

# Electric Vehicles



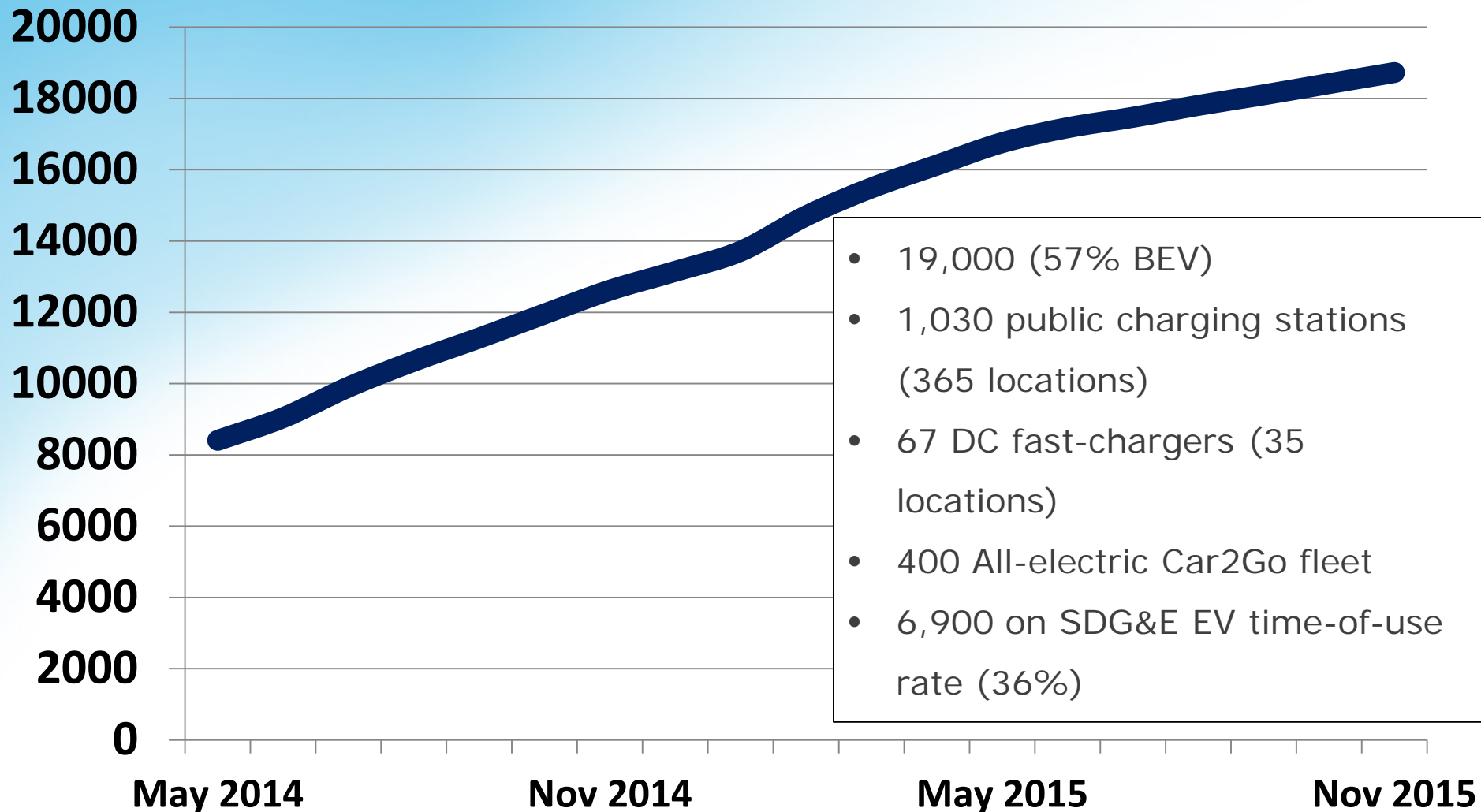
A  Sempra Energy utility<sup>®</sup>

**Thomas Bialek PhD, PE**  
**Chief Engineer**

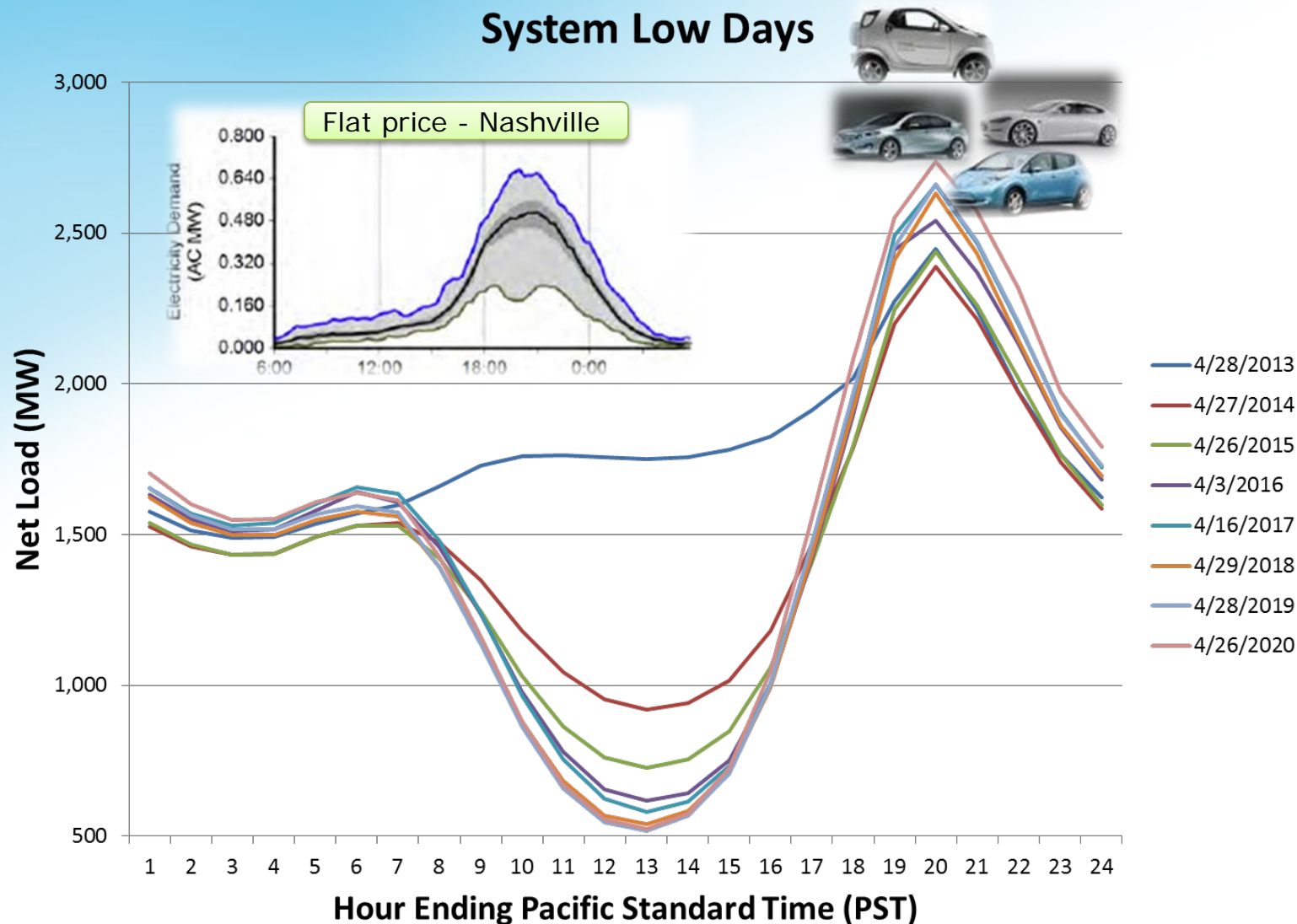
February 9, 2016



