



Fact Sheet

Plug-in Electric Vehicle Deployment

October 2012

In 2011, President Barack Obama set a goal to put one million electric vehicles (EVs) on the road by 2015.¹ This includes plug-in hybrid, all-electric, and extended range electric vehicle technologies; collectively known as plug-in electric vehicles (PEVs). Achieving the president's target would help lessen our nation's dependence on foreign oil, create jobs, stimulate economic growth, and reduce green house gas emissions. Currently, there are more than 40,000 PEVs deployed and approximately 8,000 public charging stations nationwide. A vital ingredient to the success of electric vehicle integration is the development of proper infrastructure. PEV infrastructure requires coordination across multiple sectors including utilities, emergency services, permitting agencies, local governments, automakers, and charging station providers. So-called PEV **deployment communities** can facilitate the streamlined introduction of PEVs into targeted, "...model communities [that] invest in the necessary infrastructure, remove the regulatory barriers, and create the local incentives to support deployment of advanced vehicles at critical mass."² These communities, along with PEV fleet deployment, create a framework for future widespread PEV integration and greater transportation electrification.

DEPLOYMENT INITIATIVES

Programs to foster PEV deployment can be found at the national, state, and local levels. These initiatives seek to promote widespread PEV integration by funding infrastructure development, streamlining permit acquisitions, revising codes, training emergency personnel, educating the public, developing incentives, and encouraging public-private collaboration.³

FEDERAL

As part of the **American Recovery and Reinvestment Act (ARRA)**, the Department of Energy (DOE) was allocated \$400 million to create the Transportation Electrification Initiative. The Initiative provides \$360 million for vehicle and infrastructure development, with the goal of deploying 13,000 PEVs and 22,000 charging stations by December 2013.⁴ Recipients of ARRA PEV funding include trade associations, private enterprise groups, nonprofit organizations, and local governments.⁵

Project Examples:

1. The **EV Project** is a national program funded by a \$115 million DOE grant with additional private partner matches, and is managed by the clean energy tech company ECOTALITY. The EV Project deploys free PEV chargers to select residential/commercial sites in exchange for access to information on PEV deployment.⁶
2. The **ChargePoint America** program, sponsored by Coloumb Technologies, installs PEV charging stations in 10 U.S. regions for car owners of specified partner PEV brands. The no-cost chargers are designed to foster the adoption and readiness of PEVs throughout the country.⁷

3. The non-profit research and development organization **Pecan Street Project** in Austin, TX, maintains a 700-acre planned smart-grid demonstration community that is home to the largest non-fleet PEV concentration in America. Pecan Street offers \$7,500 rebates for residents who purchase a Chevrolet Volt (or other approved PEV), which is in addition to the \$7,500 federal EV tax credit. Pecan Street also provides home charging stations at no cost to residents. The project is collecting information on PEV integration within the community and testing whether roof solar electricity generation can power home PEV charging stations.⁸

The Department of Energy continues to promote PEV deployment through its **Clean Cities** initiative. There are 85 active Clean Cities coalitions across the country, bringing together local governments and communities with the private sector to implement alternative-transportation solutions, with a goal of reducing petroleum dependence by 2.5 billion gallons per year by 2020.⁹ In September 2011, Energy Secretary Steven Chu announced the “**Clean Cities’ Community Readiness and Planning for Electric Plug-In Vehicles and Charging Infrastructure**” awards, an \$8.5 million initiative for 16 projects in 24 states. Recipients are from multiple sectors and include the University of Hawaii, the Clean Energy Coalition and the City of Austin. Each project intends to establish comprehensive PEV deployment strategies for specified regions, addressing local PEV needs and challenges.

