

# SACEV GENERAL MEETING

**May 13, 2015**

- 6:00 Introduction, Trivia Quiz w/Awards
- 6:10 Airport and Sacramento County Update
- 6:15 PG&E Update – Morgan Davis, PG&E
- 6:40 Standards Update – Ralph Troute, SMUD
- 7:00 Close - Mixer with speakers and members

Thanks to our host, Thanks to Eugen Dunlap  
Nissan Motors for Recording



Thanks to Phil Haupt Electric for  
refreshments



**Events: 15**

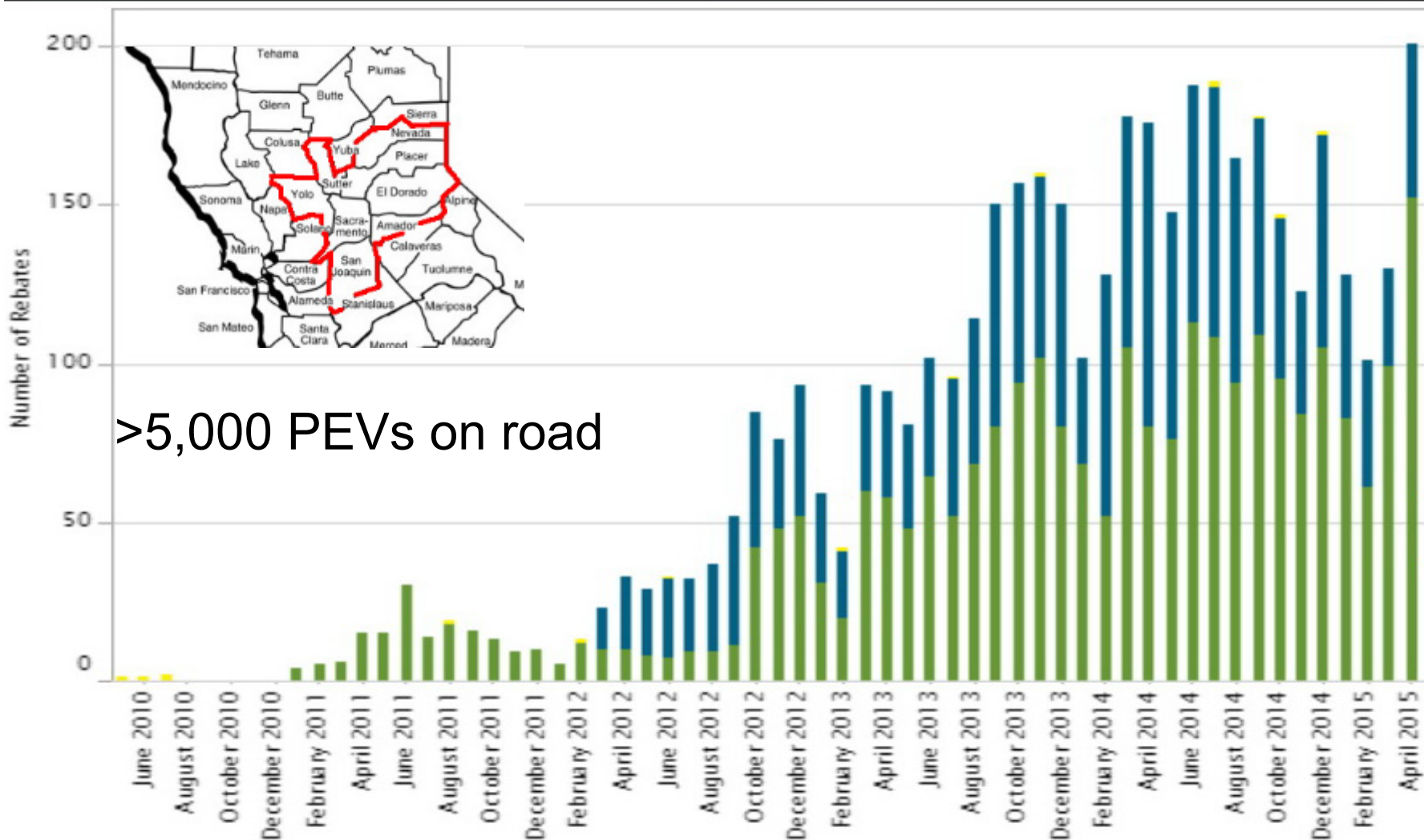
**Interactions: 3,053 people**

**Cars Shown: 82**

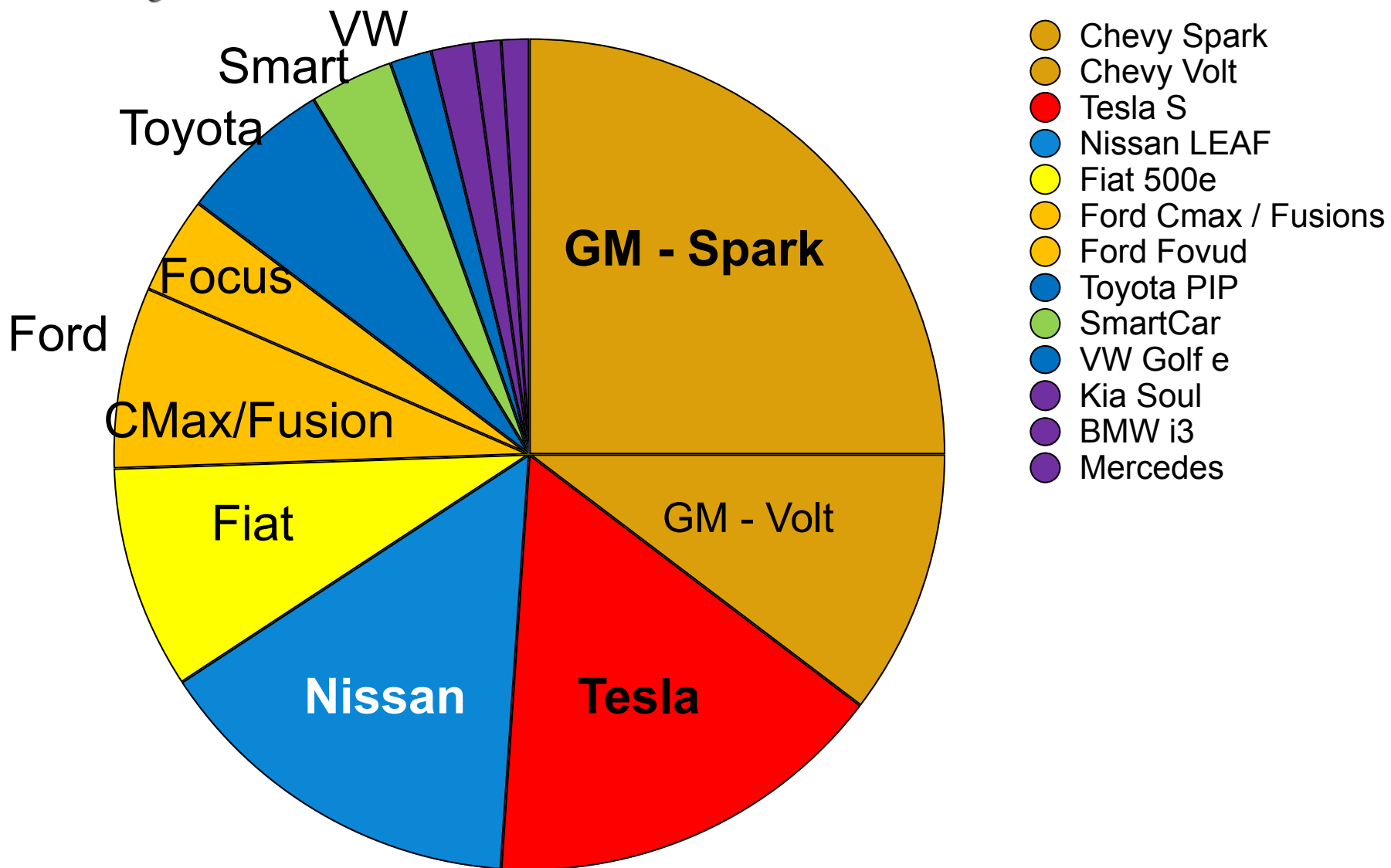
**Test Drives: 15**



## CVRP Rebates by Month



# APRIL 2015 SALES SPLIT



April 2015

# EV RACING – JUNE 10TH



\$10 EV Special Deal

# WHO GETS TO DRIVE IT?



[Video Two](#)



Lloyd  
Levine



- EV Issues in Sac County
- Supervisor Phil Serna
- SMUD, SACOG, Air District, Airport, Sac Fleet Mgr
- Developing a 6 – 9 month plan, and ID'ing immediate short term actions

# AIRPORT UPDATE



Randal Friedman



# Electric Vehicle Infrastructure and Education Program Overview

**Sacramento Electric Vehicle Association**

**3/11/2015**

**Cal Silcox & Morgan Davis**  
**EV Education and Outreach**  
**Pacific Gas & Electric**

PG&E does not request that you participate in the CPUC proceedings on its application or take a particular position regarding PG&E's application before the CPUC. We are providing this information for your consideration, and it is solely your decision whether to participate in the CPUC proceeding or what position to take in the event you do participate.





## **PG&E EV Infrastructure and Education Program Guiding Principles**



**Support California climate policy**



**Enable customer EV adoption**



**Make electricity widely available as a transportation fuel**



**Utilize EV load for system benefit**



## PG&E and California are seeing strong EV market growth, but infrastructure barriers to adoption still exist

Cumulative EV Sales by County<sup>1</sup>  
PG&E Service Area



PG&E's service area is adding **2,200** new EVs per month. Adoption has been strongest around the Bay Area.