# San Diego Regional EV Growth



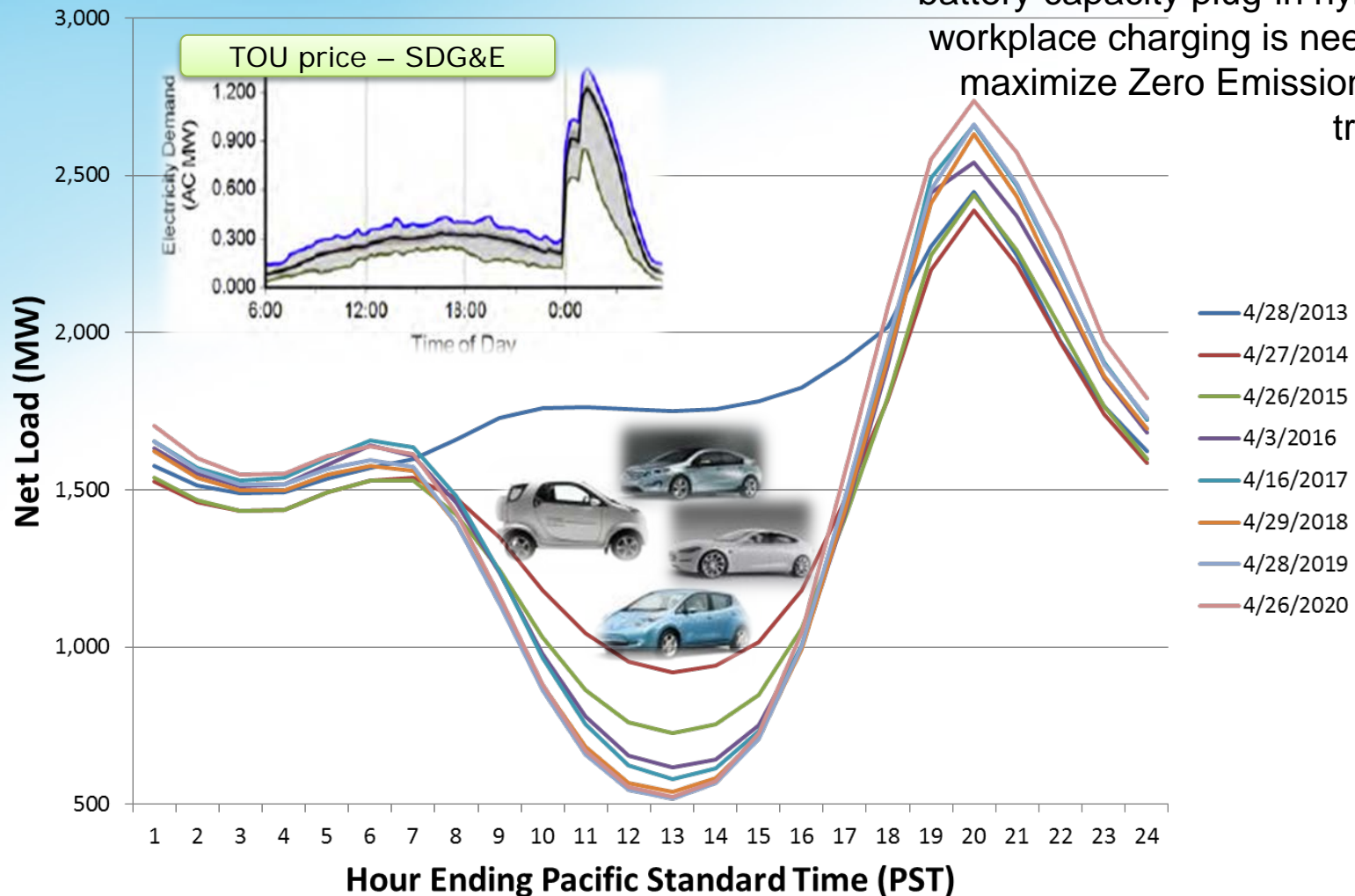
# Demand, Net of Renewable Energy Low Day Illustration



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## System Low Days

80% of PEV production to be low battery capacity plug-in hybrids – workplace charging is needed to maximize Zero Emission miles traveled





# Workplace and Fleet Charging Solutions

Employees or Multi-unit Dwelling customers schedule charging times based on the changing cost of energy during day



