New EV Outreach, Communication and Deployment Efforts

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Metropolitan Washington Council of Governments
Electric Vehicle Forum
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EVSE 101 Video: Drivers and Challenges

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 mfgrs

EVSE 101 Video: Current and Possible Future Activities

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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www.afdc.energy.gov

Electric Drive Section of the AFDC

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.

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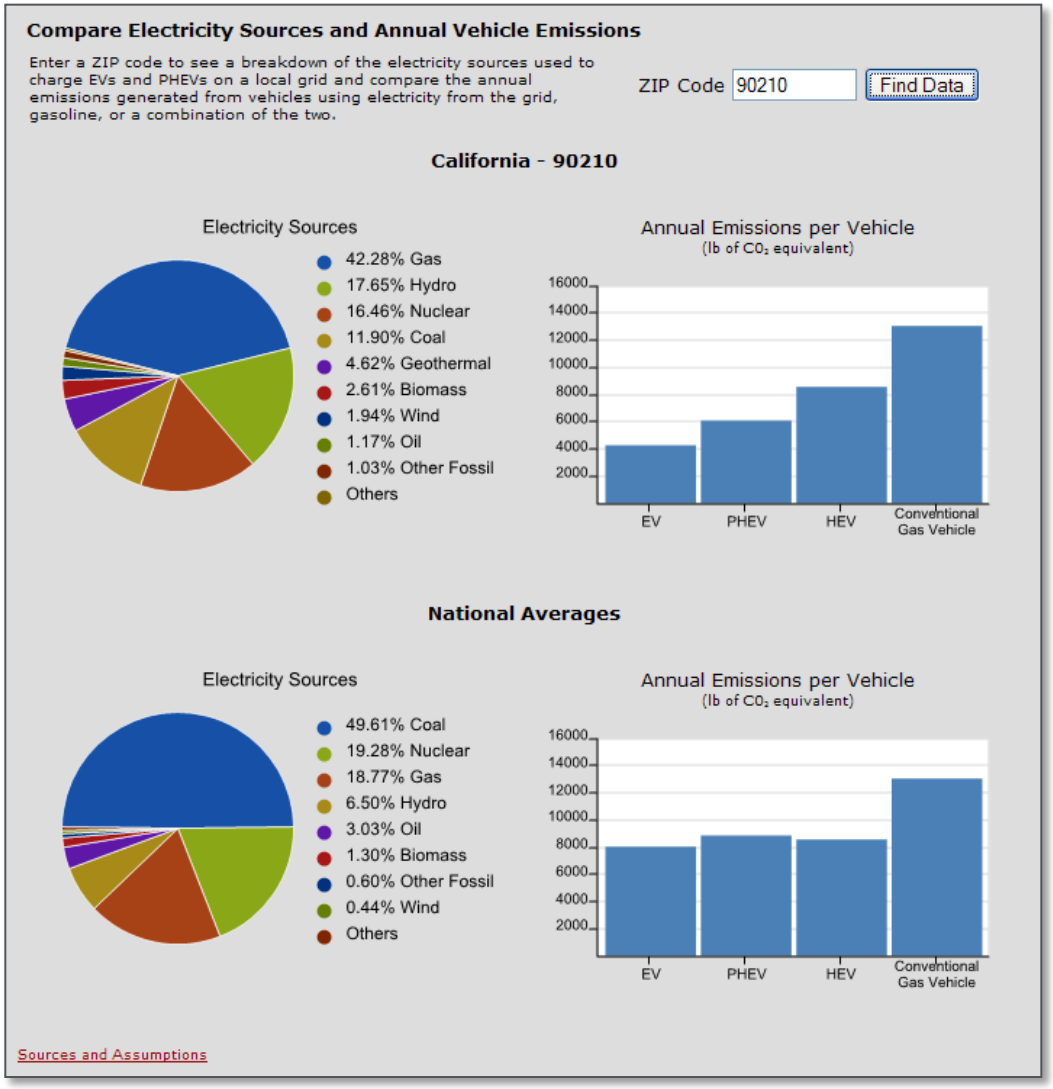
EV Emissions



EV Station Locations

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Alternative Fuels & Advanced Vehicles Data Center

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Alternative Fueling Station Locator

Help

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 25 mile radius.