**0.7%** of 2014 new vehicle sales in USA were electric vehicles

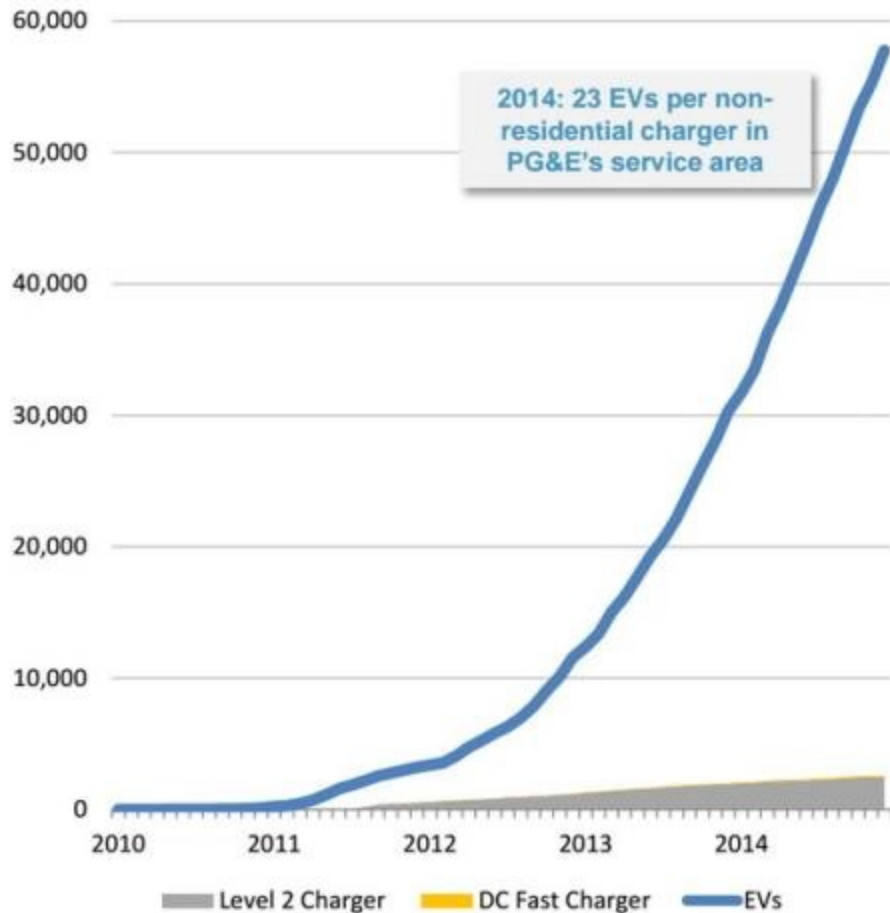
**3.2%** of 2014 new vehicle sales in CA were electric vehicles

**4.5%** of 2014 new vehicle sales in PG&E service area were electric vehicles



# Public charging infrastructure is not keeping pace with EV adoption in California

Cumulative EV registrations<sup>1</sup> and charger deployments<sup>2</sup> in PG&E service area



## Key EV challenges today

- Higher upfront cost of EVs relative to conventional vehicle
- Range anxiety and lack of available charging infrastructure
- Charging availability for customers in multi-unit dwellings and workplaces
- Lack of easily-accessible customer information about EVs
- High infrastructure upgrade costs for commercial and fleet customers

