



Achieving Targets Through 2030 Technologies & Fuels

Sustainable Transportation Energy Pathways Symposium
5/12/2015





Pacific Gas & Electric Company



Energy services for over 15 MM people:

- 5.2 MM Electric customer accounts
- 4.4 MM Natural Gas accounts

70,000 square miles with diverse topography, climates and customers

20,000 employees

A regulated investor-owned utility

Independent Transmission System Operator

Ranked “Greenest” utility 2009 and 2010





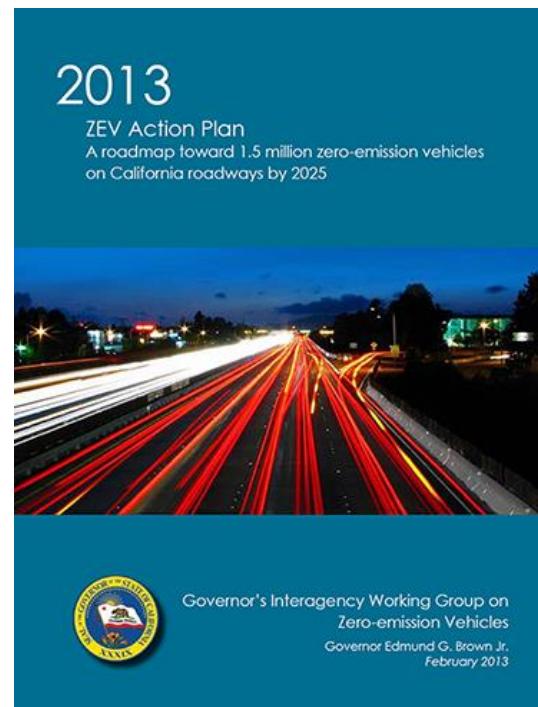
Electric vehicle market is gaining momentum, and California is focused on accelerating adoption

Electric Vehicle (EV) Market Conditions

- EV offerings are growing significantly each year (20+ models on the market today; 30+ planned for 2016)
- Sales growth limited by high vehicle cost and range anxiety
- EV adoption is outpacing infrastructure deployments

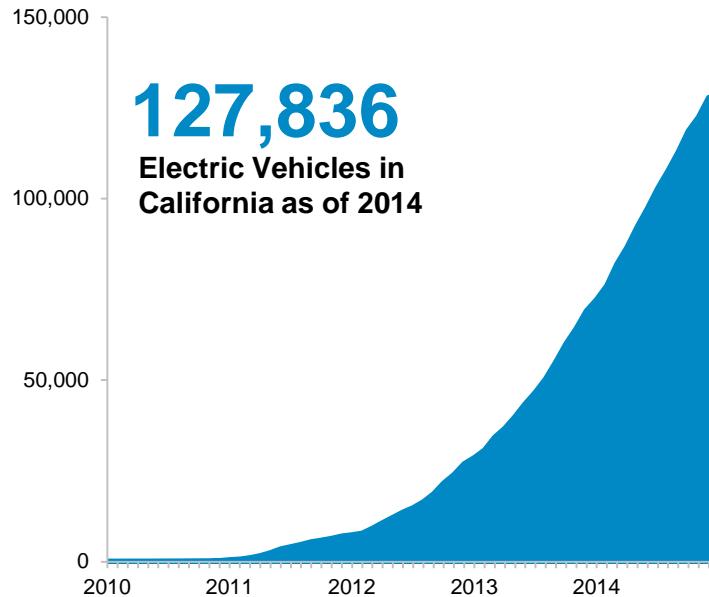
State Focus on EV Adoption

- January 2013: Governor Jerry Brown issued the Zero Emission Vehicle (ZEV) Action Plan calling for 1.5 million ZEVs in California by 2025, and the infrastructure to support 1 million EVs by 2020
- December 2014: California Public Utilities Commission (CPUC) repealed 2011 prohibition on investor-owned utility (IOU) involvement in EV infrastructure market
- January 2015: Governor Brown's inaugural address proposed to reduce petroleum use in cars and trucks by up to 50 percent by 2030



