the grid, gasoline, or a combination of the two.

ZIP Code

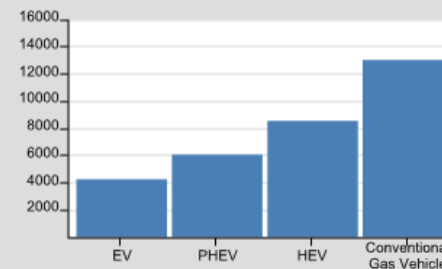
[Find Data](#)

California - 90210

Electricity Sources

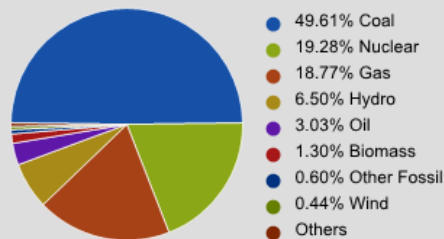


Annual Emissions per Vehicle
(lb of CO₂ equivalent)

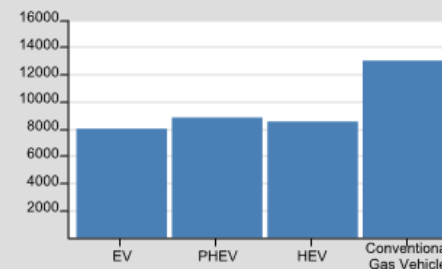


National Averages

Electricity Sources



Annual Emissions per Vehicle
(lb of CO₂ equivalent)



[Sources and Assumptions](#)

EV Station Locations

Alternative Fuels & Advanced Vehicles Data Center

About the AFDC | **Fuels** | Vehicles | Fleets | Incentives & Laws | Data, Analysis & Trends | Information Resources | Home

Basic Station Search | Map a Route | Stations by State

First: Select one or more fuels.

☐ Biodiesel (B20 and above)

☐ Compressed Natural Gas (CNG)

☒ Electric

☐ Ethanol (E85)

☐ Hydrogen

☐ Liquefied Natural Gas (LNG)

☐ Liquefied Petroleum Gas (Propane)

Second: Enter a complete address or zip code.

90210

Show stations within a mile radius.

Show station type:

☒ Level 1 ☒ Level 2 ☒ DC Fast ☐ Other

[Advanced Options](#)

Get Results

Results 1 to 10 of 12

A Westwood Village Parking Structure
Electric
1036 Broxton Ave
Los Angeles CA 90024
Type: Level 1, Other
Distance: 3.5 Miles
Access: Public - see hours

B Toyota of Hollywood
Electric
6000 Hollywood Blvd
Hollywood CA 90028
Type: Level 2
Phone: 323-860-5500
Distance: 5.1 Miles
Access: Public - see hours

C Ralph's
Electric
1644 Cloverfield Blvd
Santa Monica CA 90404
Type: Level 1, Other
Distance: 6.3 Miles
Access: Public - see hours

Map | Satellite | Hybrid

Print | Print All Results

Map data ©2011 Google

Some locations can't be precisely located by the mapping application, so we recommend you call stations to verify location, hours of operation, and access.



Alternative Fuels & Advanced Vehicles Data Center

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Federal & State Incentives & Laws

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[Federal](#)

[State](#)

[Advanced Search](#)

[All Incentives & Laws Sorted by Type](#)


Advanced Search

Search incentives and laws related to alternative fuels and advanced vehicles. Choose one or more jurisdictions to start your search. Select additional options to narrow your search.

Jurisdiction	Technology/Fuel	Incentive/Regulation	User
<input checked="" type="checkbox"/> All	<input type="checkbox"/> All	<input checked="" type="checkbox"/> All	<input checked="" type="checkbox"/> All
<input checked="" type="checkbox"/> Federal	<input type="checkbox"/> Biodiesel	<input checked="" type="checkbox"/> Acquisition or Fuel Use	<input checked="" type="checkbox"/> Vehicle Owner or Driver
<input checked="" type="checkbox"/> Alabama	<input type="checkbox"/> Ethanol	<input checked="" type="checkbox"/> Grants	<input checked="" type="checkbox"/> Fleet Purchaser or Manager
<input checked="" type="checkbox"/> Alaska	<input type="checkbox"/> Natural Gas	<input checked="" type="checkbox"/> Driving or Idling	
<input checked="" type="checkbox"/> Arizona	<input type="checkbox"/> Propane (LPG)		
<input checked="" type="checkbox"/> Arkansas	<input type="checkbox"/> Hydrogen Fuel Cells		
<input checked="" type="checkbox"/> California			