Utility can play key role in addressing



# PG&E program designed to accelerate EV adoption through charging infrastructure and education



## Proposal Overview

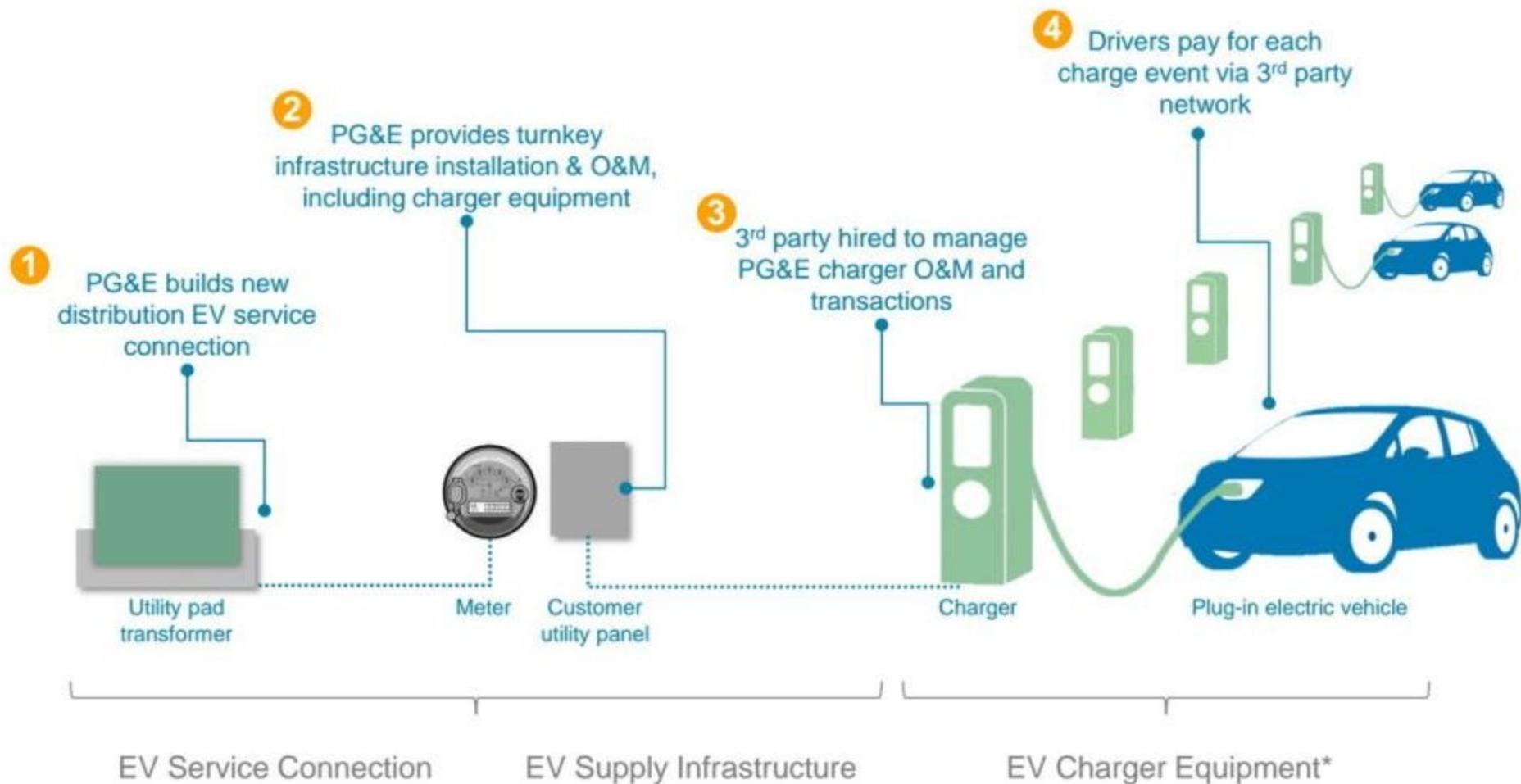
- Deploy 25,000 Level 2 chargers and 100 DC fast chargers
- 5 year program to build, own, and maintain 25% of the 2020 EV charging infrastructure need
- Deliver turnkey charging solutions with integrated education to accelerate EV adoption
- Target commercial and public locations, with approx. 10% of installations in disadvantaged communities
- Offer approved PG&E time-of-use rate to EV drivers

## Operational details

- No upfront cost to site host
- 3rd parties contracted for charger installation, O&M, & billing
- Site hosts receive outreach tools and to drive awareness & help accelerate adoption
- Platform enables future smart charging to support renewables integration and drive grid benefits



# PG&E delivers turnkey infrastructure installation, partners with 3<sup>rd</sup> parties for charger operations





# Education and outreach tools drive EV engagement and charger utilization



## **Chargers in 3 key areas: public sites, workplaces and multi-unit dwellings**

- Leverage PG&E customer relationships to recruit and support potential site hosts



## **Program resources and best-practice guides drive EV & charger adoption**

- Utilize workplace networks, tenant & homeowner associations, and local outreach