In his 2012 State of the Union Address, President Obama announced a **National Community Deployment Challenge** for 10 to 15 deployment communities to, “...serve as real-world laboratories, leveraging limited federal resources to develop different models to deploy advanced vehicles at scale.”¹⁰

REGIONAL/STATE/LOCAL

At the regional level, the **Northeast Electric Vehicle Network**, organized by the Transportation and Climate Initiative, brings together 10 states and the District of Columbia to prepare for region-wide PEV deployment.¹¹ The network is funded in part by a DOE grant and aims to unite public and private sector activity. “The ultimate goal...is two-fold. First, to ensure that motorists can drive electric vehicles with ease locally and region-wide, from northern New England to the District of Columbia. Second, [to create] consistent rules and standards across the entire region.”¹²

There are also ongoing deployment initiatives at the state level. In Hawaii, the country’s most oil dependent state, Hawaii’s State Energy Office developed the **EV Ready Program**. Recognizing PEV potential in Hawaii, the state government is supporting PEV integration and infrastructure development projects. Over 700 PEVs and 120 charging stations have been deployed so far.¹³ Other states such as California, Oregon, and Texas are working with stakeholders to promote PEV infrastructure development corresponding to PEV deployment hubs.

Several public-private partnerships are also underway to promote PEV deployment at the city level. For example, the city of Portland, Oregon partnered with Portland General Electric and Portland State University (PSU) to create “Electric Avenue,” a designated street on PSU’s campus featuring free PEV car and bike charging stations powered with renewable energy. The project intends to showcase PEV adaptation in an urban environment. Raleigh, Los Angeles, and New York City have also received global attention for establishing community-wide PEV readiness plans, providing PEV incentives, developing infrastructure, and promoting cross-sector collaboration.¹⁴

COMMERCIAL

Community deployment efforts in the private sector focus primarily on infrastructure development and accessibility for PEV customers. Walgreens is the largest retail host of PEV charging stations, with 800 in operation. Kohl’s has expanded their PEV charging stations this year to 52 locations, offering parking locations with free charging.¹⁵ Meanwhile, Google has developed a PEV charging station search option on Google Maps, helping integrate PEV infrastructure into existing technology applications.

FLEET DEPLOYMENT

Commercial and government vehicle fleets present a prime opportunity to rapidly deploy PEVs nationwide. PEVs, both cars and trucks, have the range to meet the daily driving needs of a majority of fleet applications and can offer fleet managers significant fuel savings and improved cost predictability. Fleet PEVs demonstrate to prospective private PEV owners how these new vehicles integrate with existing infrastructure and meet daily vehicle needs. Fleets also serve as concentrated PEV laboratories and data hubs, from which information can be used by automakers, utilities and researchers to improve overall electric vehicle performance.

FEDERAL

The federal government manages the largest vehicle fleet operation in the United States, totaling over 600,000 vehicles. In an effort to improve overall fuel-efficiency, the fleet is required to reduce fuel consumption by two percent annually through 2020 (EO 13514) and increase its annual alternative fuel use by 10 percent through 2015 (EO 13423).¹⁶ Federal agency vehicles must be purchased through the General Services Administration (GSA). The GSA enters contracts with commercial suppliers to streamline the procurement process and ensure reduced pricing on supplies for agencies.

In an effort to meet federal mandates, the GSA offers PEV selections for neighborhood, road, van, medium and light duty truck, and utility models. In 2012, PEVs were available through contracts for the Nissan Leaf, Ford Focus, Chevrolet Volt, Mitsubishi i EV, Smith Electric Vehicles (truck), Electric Vehicle International (truck, van, utility), Central Truck Zero Truck, Boulder EV (truck), and Navistar eStar (truck).¹⁷ The military has taken advantage of the PEV offerings, with the Marine Corps recently purchasing two Smith PEV trucks.¹⁸ Other military branches are transitioning to road-capable PEVs, such as the Volt, to replace non-tactical vehicles. According to the 2011 Federal Fleet Report, agencies operate 3,941 PEVs: 771 Civilian Agency, 3,127 Military Agency, and 43 Postal Service.¹⁹ To bolster additional support for the Federal mandates, the GSA launched the first “Electric Vehicle Pilot Program” in 2011, which will provide 116 PEVs (101 Volts, 10 Leafs, and 5 THINKs) to 20 Federal agencies. The program is expected to save 29,000 gallons of fuel and \$116,000 annually.²⁰