Show station type: ☑ Level 1 ☑ Level 2 ☑ DC Fast ☐ Other

Advanced Options

Get Results

Print | Print All Results

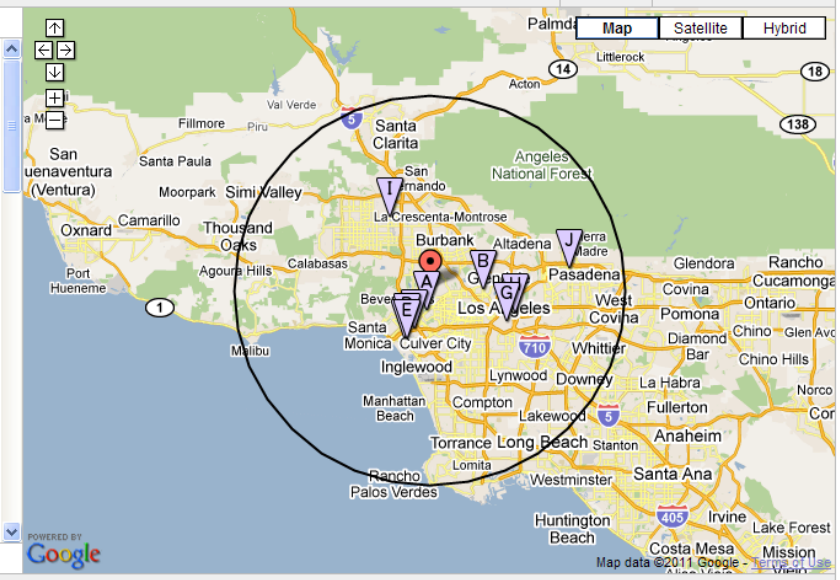
Results 1 to 10 of 12

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

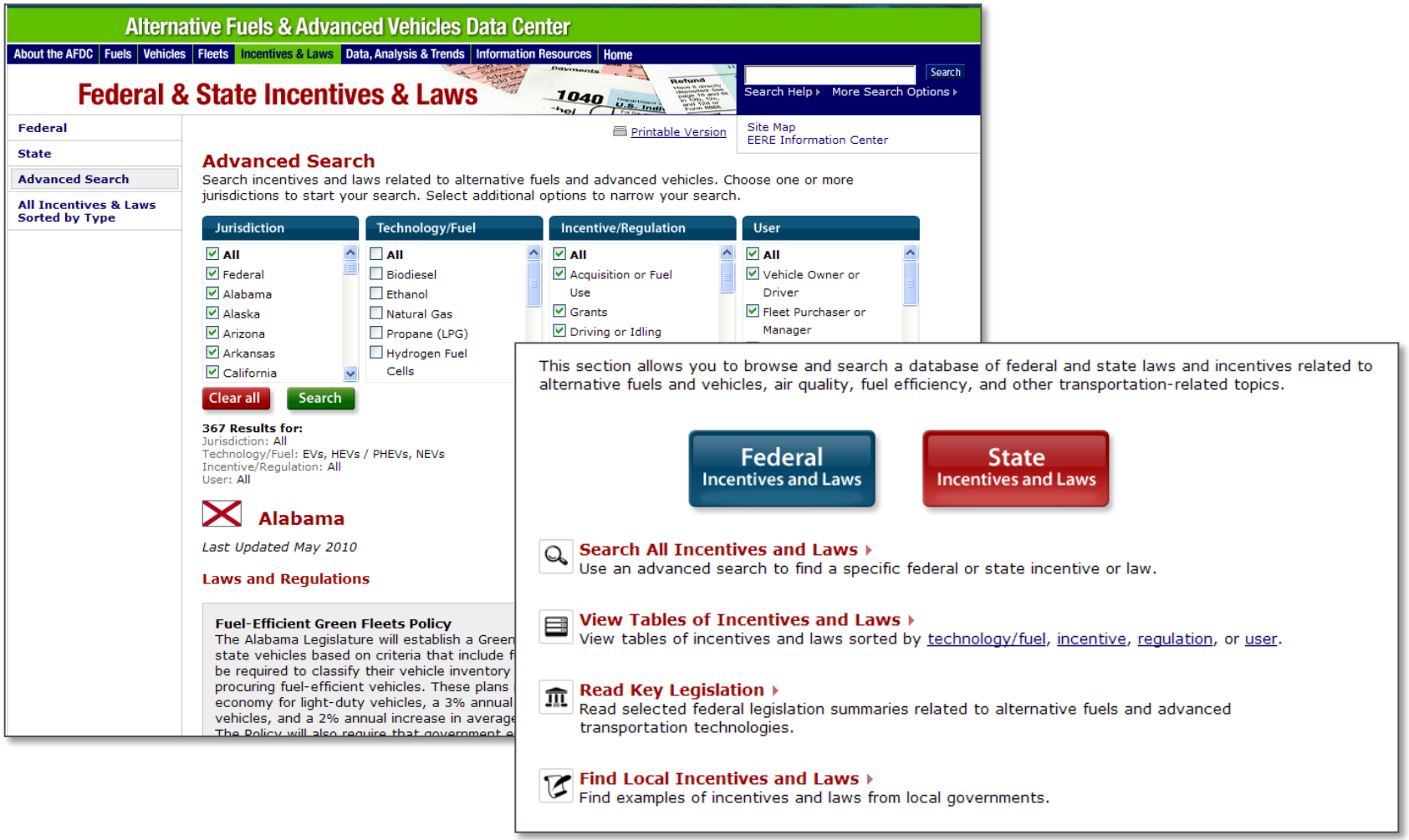
C Ralph's
Electric
1644 Cloverfield Blvd
Santa Monica CA 90404
Type: Level 1, Other
Distance: 6.3 Miles
Access: Public - see hours

