EV Developer FAQs

Electric Vehicles (EVs) in the State of Hawaii

1) Why is Hawaii an ideal location for EVs?

Hawaii's unique combination of energy challenges and opportunities make it an ideal place to showcase the technical and economic viability of EVs. Because of its geographic isolation, Hawaii has the highest gasoline prices in the nation. And as an island state, it is especially vulnerable to the environmental impacts of carbon emissions. On the other hand, its abundance of renewable resources, mild climate, limited driving distances, constant influx of tourists, and political will to change make Hawaii an excellent location for EVs.

2) Where can I learn about Hawaii's EV market?

Please reference electricvehicle.hawaii.gov for resources, reports, laws and programs relating to Hawaii's EV market.

3) How many EVs are in Hawaii?

For a monthly update of the number of registered EVs in Hawaii please reference the spreadsheet monthly energy data http://dbedt.hawaii.gov/economic/data_reports/energy-trends/

4) What is the incentive to buy an EV if the majority of Hawaii' fuel for electricity generation is from imported oil?

Research shows that in Hawaii the amount of fossil fuel required per vehicle to travel one mile in an battery electric vehicle (BEV) is 1/3 less than the amount of fossil fuel required by a similar sized gasoline-fueled vehicle over the same distance. This does translate to savings for Hawaii EV drivers. The BEV's efficiency means that the Hawaii saves money per vehicle mile traveled in an EV.

Other EV incentives drivers can benefit from include—cruising through traffic in the high-occupancy vehicle lane, parking free of charge at State and County-owned locations, and enjoying the cost savings that off-peak charging provide, such as utility Time of Use Rates.

For those who have installed rooftop solar photovoltaic (PV) systems, the electricity generated by the solar panels to power their homes offsets the cost of the electricity they draw from the grid to charge their vehicles, increasing their savings even more. For cost saving case studies about EV owners in Hawaii, please reference http://www.nrel.gov/docs/fy13osti/53667.pdf

The Abercrombie Administration is taking these measures because we need to find less costly alternatives to importing oil - which is still what Hawaii uses for the majority of our electricity and transportation needs. Since 2008, state policies have been focused on building a diversified energy mix and creating jobs in a new clean energy economy featuring energy efficiency measures, renewable energy, and EVs to reduce our dependency on fossil fuels.

Please reference the following sources: http://energy.hawaii.gov/wp-content/uploads/2011/09/EVReportMauiElectricVehicleAlliance2012.pdf http://www.heco.com/vcmcontent/IntegratedResource/IRP/PDF/AppendixM_HECO_IRP4_Final_Fuel_Price_Forecast_06102008.pdf

5) How many publicly available EV charging stations are installed on each island and where are they located?

For an updated list of publically available charging stations and locations in Hawaii, please reference the smartphone or web-based EV charging station mobile application electricvehicle.hawaii.gov. The application is designed to help drivers locate publically available EV charging stations statewide. If you would like to add your charger to the list, please complete the form located on electricvehicle.hawaii.gov or http://energy.hawaii.gov/share-a-new-ev-charging-station

6) Where can I get information regarding EV laws?

Please visit electricvehicle.hawaii.gov for information regarding Hawaii's EV policies. You can also follow the legislative process including proposed changes to laws on www.capitol.hawaii.gov.

Hawaii's EV policies and incentives that successfully convinced major automobile manufacturers to target Hawaii as early launch market for EVs include:

- Free parking is provided in State and County Government lots, facilities, and at parking meters (Act 168 of 2012, formerly Act 290 of 1997).
- Vehicles with Electric Vehicle license plates are allowed access to High Occupancy Vehicle Lanes (Act 168 of 2012).
- Parking lots with at least one hundred public parking spaces are required to have at least one parking space, equipped with an EV charging system, reserved exclusively for EVs(Act 089 of 2012, formerly Act 156 of 2009).
- Multi-family residential dwellings or townhouses cannot prohibit owners from installing EV chargers in their assigned parking spaces (Act 186 of 2010).

7) Has the EV free parking law changed?

Act 168, passed in the 2012 Legislative Session replaced the previous EV free parking law, Act 290 of 1997. The new law, Act 168 provides time limits on free parking for EVs.

Fees will be charged if:

- An EV is parked at a State or County lot or street meter for more than two and one-half
- hours of metered parking, or the maximum amount of time the meter allows, whichever
- is longer; or,
- An EV is parked in increments longer than one twenty-four-hour day, including weekly,
- monthly, or annual parking permits.