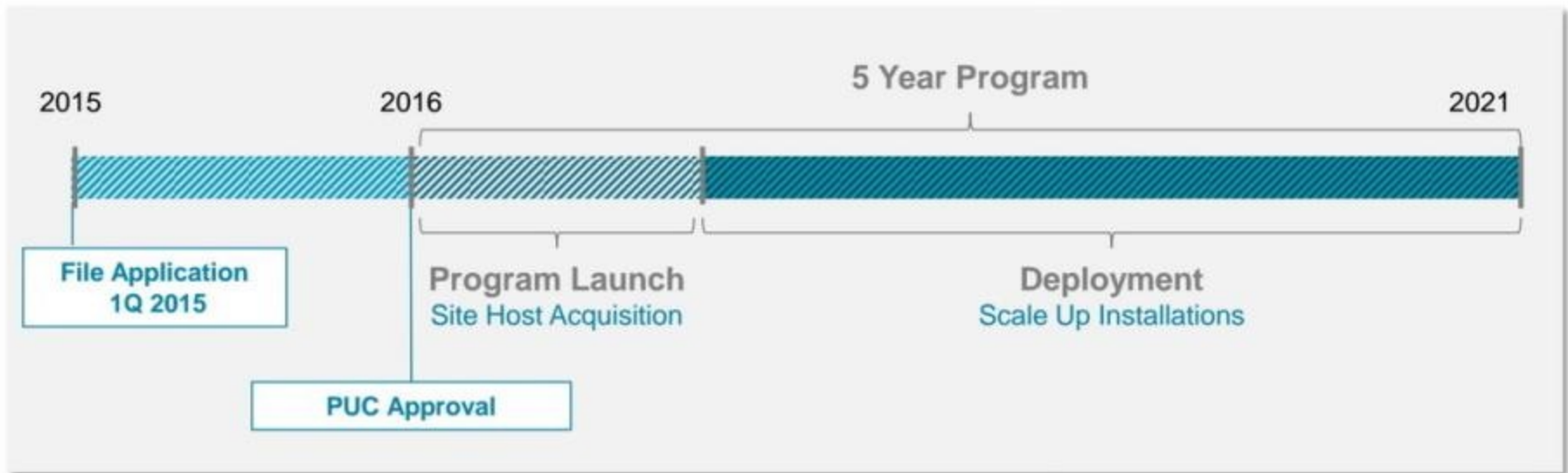
## **Online tools to increase consumer understanding about EV ownership**

- Educate and inform broader customer base through total cost of ownership and GHG reduction calculators, travel planning maps, and other interactive tools



## Next Steps

- CPUC application filed February 9, 2015; anticipate 12+ month regulatory proceeding
- Request for proposals for operation contractor(s) and site host acquisition begins upon regulatory approval
- Infrastructure installation ramp-up begins in late 2016; scheduled to be completed in late 2021

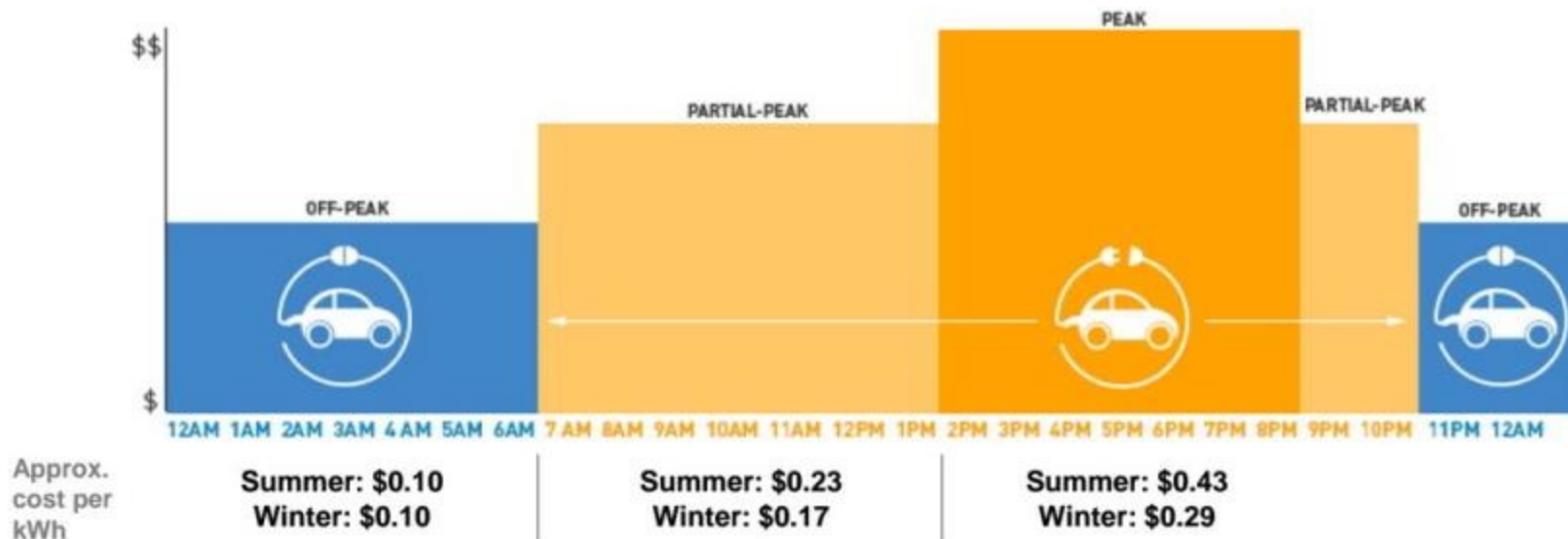




# EV Rates

**LOWEST COST**  
IDEAL CHARGING TIMES: 11PM - 7AM

**HIGHER COST**  
AVOID CHARGING: 7AM - 11PM



## Best candidates for EV rates

- **High energy users:** consistently Tier 3 & 4 on PG&E bill
- **High mileage drivers:** long commute; heavy recharging at home over night
- **Away from home:** nobody is at home using energy during partial-peak/peak hours