[Clear all](#) [Search](#)

367 Results for:
Jurisdiction: All
Technology/Fuel: EVs, HEVs / PHEVs, NEVs
Incentive/Regulation: All
User: All

 **Alabama**
Last Updated May 2010

Laws and Regulations

Fuel-Efficient Green Fleets Policy

The Alabama Legislature will establish a Green state vehicles based on criteria that include f... be required to classify their vehicle inventory procuring fuel-efficient vehicles. These plans economy for light-duty vehicles, a 3% annual vehicles, and a 2% annual increase in average. The Policy will also require that government a...

This section allows you to browse and search a database of federal and state laws and incentives related to alternative fuels and vehicles, air quality, fuel efficiency, and other transportation-related topics.

Federal
Incentives and Laws

State
Incentives and Laws

Search All Incentives and Laws ▶

Use an advanced search to find a specific federal or state incentive or law.

View Tables of Incentives and Laws ▶

View tables of incentives and laws sorted by [technology/fuel](#), [incentive](#), [regulation](#), or [user](#).

Read Key Legislation ▶

Read selected federal legislation summaries related to alternative fuels and advanced transportation technologies.

Find Local Incentives and Laws ▶

Find examples of incentives and laws from local governments.

Vehicle Technologies Program

eere.energy.gov

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Plug-in Hybrid and All-Electric Vehicle Deployment Case Studies

Preparing for widespread adoption of electric vehicles, cities and other local leaders are working to speed the process to install home-based electric vehicle supply equipment (EVSE) for plug-in hybrid electric vehicles (PHEVs) and all-electric vehicles (EVs). Some U.S. cities are cutting the time needed to install and permit [home charging](#) stations down to one or two days. The following case studies focus on what four leading areas are doing to trim the EVSE permitting and installation process.



Oregon ▶

Oregon's statewide process speeds simple EVSE installations by enabling licensed electricians to buy permitting "labels" online and inspecting only one out of ten EVSE installations.




Raleigh ▶

With one-hour permitting and next-day inspections, Raleigh's process for a simple EVSE project can be completed in as few as two days.



Los Angeles ▶

Los Angeles issues automatic online permits for simple EVSE and guarantees inspections within 24 hours of installation.



Houston ▶

Houston's automatic online permitting and pilot rapid-inspection program enable EVSE to be assessed, permitted, installed, and inspected within one day.

[Printable Version](#)