STATE/LOCAL

State governments, including Hawaii and Washington, are investing in PEV motor pool vehicles to promote alternative vehicle usage and fulfill state-mandated Renewable Portfolio Standards. School bus systems are another potential outlet for localized fleet deployment. Given their short and predictable driving routes and schedules, school buses could become an important PEV fleet target. The first PEV school buses, produced by Trans Tech Bus, began operation in California’s Kings Canyon Unified School District in 2011.²¹

COMMERCIAL

The emergence of PEV fleets also extends into the private sector. Frito Lay will soon have the largest all-electric commercial fleet deployed in the United States with 275 electric trucks, eliminating 500,000 gallons of fuel use annually.²² The United Parcel Service is deploying 100 new PEVs in California in 2012, which will displace 126,000 gallons of fuel annually.²³ Other companies including Staples, Coca Cola, and FedEx are also integrating PEV trucks into their fleets. One of the most ambitious targets, set by General Electric in 2010, calls for 25,000 company PEVs to be on the road by 2015. Automakers are finding ways to promote electric vehicles without requiring ownership. BMW, for example, has partnered with the DriveNow EV Sharing Program in San Francisco to provide 70 BMW ActiveEs for hourly rentals. Rental car companies, such as Hertz and Enterprise Rent-a-Car, are integrating PEVs into their rental car fleet options for customers.

LEGISLATION

On May 3, 2011, Rep. Judy Biggert (R-IL) introduced the ***Electric Vehicle Deployment Act of 2011 (H.R. 1685)***. The bill, much the same as its 2010 predecessor, proposes a competitive program “to accelerate, provide incentives for, and examine the challenges and opportunities associated with the deployment of electric drive vehicles...”²⁴ Ten states, tribes, or local governments would be selected to receive funding for deployment communities initiatives. The bill requires recipients to provide “a minimum of \$2,000 in benefits to each of the first 50,000 consumers who purchase electric drive vehicles.” The bill also extends federal support for charging infrastructure, as well as a requirement that GSA acquire 1,000 PEVs.

Sen. Jeff Merkley (D-OR) reintroduced the Senate’s version of PEV deployment legislation on May 11, 2011. The ***Promoting Electric Vehicles Act of 2011 (S. 948)*** would establish competitive grants for community deployment initiatives (totaling \$250 million), as well as PEV fleet upgrades for private companies (totaling \$300 million). The bill calls for the development of a national PEV deployment plan, including building code guidelines and training programs for the PEV workforce. It also could amend EPCA 2005 to authorize loan guarantees for EPV fleets and charging infrastructure which are operational before December 31, 2016.²⁵

On August 2, 2012, Rep. Janice Hahn (D-CA) introduced the ***Electric Vehicle Purchasing Credit Extension Act of 2012 (H.R. 6323)***. The bill would increase the federal tax credit for new qualified plug-in electric drive motor vehicles from a maximum of \$7,500 to \$10,000.²⁶ The full tax credit would continue to be available for each automaker’s first 200,000 eligible PEVs.

For further information see:

[Electric Vehicle Community Readiness Project Awards](#) from the DOE Clean Cities Initiative

[Plug-In Electric Vehicle Handbook for Fleet Managers](#) from the DOE Clean Cities Initiative

[Deployment of Hybrid and Plug-In Electric Vehicles](#) from the DOE Alternatives Fuel Data Center

[EV City Casebook](#) from the Electric Vehicles Initiative

[Standardization Roadmap for Electric Vehicles](#) from the American National Standards Institute (ANSI)

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This fact sheet is available electronically (with hyperlinks and endnotes) at www.eesi.org/papers.