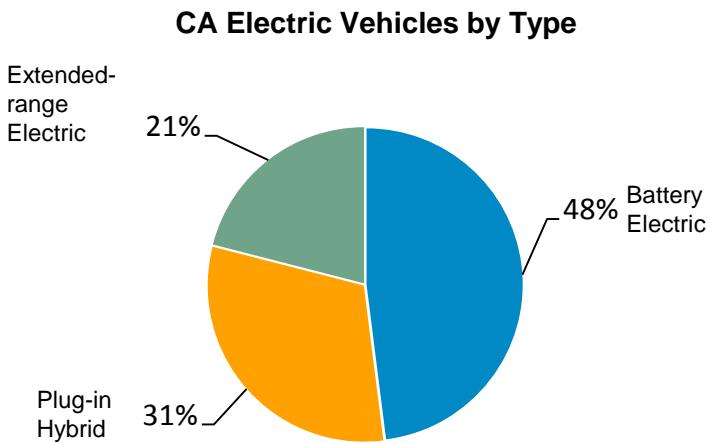


California's Electric Vehicle Market EOY 2014

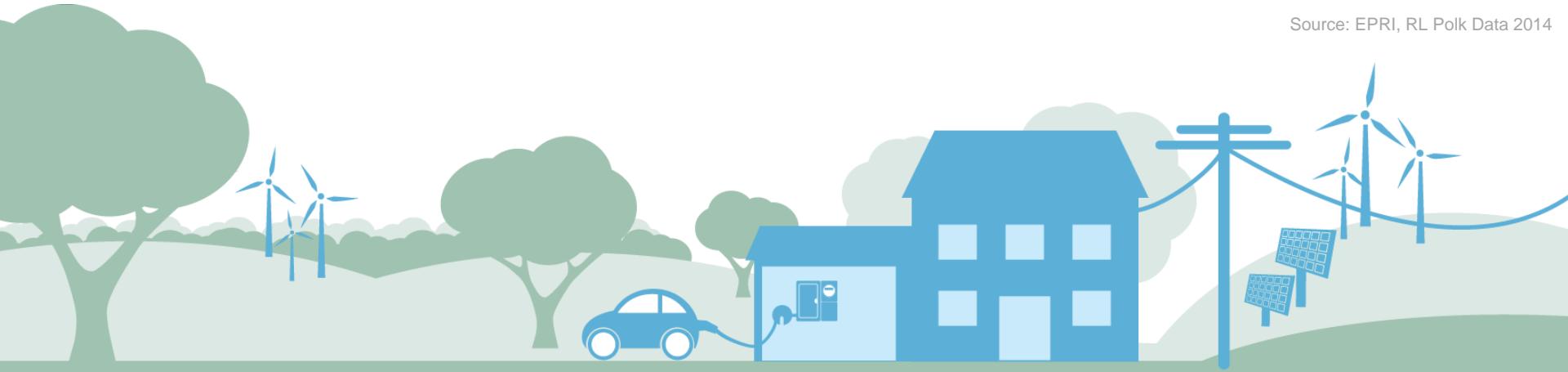


127,836
Electric Vehicles in
California as of 2014

45%
of all EVs in the
U.S. are in
California.