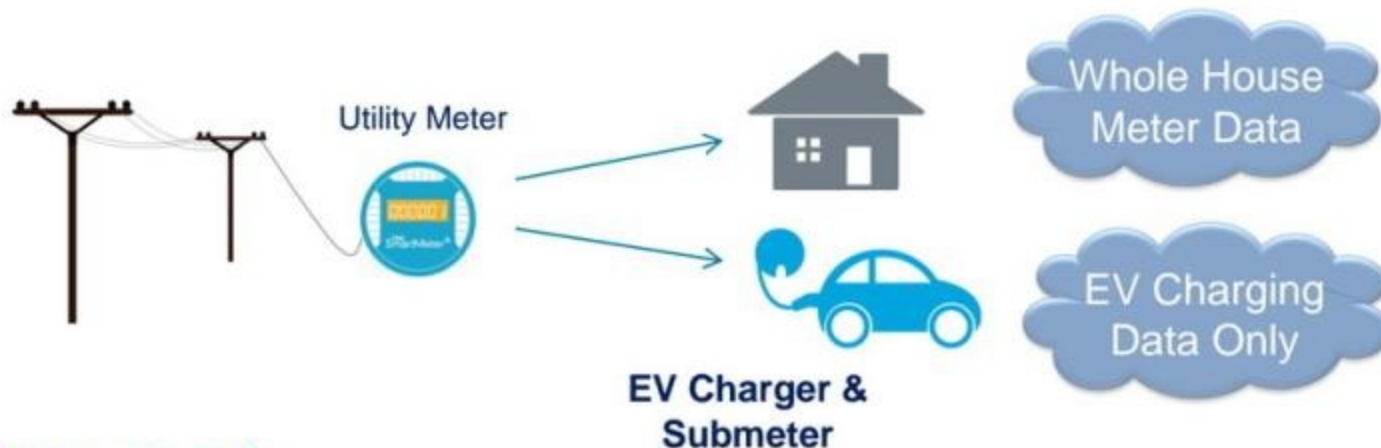
Visit [www.pge.com/EV](http://www.pge.com/EV) for more information on rates and to sign up

Visit [www.pge.com/myenergy](http://www.pge.com/myenergy) >> My Usage >> My Rates for rate estimates based on past usage

Call us at 1-877-743-7782, Monday-Friday, 7 a.m.-6 p.m. for a rate analysis



# EV Submetering Pilot



## What is it?

The PG&E submetering pilot allows EV customers to have a subtractive meter for their EV usage for 12 months. After 12 months, customer goes back to original rate.



## Who can enroll?

PG&E residential and commercial customers that can install an eligible submeter that will charge their vehicle



## How do you enroll?

Enroll with a CPUC eligible Meter Data Management Agent from our website:  
<http://www.pge.com/en/myhome/saveenergymoney/pev/submetering/index.page?>

Pilot enrollment ends August 31<sup>st</sup>, 2015

# Questions?



# Energy R&D Program Review

.....  
Ralph Troute  
Electric Transportation  
.....

October 22, 2014

Powering forward. Together.



# DC Fast Charging

## Technology / Objective:

- Develop and deploy DC Fast Charging in the SMUD service district
- Address Range Confidence and increase PEV Adoption
- Supports SMUD Brand Image
- Gain knowledge on the cost to develop and serve this new retail business model.

## Benefits / Payoff:

- Gain knowledge on the new business model
- Increase PEV adoption and associated energy revenue for our service district
- Build SMUD brand to support electric transportation

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## Technical Challenges / Background:

- Creation of a entirely new retail business model
- Design: mechanical and electrical for construction
- SAP setup for billing required new DC Fast Charger Rate to collect the taxes
- Network controls and outsourcing customer service
- Accounting and treasury process