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- ² The White House, Office of the Press Secretary. 2012. [Fact Sheet: All of the Above Approach to American Energy](#). March. The White House (accessed September 12, 2012).
- ³ Department of Energy, Clean Cities Program. 2011. [Electric Vehicle Community Readiness Project Awards](#). November. Department of Energy, Energy Efficiency and Renewable Energy Program. (accessed September 7, 2012).
- ⁴ Department of Energy, Clean Cities Program. 2011. [DOE Spotlights EV Chargers Installed Under the Recovery Act](#). May. Department of Energy, Energy Efficiency and Renewable Energy Program. (accessed September 7, 2012).
- ⁵ Department of Energy, Alternative Fuels Data Center. 2012. [Deployment of Hybrid and Plug-In Electric Vehicles](#). August. Department of Energy, Energy Efficiency and Renewable Energy Program. (accessed September 6, 2012).
- ⁶ ["The EV Project Overview."](#) 2012. The EV Project (accessed September 10, 2012).
- ⁷ ["ChargePoint America Program Info."](#) 2012. ChargePoint America (accessed September 10, 2012).
- ⁸ Stroh, Katie. 2012. [Electric Vehicle Program Piloted in Austin](#). *The Daily Post*. August 13 (accessed September 23, 2012).
- ⁹ Department of Energy, Clean Cities Program. 2012 [Clean Cities Goals and Accomplishments](#). July. Department of Energy, Energy Efficiency and Renewable Energy Program. (accessed September 12, 2012).
- ¹⁰ The White House, Office of the Press Secretary. 2012. [Fact Sheet: All-of-the-Above Approach to American Energy](#). March. The White House. (accessed September 12, 2012).
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- ¹² State of New Jersey, Department of Environmental Protection. 2011. [Federal Grant Awarded for Regional Electric Vehicle Network](#). September. State of New Jersey. (accessed September 19, 2012).
- ¹³ Hawaii State Energy Office. 2012. [Hawaii State Energy Office EV Ready Fact Sheet](#). March. Department of Business, Economic Development, and Tourism (accessed September 17, 2012).
- ¹⁴ ["EV City Casebook."](#) 2012. Electric Vehicles Initiative (accessed September 18, 2012).
- ¹⁵ ["Kohl's Department Stores Expands EV Charging."](#) September 2012. Hybridcars. (accessed September 17, 2012).
- ¹⁶ ["Program Areas."](#) Federal Facilities, Environmental Stewardship, and Compliance Assistance Center. (accessed September 10, 2012).
- ¹⁷ ["2012 Model Year Alternative Fuel Vehicle Guide."](#) April 2012. General Services Administration. (accessed September 17, 2012).
- ¹⁸ ["Smith Electric Vehicles Awarded GSA Schedule."](#) January 2009. Smith Electric Vehicles. (accessed September 11, 2012).
- ¹⁹ U.S. General Services Administration. 2012. [2011 Federal Fleet Report](#). May. U.S. General Services Administration. (accessed September 10, 2012).
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- ²¹ Ramsey, Mike. 2011. [Forget the Prius. The Future of Electric is the School Bus](#). *The Wall Street Journal*, December 28. (accessed September 12, 2012).
- ²² ["Leading the Charge in California, Frito-Lay Rolls Out Growing Fleet of All-Electric Delivery Trucks."](#) August 2012. FritoLay. (accessed September 10, 2012).
- ²³ United Postal Service 2011. [Corporate Sustainability Report 2011](#). UPS. (accessed September 18, 2011).
- ²⁴ U.S. Congress. House. *Electric Vehicle Deployment Act of 2011*. H.R. 1685. 112th Cong., 1st sess. (May 3, 2011). (accessed September 7, 2012).
- ²⁵ U.S. Congress. Senate. *Promoting Electric Vehicles Act of 2011*. S. 948. 112th Cong., 1st sess. (May 11, 2012). (accessed September 25, 2012).
- ²⁶ U.S. Congress. House. [Electric Vehicle Purchasing Credit Extension Act of 2012](#). H.R. 6323. 112th Cong., 2nd sess. (August 2, 2012). (accessed September 23, 2012).