TAKECHARGE
ELECTRIC VEHICLES IN THE SACRAMENTO REGION
Nationally, Volt and PEV Annual Sales Lead Prius and HEV Sales During First 2 Years of Rollout

- 4,000 PEVs in Region Today
- 74,633 PEVs Forecasted in Region by 2025

Graph showing sales trends for Total PEV, Total Hybrid, and Prius.
2016 PEV Sales in the U.S.
Who Are PEV Drivers?

Common Driver Demographics

- 95% of PEV owners own 2 or more cars
- 68% have owned a hybrid vehicle at some point
- 96% own their own home
- 87% have Bachelors Degrees
- 79% have household incomes ≥ $100,000
- 93% live in a multi-person household
- 91% live in single-family homes with attached garages
- 42% have solar panels on their homes

# of people that received a rebate from the Clean Vehicle Rebate Project (CVRP)*

- Yuba County: 10
- Placer County: 259
- Sutter County: 4
- Yolo County: 168
- Sacramento County: 654
- El Dorado County: 143

*The CVRP provides incentives of up to $2,500 for the purchase or lease of zero-emission and plug-in hybrid electric vehicles. The CVRP is funded by the CA Environmental Protection Agency's Air Resources Board.
Infrastructure Forecast

= 10,000 PEVs
Driving Behavior Influences Charging Behavior

- 70+ miles per day
- 26 miles per charge
- 30 minutes to charge
- 9 hours of charging
- 12 hours of driving
Most Charging will be Low-Voltage Charging at Home
Locations of DC Fast Chargers in Sacramento County

- SMUD Operational
- SMUD Planned
- NRG Operational
- NRG Planned
- Tesla Operational
Standard SMUD DC Fast Charger Design / Business Model

- Stock design sized for two DC Fast Chargers and one Level 2 EVSE Units
  - Only one DCFC and 1 L2 installed at the onset

- Designs also vary by location
  - SMUD HQ designed for one standalone DCFC
  - Amtrak Sac Valley Station designed for two standalone DC Fast Chargers

- Forward looking toward ADA Compliance

- 23¢/kWh flat rate fee
  - 21¢/kWh for electricity, 2¢ City or County Tax

- Greenlots Back Office Network / Customer Interface
  - Credit Card, RFID, Cell Phone App, Pay by Phone payment capability
  - OCPP System (multiple hardware makes being used)
Lessons learned from our original activity went into our SACOG-SMUD CEC Proposal

• New Business Process Development
  • Outsourced customer service model
  • New EV flat commercial rate (No TOU or demand charge elements)
  • Cash flow / Information management model
  • Community tax collection for direct utility electricity sales

• Upfront Land Negotiation/Design Efforts are Laborious
  • Timelines average over a year and are equal to construction costs
  • Property owners / managers are generally unengaged/disinterested

• Disability Access trumps utility service proximity

• Hardware selection for higher temperatures was good

• Despite high reliability some operational gaps have occurred

• SMUD risk aversion / security cameras have been cost drivers
Additional Lessons Learned from current effort

• Earlier SMUD activity had already solved a lot of organization issues
  • Business approach and processes, Rates, Taxes
  • Hardware selection

• Property negotiation screening process needs to be improved
  • Strategic agreements with large multi-site property owners
  • Better screening processes needed
  • Take it or leave it negotiation screening tactics
  • Figure out a revenue stream for the property owner

• Focus siting activities on utility property or with single entity owners
  • Utility property requires no negotiations
  • Multi-entity property ownership complicates/slows negotiations
  • Weingarten’s and Simon Properties are better models
  • Best model is where a business and property owner are one in the same

• Incorporating charging into new building / remodeling construction can be equally slow
  • Dependent on the rest of the construction activities
  • Less overall headaches and lower cost