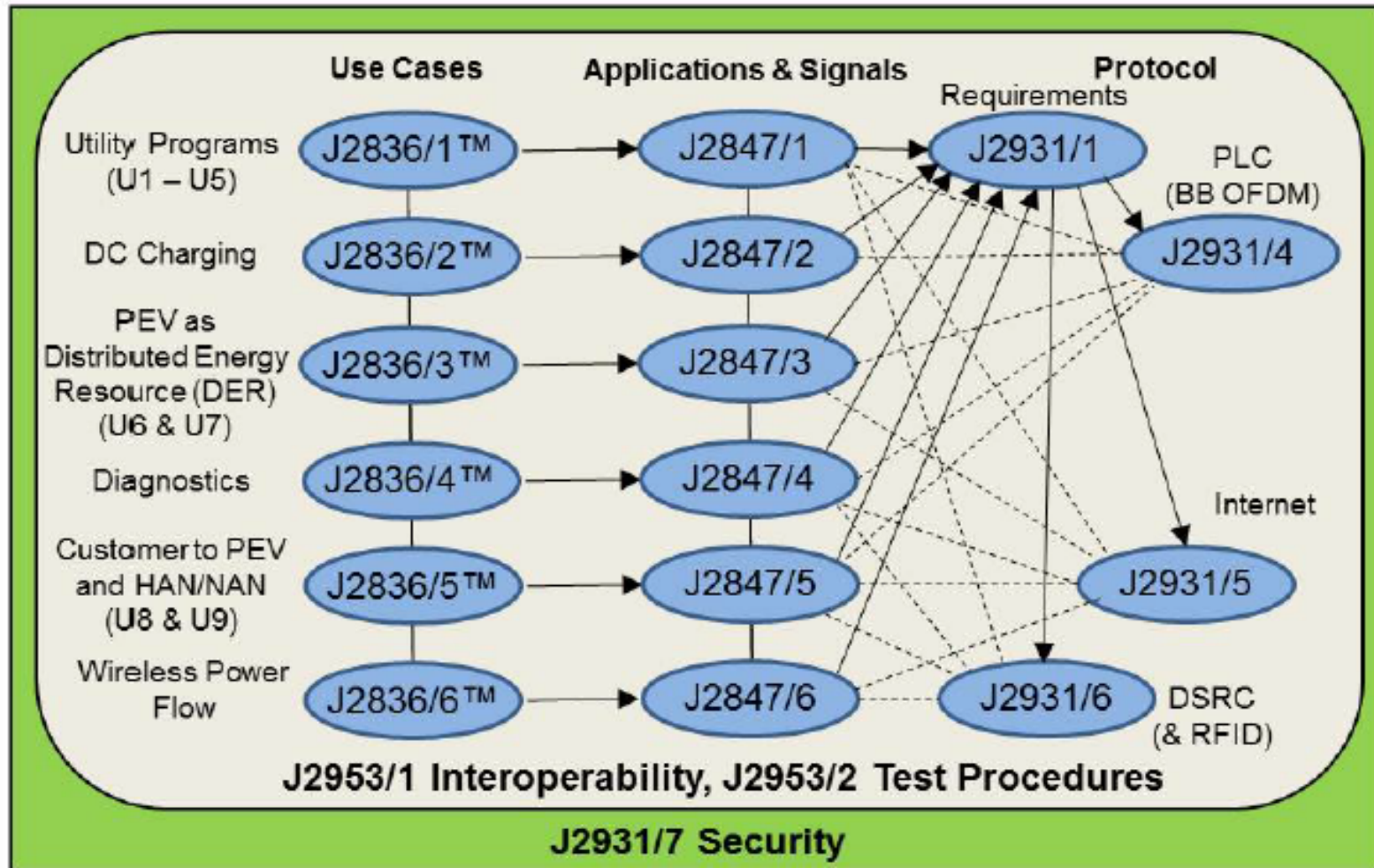
## Participants / Schedule / Funding:

- SMUD HQ, Amtrak, Citrus Heights
- HQ soft opening 3/14 with a Grand Opening 3/27
- Funding: Original budget was for eight sites. Due to cost per site will now have three sites.
- Schedule: SMUD real estate is negotiating contracts with the Amtrak and Citrus Heights.

# Standards

- SAE
  - 18 New standards for EV's
    - Utilities, DC Charging, V2G, Diagnostics, Customer HAN / SEP2.0, Interoperability, Testing and Cyber Security
- NIST (consumer protection)
  - Handbook 130: Uniform laws and regulations
    - Marking, labels and signs
  - Handbook 44: Codes for EV Fueling
    - Regulations for metering, revenue collection and calibration