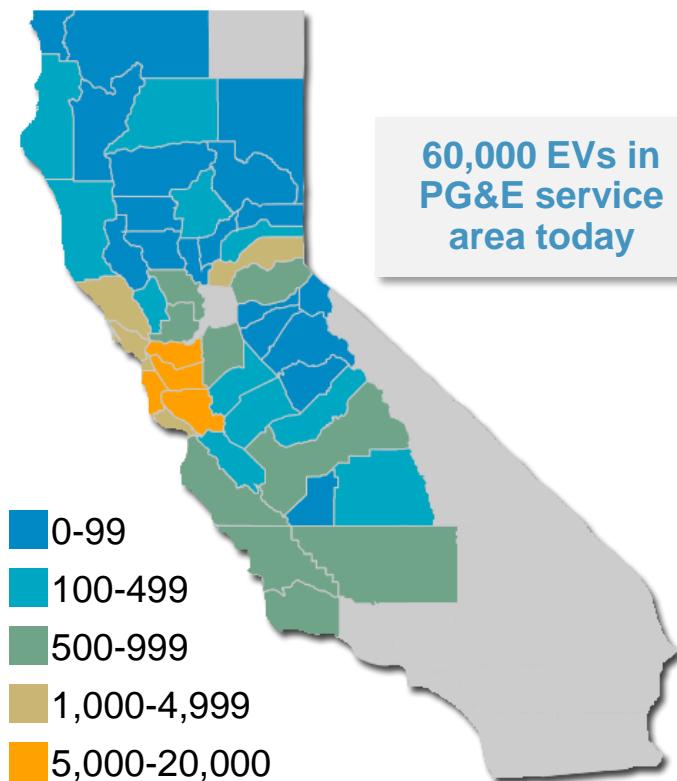
Source: EPRI, RL Polk Data 2014



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

Cumulative EV Sales by County¹

PG&E Service Area



PG&E's service area added 27,400 new EVs in 2014, effectively doubling in one year.

Adoption has been strongest around the Bay Area.

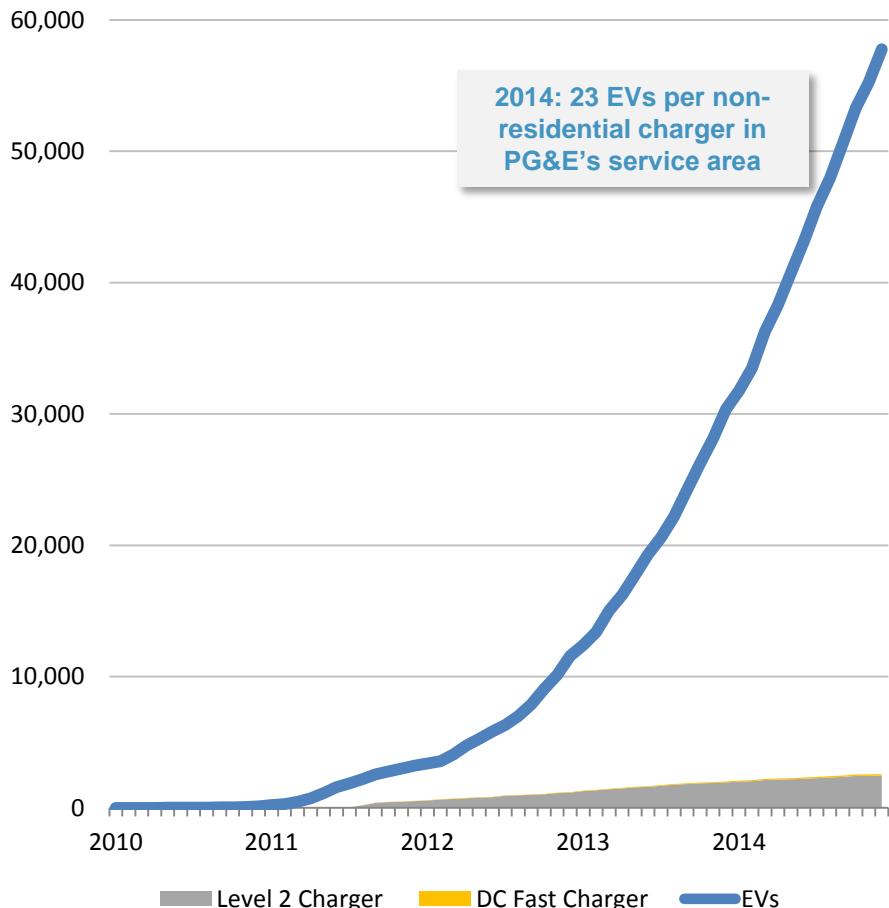
0.7% of 2014 new vehicle sales in USA were electric vehicles

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 registrations¹ and charger deployments² 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 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 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