Eight 1.3 kW & two 8 kW charging units managed at one smart kiosk

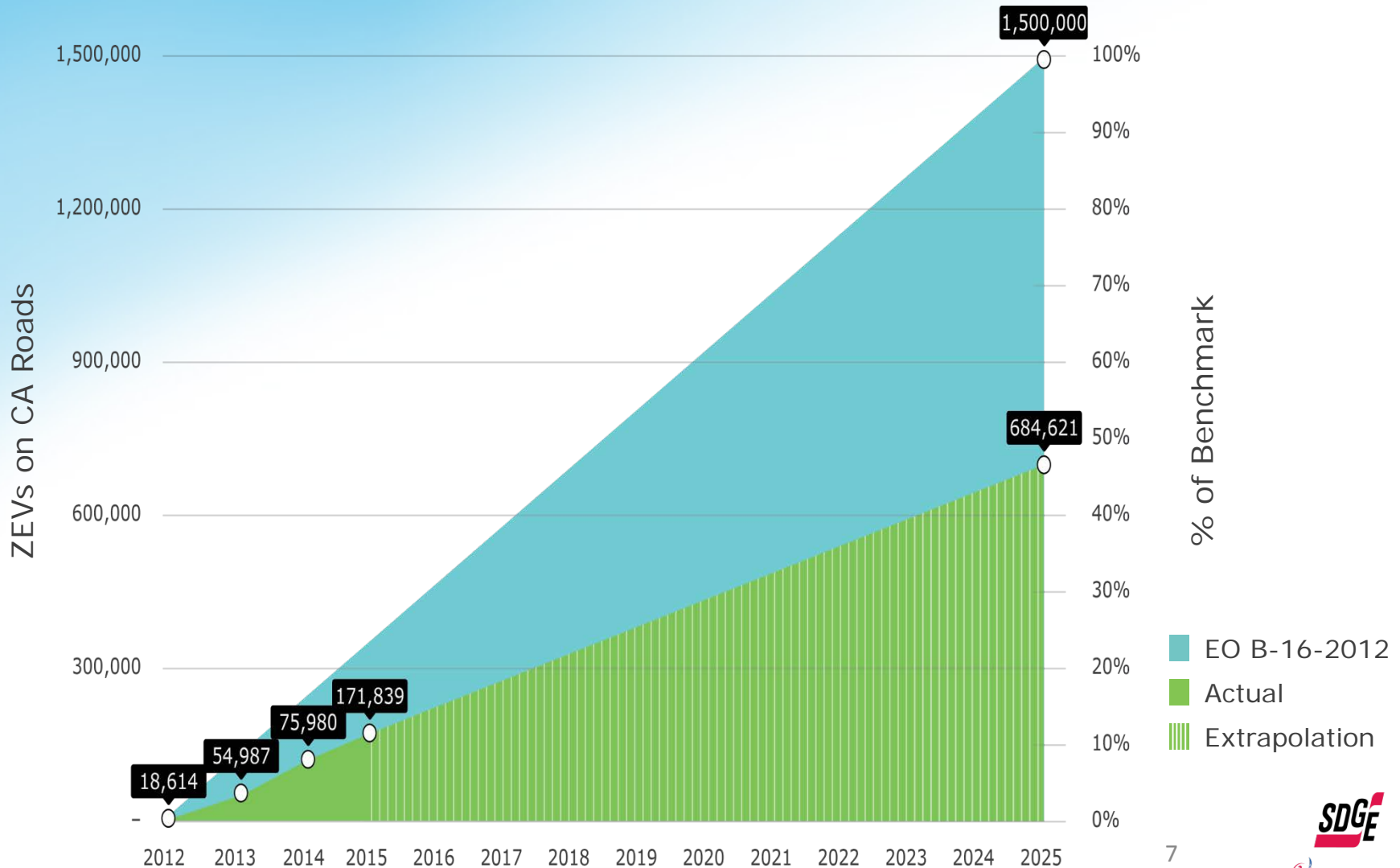


# California's EV and Renewable Goals

- Almost **40%** of CA's greenhouse gas emissions come from transportation
- AB32 restores greenhouse gas emissions **to 1990 levels by 2020**
- CA Governor Jerry Brown's "Zero Emission Vehicle Action Plan"
  - **By 2020** – Grid-integrated charging infrastructure **to support 1 million ZEVs**
  - **By 2025** – **1.5 million ZEVs** CA roadways
  - "Drive the Dream" commitment to workplace charging
- Department of Energy Workplace Charging Challenge – SDG&E is a partner
  - Achieve a **tenfold increase** in employers offering workplace charging in **by 2018**
- Greater than **33%** renewable energy resource mix **by 2020**; considering 40% and 50% levels

