California’s Evolving PEV Market

Nov. 19, 2013
2013 Behavior, Energy & Climate Change (BECC) Conference
Presentation Outline

• Market Overview
• California PEV Owner Survey
• Round 3 Data and Findings
• Next Steps and Future Work
California Market Overview

- PEV sales are growing rapidly
- Policy and Program Support
California Market Overview

- ARB – Clean Vehicle Rebate Project (CVRP)
  - ~40K rebates
  - Records in the last 3 consecutive months
  - Over 100 applications/day
CVRP Participation

Participation Rate for Q1 2013

~76% CVRP Participation Rate
• Ineligible 24-mo leases (5-10% of market)
• Eligible consumers who do not apply
CA PEV Owner Survey

• Longitudinal study of PEV owners in California.
• Partners UC Davis & UT Austin
• Focus on use, charging infrastructure and behavior, technology diffusion.
Round 1
Population: 2,526
Respondents: 1,419
56.2% Response Rate
Round 2
Population: 4,329
Respondents: 1,202
\textbf{27.8\%} Response Rate
(578 repeat)
Round 3
Population: 8,756
Respondents: 3,881
44.3% Response Rate
(422 repeat Rnd 1 & 2)
Distribution of Respondents

Survey population
PEV drivers for six months or longer as of October 2012

8,756

Total respondents
3,881

Top three vehicle types driven by respondents

Nissan Leaf
Chevrolet Volt
Toyota Prius Plug-in Hybrid

Distribution of survey respondents by county

California Environmental Protection Agency
Air Resources Board
Demographic Composition

- Owner demographics are consistent across vehicle models
Motivation for Purchase

- Owners selected from ten options
- Three consistently ranked highest
  - Environmental impact
  - Save money on fuel
  - HOV lane access

Top three motivators for purchase:
- Nissan Leaf: 38% Environment, 20% Saving money, 16% HOV lane access
- Chevrolet Volt: 34% Environment, 18% Saving money, 27% HOV lane access
- Toyota Prius Plug-in Hybrid: 57% Environment, 16% Saving money, 18% HOV lane access
Motivation for Purchase

- Geography of HOV
- Prius owner preference for HOV is consistent across the state

*Metropolitan Transportation Commission (MTC) covers the Bay area, Southern California Association of Governments (SCAG) includes LA County and Orange County, San Diego Association of Governments (SANDAG) includes San Diego County only, and Sacramento Area Council of Governments (SACOG) includes Sacramento County.
Data shows variability in the time required by owners to collect info on PEVs

- Vehicle Model
- Household Income
Residential Charging

- Residential Level 2 charger installation and TOU rate adoption varies with battery size

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- L2 Chargers
  - Leaf: 88%
  - Volt: 46%
  - Prius: 12%

- EV TOU Rates
  - Leaf: 61%
  - Volt: 48%
  - Prius: 27%
Public Charging Satisfaction

- Satisfaction with public infrastructure remains low, but is showing measurable improvement among Leaf owners.
CVRP Rebates by Month

- Round 1
- Round 2
- Round 3
- Round 4

Population: ~8K

Number of Rebates
Survey Moving Forward

• Semi Real-Time Data
  • Surveyed at time of rebate approval/check distribution
• Shorter Instrument
• Focus Areas:
  Demographics, Info channels, Dealer experience
• Initial blast of 15,400 surveys
  • Response rate ~18%
  • Future Population ~700/wk

![Graph showing number of rebates by month from April 2013 to October 2013.]

Center for Sustainable Energy
California Environmental Protection Agency
Air Resources Board
Demo/Diff Dashboard

- Interactive Dashboard of Demographic data
- Semi-real time updates integrated with application process
- Anonymized raw data downloads
Conclusions/Takeaways

• California’s PEV market is growing rapidly, both in size and complexity;

• The motivations driving PEV adoption are diverse, creating opportunities and challenges for OEMs and policymakers

• Longitudinal data and real-time updates are key to understanding and responding to market dynamics
Thank you

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