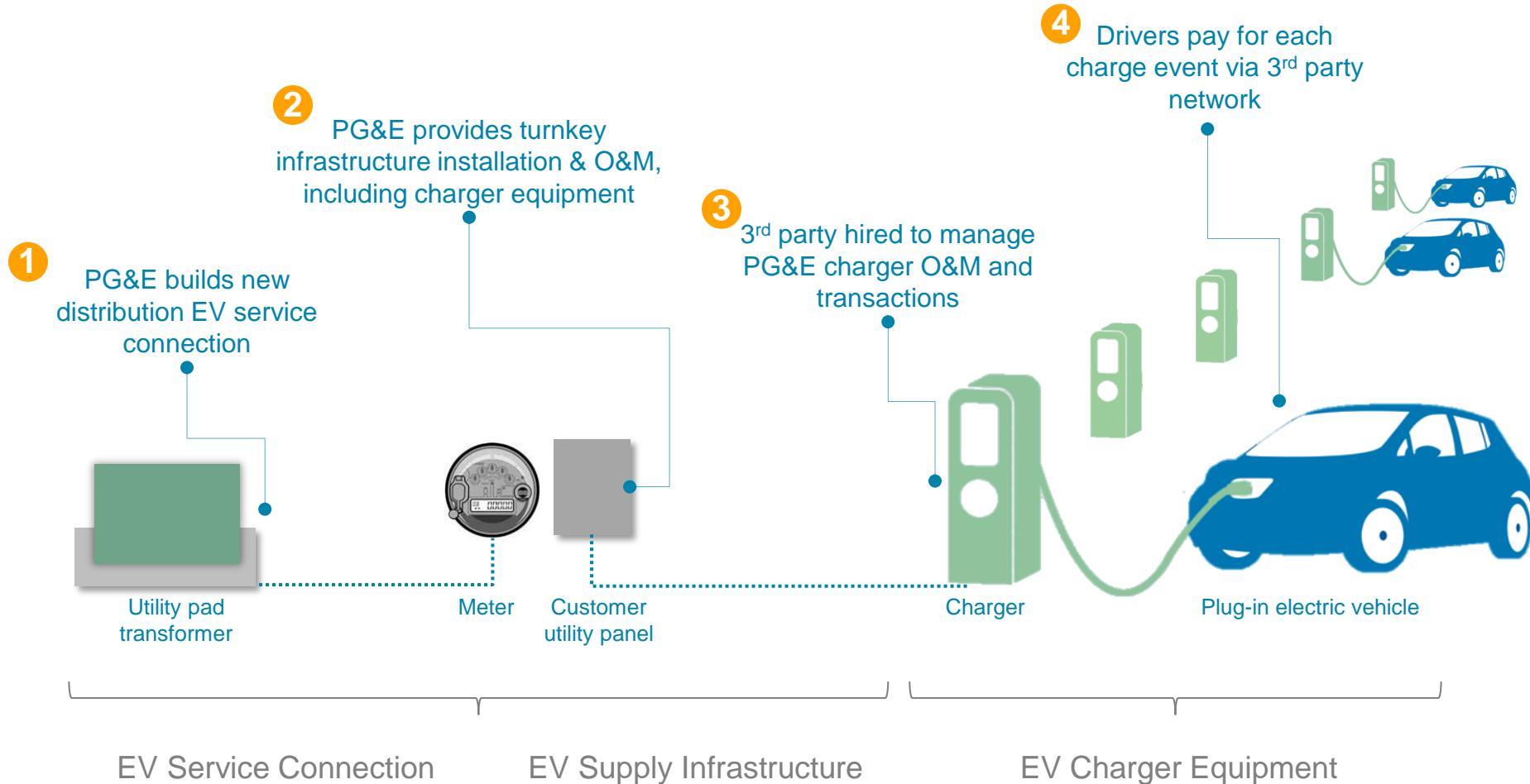
- No upfront cost to site host
- 3rd parties contracted for charger installation, O&M, & billing
- Site hosts receive outreach tools and to drive awareness & help accelerate adoption
- Platform enables future smart charging to support renewables integration and drive grid benefits

Program Timeline

- 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



PG&E delivers turnkey infrastructure installation, partners with 3rd parties for charger operations



Thank You!