Oregon's EVSE Installing and Permitting Process

► Step 1: Identify

► Step 2: Assess

▼ Step 3: Permit

Getting a Permit

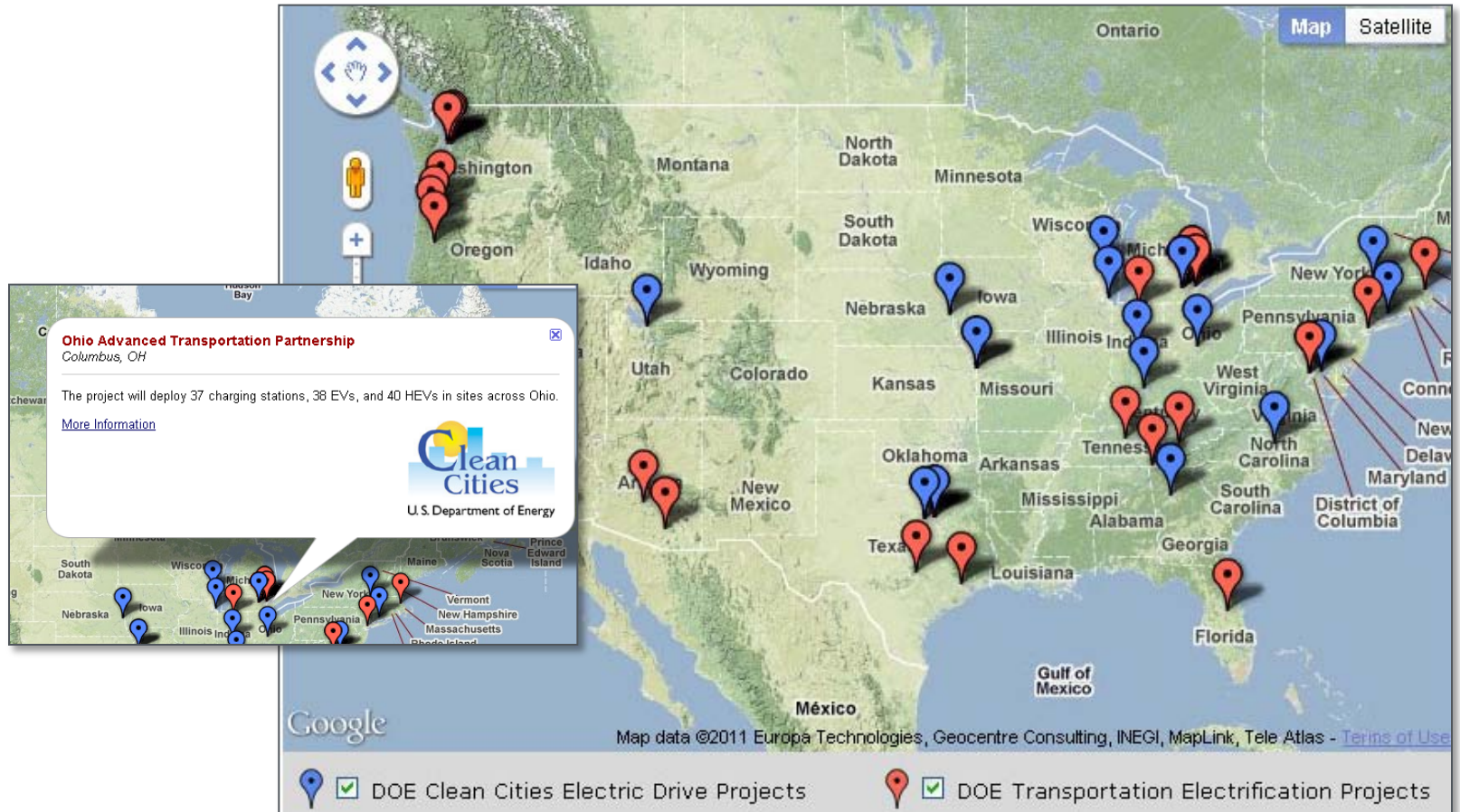
For standard EVSE installations, a licensed electrician buys booklets of 10 [minor installation labels](#) for \$140 under the Oregon Minor Label Program. Each label allows licensed employees to perform minor electrical installations. Standard EVSE installations are defined as those that are within sight of the electrical panel that supplies the EVSE, have a branch circuit that does not exceed 40 amps/240 volts, and are not in a damp location. More complex installations have different permitting requirements.

