HAWAII

Building a Comprehensive Electric Transportation Network

Overview
Hawaii’s goal was to analyze transportation sector pathways to meet the Hawaii Clean Energy Initiative (HCEI). The HCEI is a partnership between the state and the US Department of Energy with the long-term goal of achieving 70 percent of Hawaii’s energy from clean energy sources by 2030. The state currently relies on expensive imported petroleum for nearly all of its transportation needs, making this sector the most challenging for meeting the HCEI goal.

Hawaii sees the opportunity to deploy advanced electric vehicles (EV) running on clean electricity sources as a promising way to reduce the use of costly imported oil. As a result of their participation in the NGA Center’s Clean Energy States Grant, Hawaii made significant progress at both the technical and policy level to speed deployment of EVs to market.

On the technical end, a state report found that “Hawaii is EV ready.” At the same time, the state-led Transportation Working Group on Non-Petroleum Fuels and Vehicles helped spur policy initiatives on EV infrastructure, vehicle demonstrations, and outreach partnership developments.

Clean Energy States Grant Goals
To understand and facilitate a successful transportation sector transformation, Hawaii sought to analyze various policy and regulatory options and their potential impact on consumer adoption of grid-connected vehicles; infrastructure requirements for successful deployment; and potential technical and financial benefits for the State’s electricity grids. Specific research needs identified included:

• Analysis of issues associated with large scale grid-connected EV adoption;

• Assessment of cost, feasibility, and location of vehicle charging and battery exchange infrastructure; and

• Analysis of scenarios for various levels of EV adoption.

Accomplishments and Challenges
During the grant period, Hawaii completed an Analysis of Smart Electric Vehicle Infrastructure Requirements for Hawaii, addressing the analytic needs identified above. The report concluded that EVs can provide numerous energy and economic benefits to Hawaii, particularly as their introduction can occur at a rate compatible with the introduction of renewable electricity on Hawaii’s electrical grid. The report also looked at the technical and policy challenges to EV deployment.

Based in part on the underlying research report, the state has embarked on a number of pilots or initiatives designed to spur EV adoption. These include public-private agreements, incentive programs, and mandates. Each is aimed at reducing the transportation sector’s dependence on petroleum. They include the following activities:

• On October 20, 2008, an Energy Agreement was signed by the State of Hawaii and the Hawaiian Electric Companies to accelerate energy efficiency and renewable energy. The agreement calls for the deployment of thousands of EVs;

• From July through November 2008, the Transportation Working Group of the Hawaii Clean Energy Initiative evaluated a variety of potential initiatives to reduce the petroleum dependence of Hawaii’s transportation sector. The Working Group has since been expanded to include automobile dealers, vehicle manufacturers, rental car companies, and others; and

• Act 156, signed by Governor Linda Lingle in June 2009, establishes the development of non-fossil fuel transportation as a state policy goal, requires the designation of parking spaces for EVs, requires state and county agencies to prioritize EV infrastructure development, and provides EV and other advanced vehicle grant programs. EVs must be designed to be charged primarily by renewable energy sources or be able to be integrated intelligently with the electrical grid.

In addition, the state announced the following pilots and demonstrations:

• Better Place and Phoenix Motorcars both announced EV projects in Hawaii;

• Six fleets entered into partnership with the Advanced Vehicle Testing Activity of the U.S. Department of Energy to use plug-in hybrid electric vehicles (PHEVs) on Oahu and Maui;

• The Hawaii County Building is equipped with 22 EV plug-in conduits; the new Civic Center will include 14 EV conduits, with plans for expansion; and

• The State of Hawaii’s Department of Hawaiian Home Lands announced plans to build homes that will feature a variety of energy efficiency measures and include an “EV ready” garage. Approximately 250 of these homes are under construction.
Next Steps
The next steps aggressively engage the private sector. In the near term, the state is seeking to create additional public-private partnerships with automobile dealers, municipalities, original equipment manufacturers, and conversion companies. The aim of these partnerships is to bring new products to the Hawaiian market. The Hawaii Automobile Dealers Association is likely to make EVs a theme of its upcoming auto show.

Partnerships and demonstrations of electric and PHEVs are occurring in state and municipal fleets. This includes the establishment of an EV users group in partnership with the Honolulu Clean Cities Coalition and local NGOs. These efforts are utilizing public outreach events to involve and inform the public on the emissions and oil savings that can occur from an integrated, comprehensive approach to electrifying Hawaii’s vehicle markets.