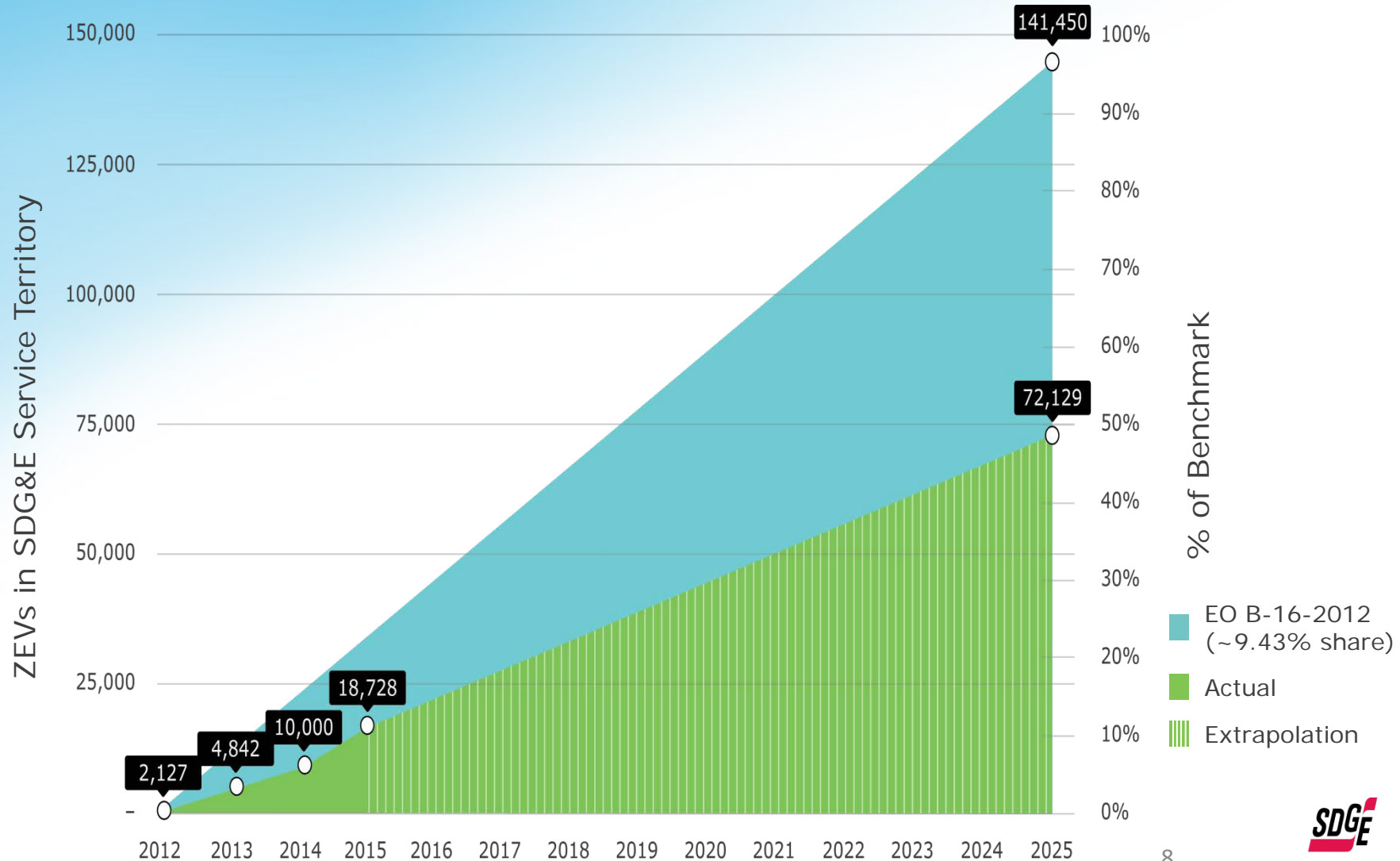
# California EV Adoption Projections

By 2025 over 1.5 million zero-emission vehicles on CA roads.