1 2 >>



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.

EV Incentives & Laws



EV Case Studies

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Alternative & Advanced Vehicles

Search | Search Help | More Search Options

- Light-Duty Vehicle Search
- Heavy-Duty Vehicle Search
- Cost Calculator
- Flexible Fuel Vehicles
- Natural Gas Vehicles
- Propane Vehicles
- Hybrid, Plug-in Hybrid, & All-Electric Vehicles
  - Basics
  - Benefits
  - Availability
  - Emissions
  - Charging
  - Batteries
  - Maintenance & Safety
  - Deployment
  - - Projects
  - - Case Studies
  - Research & Development
  - Related Links
- Fuel Cell Vehicles
- Diesel Vehicles
- Conversions
- Resale
- Technician Training
- Idle Reduction
- Fuel Economy
- Emissions

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Site Map
EERE Information Center

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.

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Oregon's EVSE Installing and Permitting Process

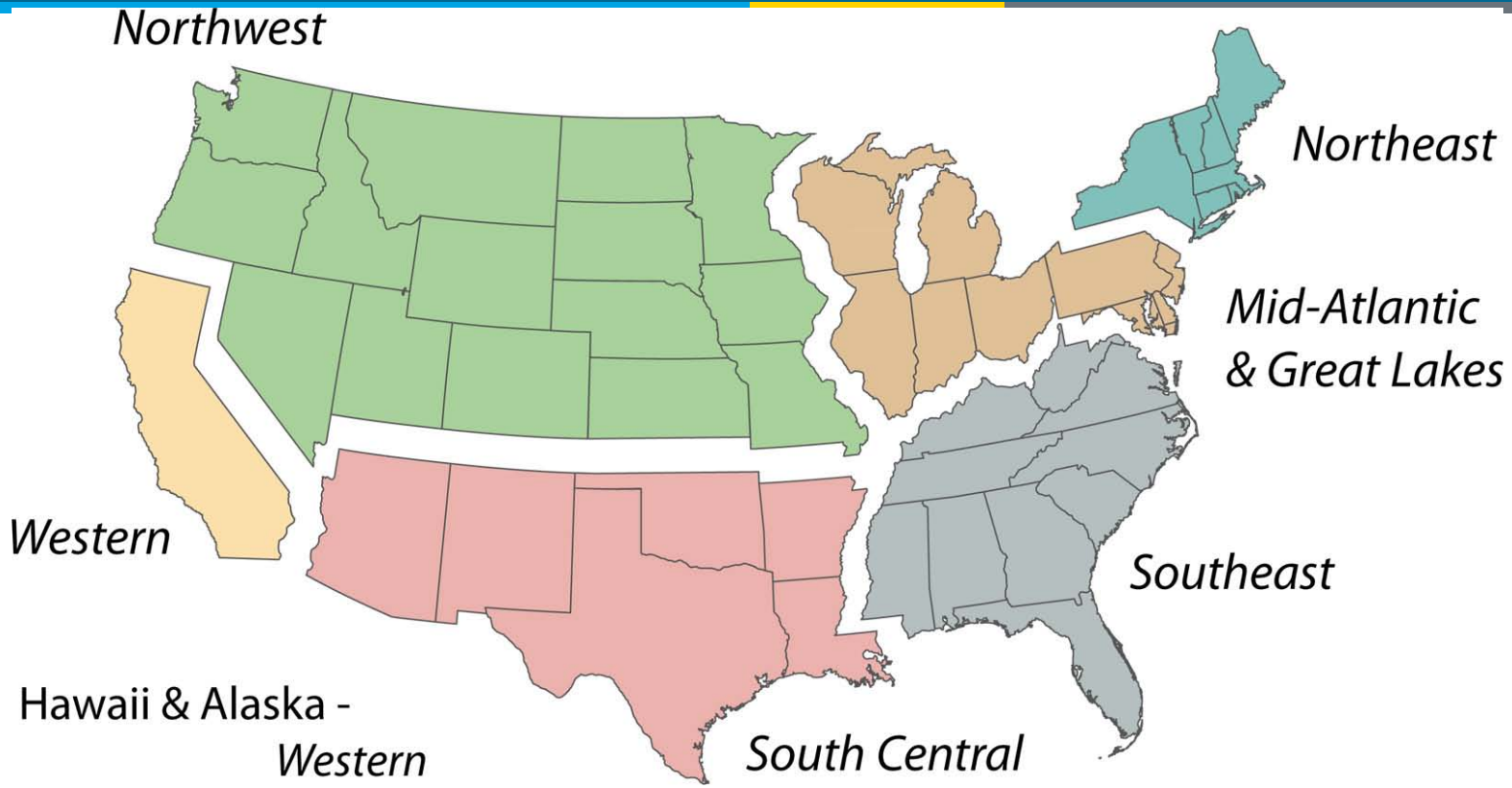
- Step 1: Identify
- Step 2: Assess
- Step 3: Permit