For further information, please refer to: http://www.capitol.hawaii.gov/session2012/bills/GM1271.PDF

8) Are all parking lots required to install EV chargers?

If your parking lot has at least one hundred parking spaces available for use by the general public, then you will need to install at least one parking space exclusively for EVs and have the parking stall equipped with an EV charging system. The EV stall can be located anywhere in the parking lot or structure by July 1, 2012; provided that no parking space designated for EVs shall displace or reduce accessible stalls required by the Americans with Disabilities Act Accessibility Guidelines. For more information please reference: http://www.capitol.hawaii.gov/session2012/bills/GM1190_.PDF.

9) Are parks, including beach parks, required to reserve and install an EV charging station? By definition, what constitutes "places of public accommodation"? Are parks considered places of public accommodation?

Yes, among other facilities, a park (including a beach park), a campsite, trailer facility, or other recreation facility parks, are considered places of public accommodation. Such places with 100 or more parking stalls are required to have at least one EV designated stall with a charging station. For a complete definition please refer to Hawaii Revised Statue section 489-2, or the following link: http://www.capitol.hawaii.gov/hrscurrent/Vol11_Ch0476-0490/HRS0489/HRS_0489-0002.

10) Where can I find information regarding the State's prohibition on condo associations preventing home owners from installing electric vehicle home chargers?

Chapter 196-7.5 of the Hawaii Revised Statutes addresses this. Please reference the following link for a full reference of this law: http://capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0196/HRS_0196-0007_0005.htm

11) Are there any EV related Research and Development projects occurring in Hawaii?

As Hawaii's energy generation mix shifts to more renewable sources, and as the number of EVs drawing electricity from the grid reaches a critical mass, new challenges may come into play. Smart grid technology and evolving EV charging systems could help usher in a new era where EVs and building load management are closely coupled to facilitate higher levels of renewables on the grid. Hawaii is poised to become an early adopter and international test bed for this technology.

- **U.S. Army Demonstration** The U.S. Army is already demonstrating integrated power systems developed by its Detroit-based Tank Automotive Research, Development and Engineering Center (TARDEC) as part of the Smart-Charging Micro Grid (SCMG) pilot at the U.S. Army Garrison-Hawaii.

- **Maui Smart Grid Project** Hawaii and Japan have launched the Japan-U.S. Grid Partnership. The project is part of the Hawaii-Okinawa Partnership on Clean and Efficient Energy Development and Deployment, which was signed by DOE; the Ministry of Economy, Trade and Industry of Japan; the state of Hawaii; and the Prefecture of Okinawa in June 2010. The project is aimed at optimizing the integration of renewable energy resources onto the grid while at the same time preparing the electrical system for increased use of EVs. Led by Hitachi, the project will test advanced smart grid and smart meter technologies, along with an advanced EV charging management system and a network of publicly available DC fast chargers on Maui.

12) Does the utility offer any special rates for public EV charging stations?

Hawaiian Electric, Maui Electric and Hawaii Electric Light Company are offering EV Charging Rates to get EV-Ready and learn how we can better serve customers as Hawaii driving goes electric. Up to 1,000 customers (residential and commercial) on Oahu, 300 in Maui County and 300 on Hawaii Island can participate in this pilot offering. Hawaiian Electric wants EV owners to charge vehicles during off-peak hours (9 p.m. to 7 a.m.) as much as possible, so the EV charging offers time-of-use (TOU) rates.

The Hawaiian Electric Companies is also offering two new EVpilot charging rates designed for the operation of direct current (DC) fast charging. A DC fast charging station can bring an "empty" EV battery to an 80 percent charge in about 30 minutes .

The Commercial Public Electric Vehicle Charging Facility Service rate (Schedule EV-F) will make it financially attractive for business customers to provide fast charging. Businesses can take advantage of EV time-of-use rate without a "demand charge" typically assessed to commercial customers. A DC fast charging station delivers a quicker charge but at a higher demand. Demand charge represents the electric utility's cost to maintain the capacity to meet a commercial customer's highest demand for a fixed period.

The Commercial Public Electric Vehicle Charging Service rate (Schedule EV-U), allows the Hawaiian Electric Companies to operate up to 25 publicly accessible DC fast charging facilities across Oahu, Maui County and Hawaii Island where drivers could quickly recharge their vehicles for a per-session fee. It also allows the Hawaiian Electric utilities to work with the EV industry to manage electric vehicle EV charging more effectively and do research on load control and demand response.