► Step 4: Install

► Step 5: Inspect

► Step 6: Integrate

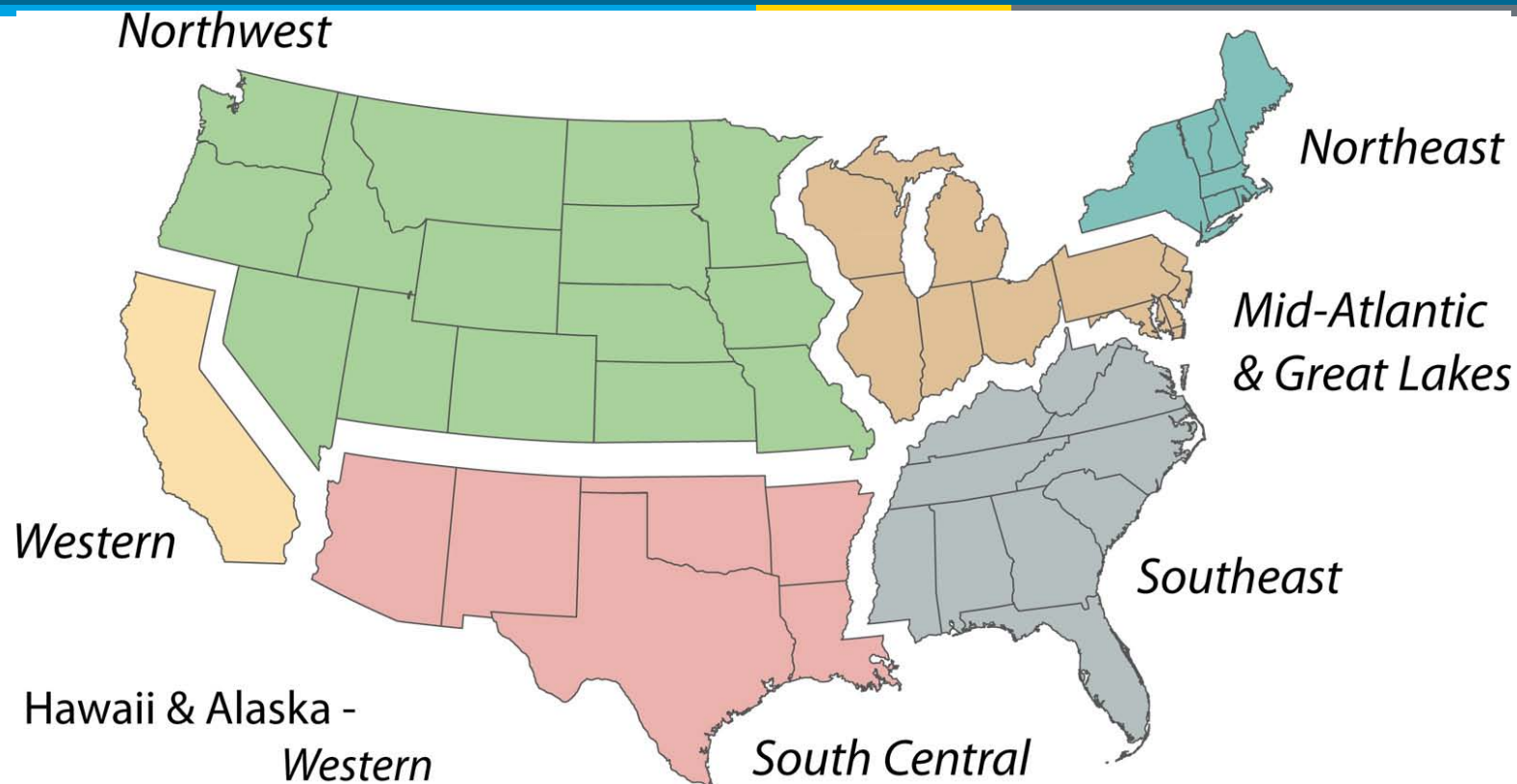
EV Deployment Projects



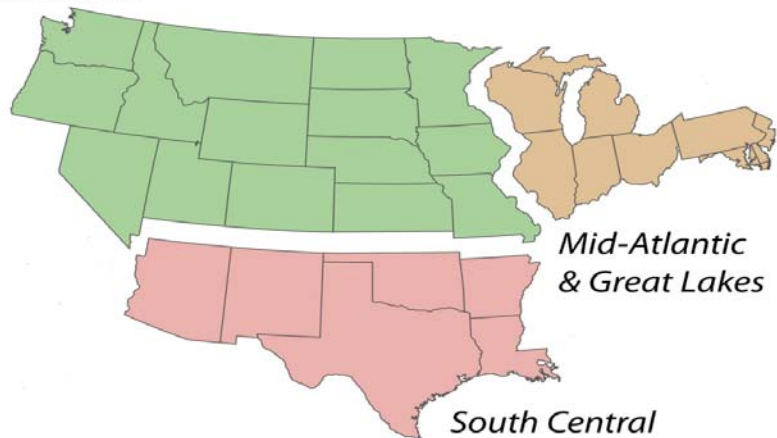
Clean Cities FY '09-10 and American Recovery Act Electric Vehicle Projects

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HD PHEV	LD EV	HD EV	NEV	TOTAL PEVs	Public EV Stations	Private EV Stations	TOTAL STATIONS
39	613	248	305	1205	470	77	547