# SDG&E's Share of State EV Projections

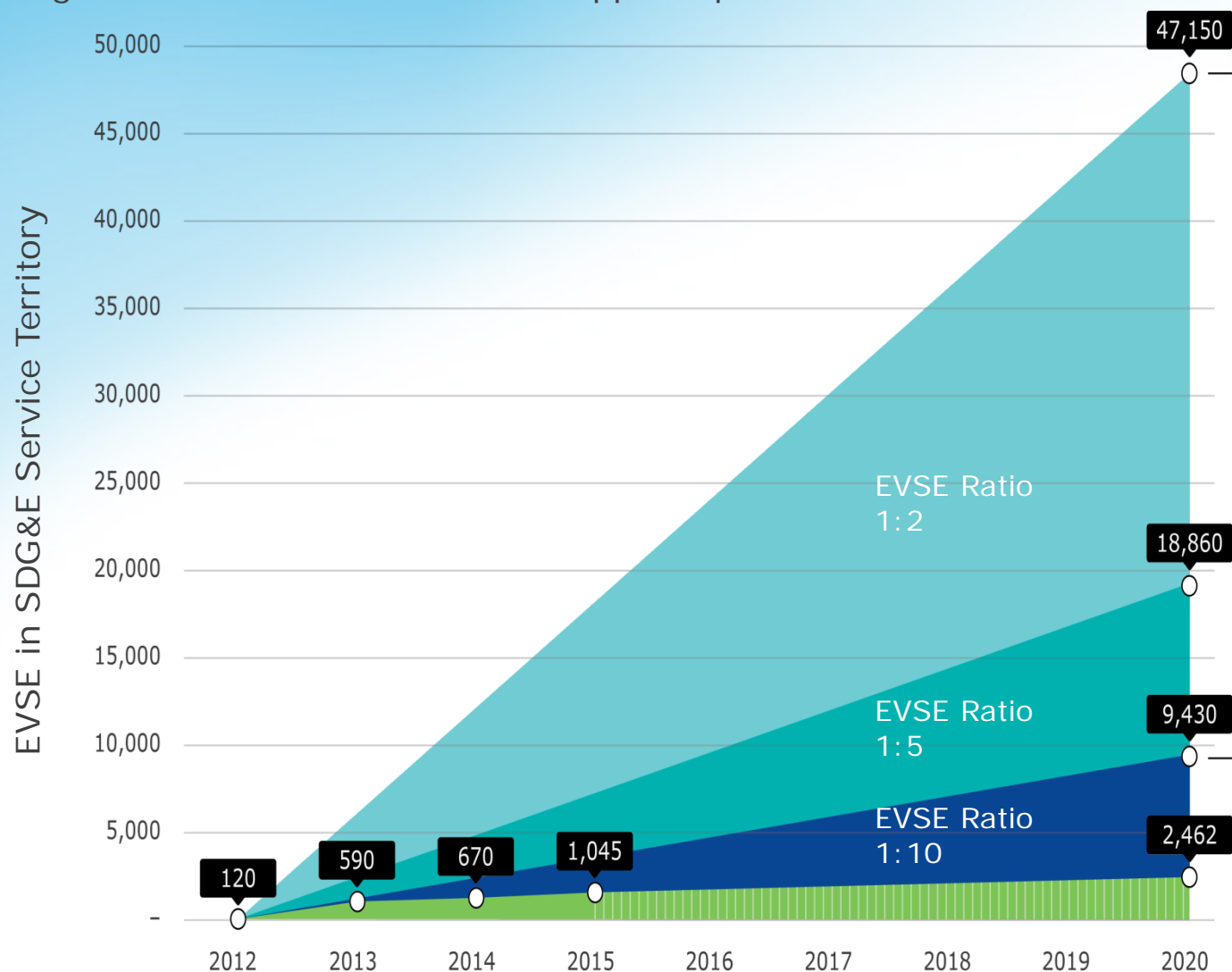
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# SDG&E's Share of State Charging Infrastructure Projections

2020 goal for ZEV infrastructure to support up to 1 million vehicles.



2020 Infrastructure benchmark defined as EVSE Ratio (one non-home EVSE available per 2, 5, or 10 PEVs). SDG&E assumed to represent 9.43% of State.

EVSE Benchmark

Actual  
Extrapolation

# *SDG&E Goal – Grid-Integrated EV Charging*

Create an excellent customer experience and accelerate the growth of electric transportation by ensuring the **safe, reliable and efficient integration of EV loads with the grid.**

- Technology
- Pricing
- Innovation
- Education
- **More plug-in electric vehicles**
- **More zero emission miles driven per EV**

- 350 grid-integrated EV charging facilities in **multifamily communities** and **work places**
- Day-ahead hourly rate that aligns with grid conditions to encourage off-peak charging
- Third parties to operate and maintain charging system
- EV charging is billed to drivers' SDG&E bill
- **Per the Settlement**
  - Rate-to-Host option with a load management plan
  - Participation Payment
  - Can switch rate-billing plan after one year
  - Disadvantaged Communities commitment (>10%)
  - Create a diverse Program Advisory Council
  - 40% of spend to Diverse Business Enterprises

*Questions?*

# Thank You

Thomas Bialek

Chief Engineer - Smart Grid

[TBialek@semprautilities.com](mailto:TBialek@semprautilities.com)

[www.sdge.com/smartgrid/](http://www.sdge.com/smartgrid/)

## EV Information

[www.sdge.com/ev](http://www.sdge.com/ev)

## SDG&E's Power Your Drive Proceeding

[www.sdge.com/regulatory-filing/10676/sdge-electric-vehicle-grid-integration-pilot-program](http://www.sdge.com/regulatory-filing/10676/sdge-electric-vehicle-grid-integration-pilot-program)