For more information go to: goev.heco.com

13) What public charging station manufactures and networks have a presence in Hawaii?

AeroVironment
Blink
ChargePoint
Hitachi
Legrand
OpConnect
PepStations
Recharge Power
Schneider Electric
SemaConnect
Shorepower
Volta

14) Is there a directory of Hawaii EV Industry representatives?

Yes, the State Energy Office manages the Hawaii EV Industry Directory. The State Energy Office is offering to post contact information for parties offering EV services in Hawaii. If you wish to provide contact information to be publicly available via this website for purposes of offering potential EV/charging equipment services, please go to electricvehicle.hawaii.gov. You can also fill out the following form to be added, http://forms.hawaiicleanenergyinitiative.org/view.php?id=15

15) Does the state offer rebates or tax credits for EVs?

The State of Hawaii currently does not offer EV tax credits or EV rebates.

16) Is funding available to purchase EVs through the Hawaii EV Ready Rebate Program?

Funding for the Hawaii EV Ready Rebate Program was provided by federal American Recovery and Reinvestment Act funds that have been fully expended. Additional funding for this program is no longer available and applications are no longer being accepted. The program is now closed.

17) Are there plans to renew the Hawaii EV Ready Rebate Program?
At this time, there are no plans to renew the program.

18) What is the actual number of charge spots installed under the ARRA grants?
Under the ARRA Hawaii EV Ready Grant Program, 227 Level 2 EV Charger and six DC Fast Chargers were installed at 98 locations across Hawaii.

19) Are there federal incentives or any other incentives for EVs or chargers?

Yes. The federal government currently offers tax credits for EVs and EV chargers. The minimum credit amount for EVs is $2,500, and the credit may be up to $7,500, based on each vehicle's traction battery capacity and the gross vehicle weight rating. This tax credit applies to vehicles acquired after December 31, 2009. EV charging stations installed between January 1, 2006, and December 31, 2013, are eligible for a tax credit of 30% of the cost, not to exceed $30,000. Charging station owners who install qualified equipment at multiple sites are allowed to use the credit towards each location. Consumers who purchased qualified residential charging equipment prior to December 31, 2013, may receive a tax credit of up to $1,000. Unused credits that qualify as general business tax credits, as defined by the Internal Revenue Service (IRS), may be carried backward one year and carried forward 20 years. For more information, go to electricvehicle.hawaii.gov or check out Qualified Plug-In Electric Drive Motor Vehicle Tax Credit at;
http://www.afdc.energy.gov/fuels/laws/3270/US.

20) How much does it usually cost to "fill" or charge my EV at a public charging station? How long does it take?

The cost to charge an EV at a public charging station can vary. The owners of the public EV charging stations determine the charging fee or whether to provide complimentary charges. For a list of public charging stations and fees please reference the EV Stations Hawaii smart phone or web-based mobile application found on electricvehicle.hawaii.gov or available to download on apple and android app stores.

Charging times vary based on how depleted the battery is, how much energy it holds, the type of battery, and the type of charging station. The charging time can range from 15 minutes to 20 hours or more, depending on these factors. Using a Level 2 charging station, charging times may range from 3 to 8 hours for a full charge. Charging time for a DC Fast Charging station may likely range from a few minutes to 30 minutes for a full charge.

21) How far can a fully charged EV go?

The majority of commercially available all-battery electric EVs have an average range of 70 to 100

miles on a fully charged battery. The range depends in part on driving conditions and habits. For more information, reference the Department of Energy's Plug In Electric Vehicle Handbook for Consumers, http://www.afdc.energy.gov/pdfs/51226.pdf

22) How much does it cost to install a charging station?

The cost of installing publicly available EV charging equipment varies widely, depending on two main categories, cost of product and cost of installation. Product costs vary depending on brand and features. Installation costs are primarily driven by the desired location and placement of charging station, availability of electrical capacity, distance from the electrical panels to charging station and site specific installation issues such as trenching.

Publically available Level 2 EV charging station installation projects in Hawaii range from $4,000 to $25,000 or more depending on the factors mentioned above. While prices vary, a relatively simple project in Hawaii typically costs approximately $6,000-$8,000 per installed charger. For more information on the installation of EV chargers please reference the Hawaii EV Ready Guidebook for Commercial EV Charging Station Installations on electricvehicle.hawaii.gov.

23) How do I install a charging station?

For information on the installation of EV chargers please reference the Hawaii EV Ready Guidebook for Commercial EV Charging Station Installations on electricvehicle.hawaii.gov.