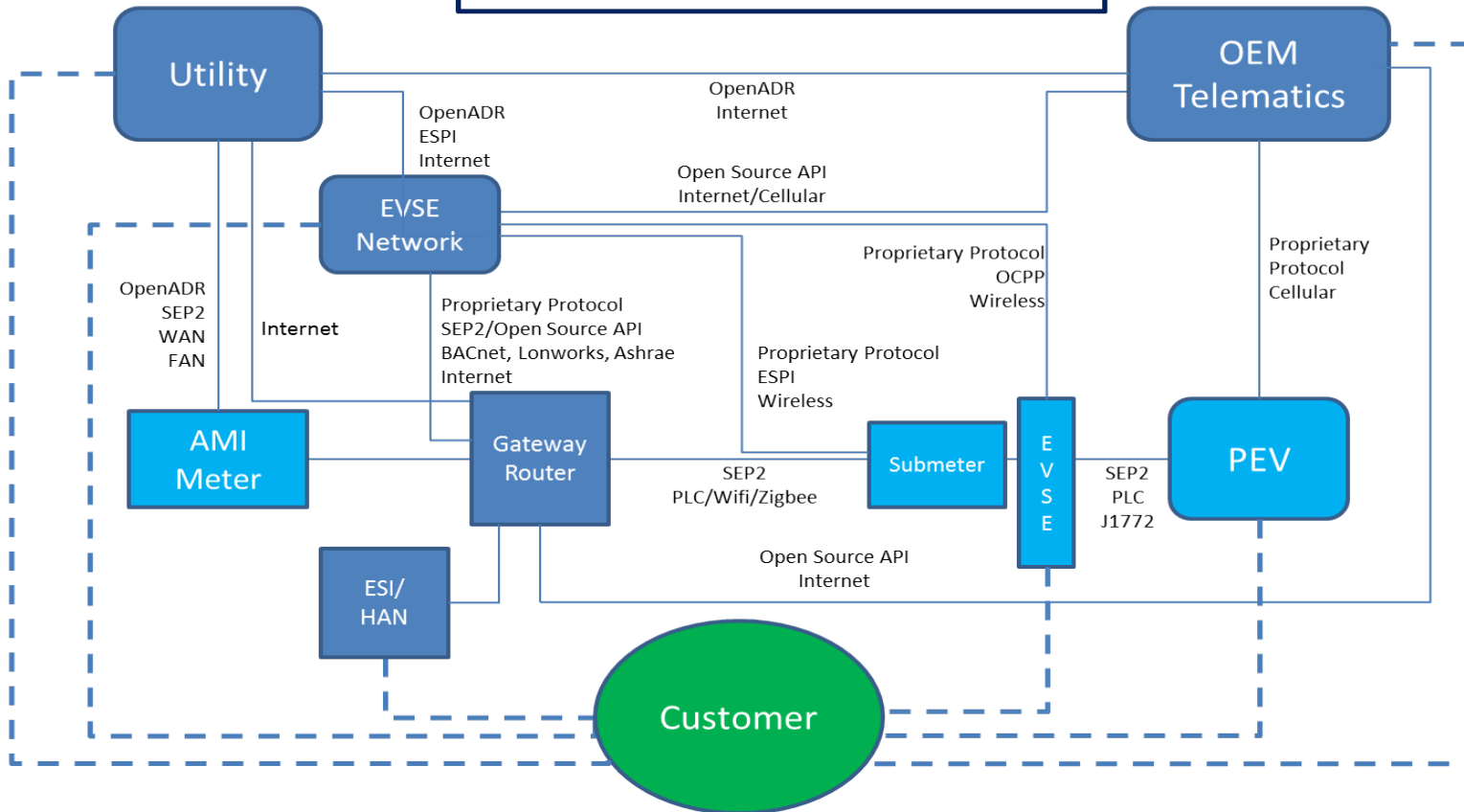
# Document Interaction



# SAE – Utility Communications

- DC Fast Charging
  - SAE DCFC standard is harmonized with IEC 15118
- OEM's (GM, Ford, Chrysler, others)
  - Not all vehicles will have communications capability
    - OEM's don't see a unified movement in one direction for customer service interface
  - PEV's may use IEC 15118 which is a XML based protocol and not compatible with SEP2.0
    - EU automakers are united with IEC 15118
    - Not all US and Japanese OEM's agree to SEP2.0
      - Toyota has opted-out for a private communications protocol
    - Some OEM's want SEP2.0 to be “cloud based”

## Customer Interface Architecture



— — Interface to Customer can be  
Smart Phone APP, Website, In-Home  
Display, EVSE Display, or  
In-Vehicle Display

# NIST

- **Handbook 130**
  - Provides a general outline for the sale of electricity as a vehicle fuel
  - Code is 3 pages for PEV's
  - New revision was released 2014
    - State of California legislators have not adopted this new revision
- **Handbook 44**
  - Drafted passed National Work Group Ballet (8/21/14)
  - National Weights and Measurement Committee in July 2015
    - If approved, CFR in 1/1/2016
    - Then the states Rulemaking adopts the standard
      - California DFA would recommend adoption in 7/1/16
      - Grand father existing equipment till \_\_\_\_?

# Accomplishments / Progress / Results

- SMUD HQ design site opened March 14, 2014
- Two additional sites selected and generic design complete
- SMUD Real Estate Service is negotiating a sublease agreement with the property owners at Nugget Markets at Elk Gove and South Sacramento and Sacramento Food Coop

# Future Plans (CY 2014 and beyond)

- The CEC/SACOG grant: 3 DCFC parking lots
  - Nugget Market, Elk Grove
  - Nugget Market, South Sacramento
  - Sacramento Food Coop, S street
- Sale for Resale for Profit
  - SMUD Co-branding value
  - Special Rates for co-branding versus non-cobranding
  - Rule 16
  - Proposition 26 legislation:
    - SMUD must charge based on cost of service
    - Cross-subsidization is prohibited

# ADA Layout