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.

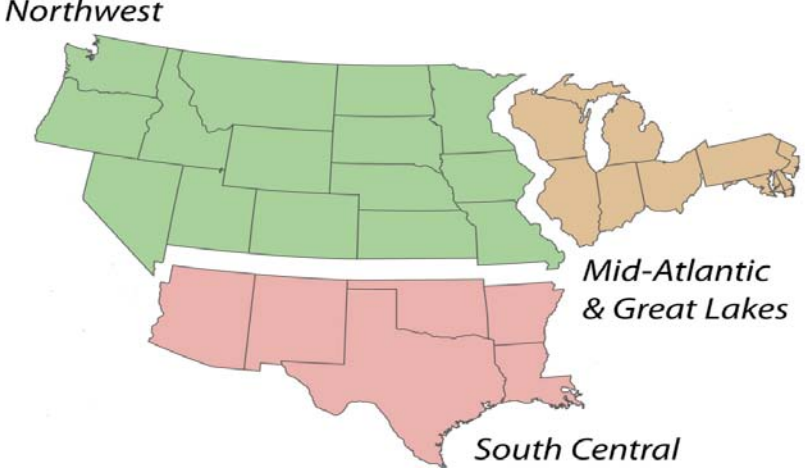
- Step 4: Install
- Step 5: Inspect
- Step 6: Integrate

EV Deployment Projects

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



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**

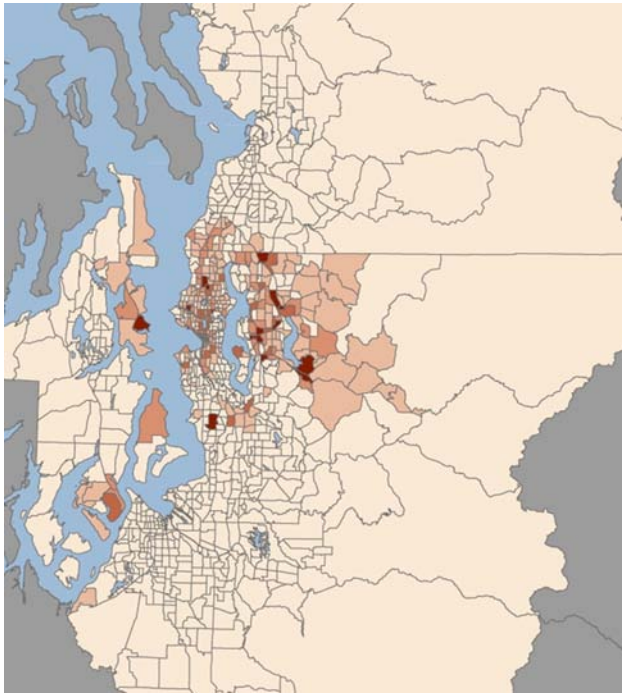
Northeast Region

Southeast Region

Coalition	State	HD PHEV	LD EV	NEV	TOTAL PEVs	Public EV Stations	TOTAL STATIONS
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

Resources

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

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$5M Funding Opportunity

- 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
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Email: technicalresponse@icfi.com
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