Coalition	State	HD PHEV	LD EV	HD EV	NEV	TOTAL PEVs	Public EV Stations	Private EV Stations	TOTAL STATIONS
Dallas-Fort Worth Clean Cities	TX	-	-	9	25	34	-	4	4
Kansas City Regional Clean Cities Coalition	MO	25	1	1	-	27	12	-	12
Puget Sound Clean Cities	WA	-	594	203	--	797	130	-	130
Wisconsin Clean Cities	WI	-	-	-	254	254	-	11	11
Ann Arbor Clean Cities	MI	3	-	-	-	3	-	23	23
Clean Fuels Ohio	OH	-	1	35	-	36	-	28	28
Chicago Area Clean Cities	IL	4	3	-	-	7	131	-	131



Northeast Region

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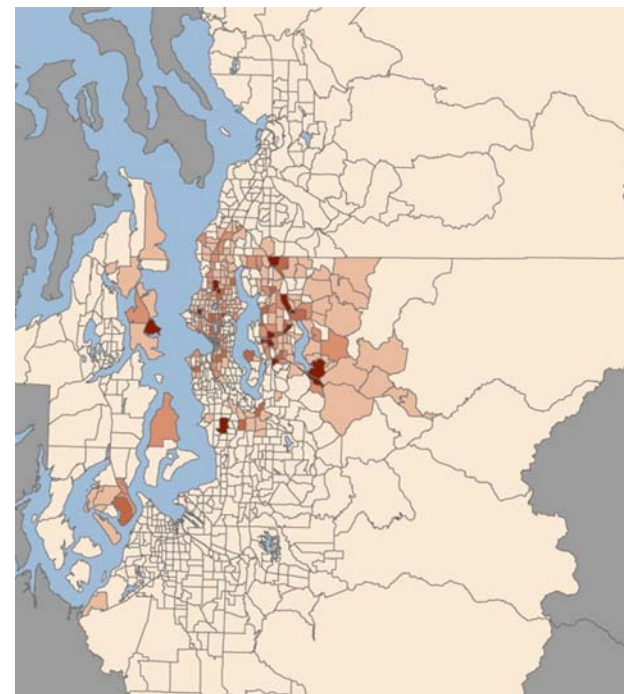
Southeast Region



Coalition	State	HD PHEV	LD EV	NEV	TOTAL PEVs	Public EV Stations	TOTAL STATION S
Triangle Clean Cities, Palmetto State Clean Cities, Land of Sky Clean Cities, Centralina Clean Cities	NC, SC	-	-	26	26	104	104
Greater New Haven Clean Cities, Capital Clean Cities, Norwich Clean Cities, Southwestern Connecticut Clean Cities	CT	-	-	-	-	11	11
Genesee Region Clean Communities, Clean Communities of Central New York, Clean Communities of Western New York, Capital District Clean Communities, New York City and Lower Hudson Valley Clean Communities	NY	7	14	-	21	93	93

Puget Sound Regional Council Siting Study

- Places of employment outside urban core are good charging station candidate sites
- In urban core, most vehicles travel less than 10 miles to work
- Outside urban core, vehicles travel 20 to 40 miles to work
- Park and Rides are rarely good candidate sites
- Recreation centers, stadiums, shopping malls, airports are good non-work charging station sites.



Top EV Destinations in
Seattle for Non-Work Trips

- <http://www.psrc.org/transportation/ev/model-guidance/>
- <http://www.psrc.org/transportation/ev/charging-stations>
- <http://www.westcoastgreenhighway.com/>

Stephanie Meyn

Puget Sound Clean Cities

StephanieM@pscleanair.org

(206) 689-4055

- Community Readiness – No hardware or vehicles
- 10 – 15 awards anticipated
- \$250,000 – \$500,000 each
- 5/16/11 – Letters of intent due
- 6/13/11 – Proposals due
- September 2011 – Awards selected

Pilot program in anticipation of future EV deployment efforts (this is not the \$200M program mentioned in the FY2012 budget request).

(FedConnect – Sol# DE-FOA-0000451)

Clean Cities Web site

www.cleancities.energy.gov

Alternative Fuels & Advanced Vehicles Data Center Web site

www.afdc.energy.gov

Clean Cities Coordinator Contact Information and Coalition Web sites

<http://www.afdc.energy.gov/cleancities/progs/coordinators.php>

DOE EERE Information Center and Technical Response Service

Web Site: <http://www.eere.energy.gov/afdc/informationcenter.html>

Phone: 1-800-EERE-INF (1-877-337-3463)

Email: technicalresponse@icfi.com

Hours: 9:00 a.m. – 6:00 p.m. EST