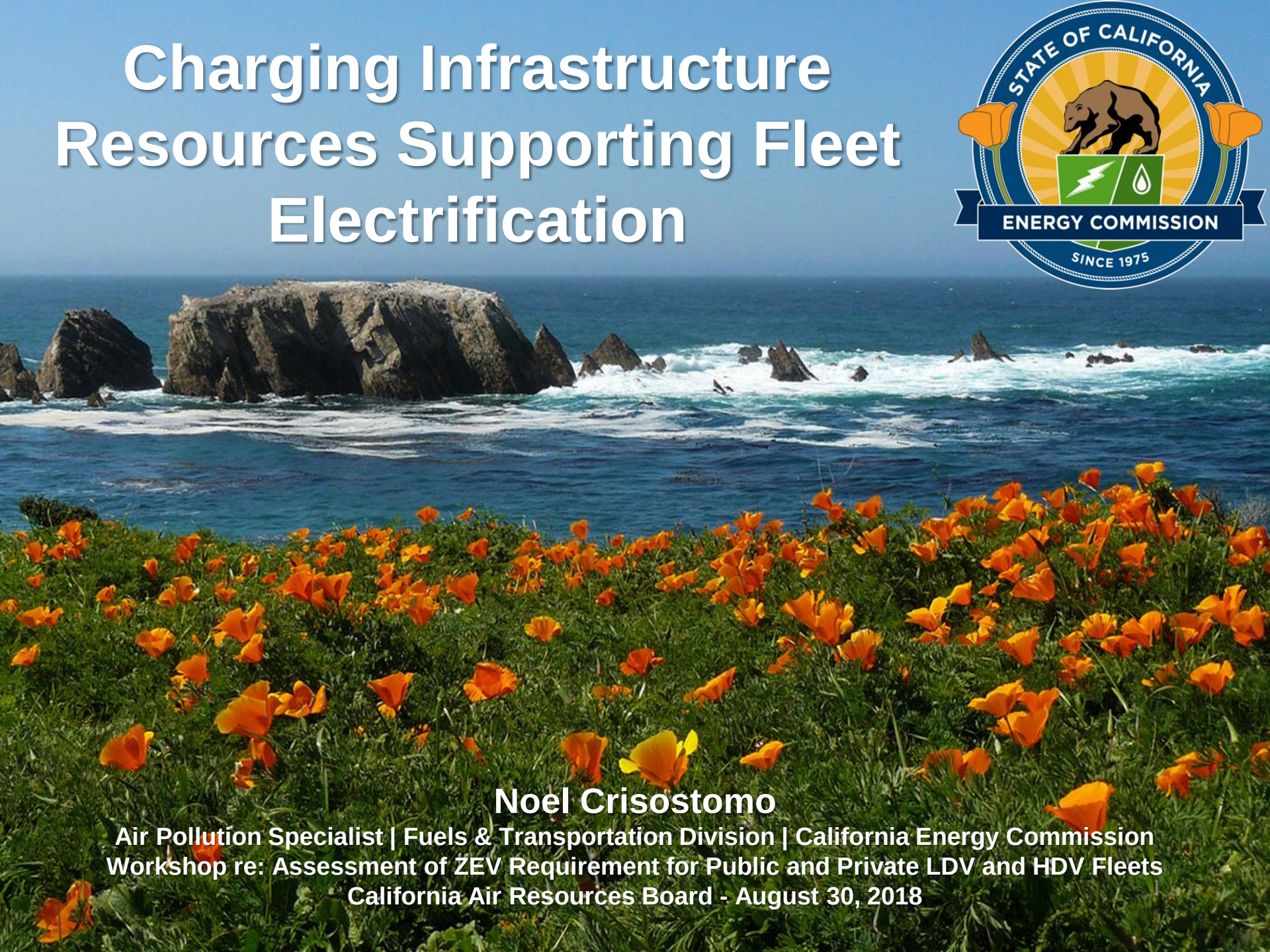
Charging Infrastructure Resources Supporting Fleet Electrification

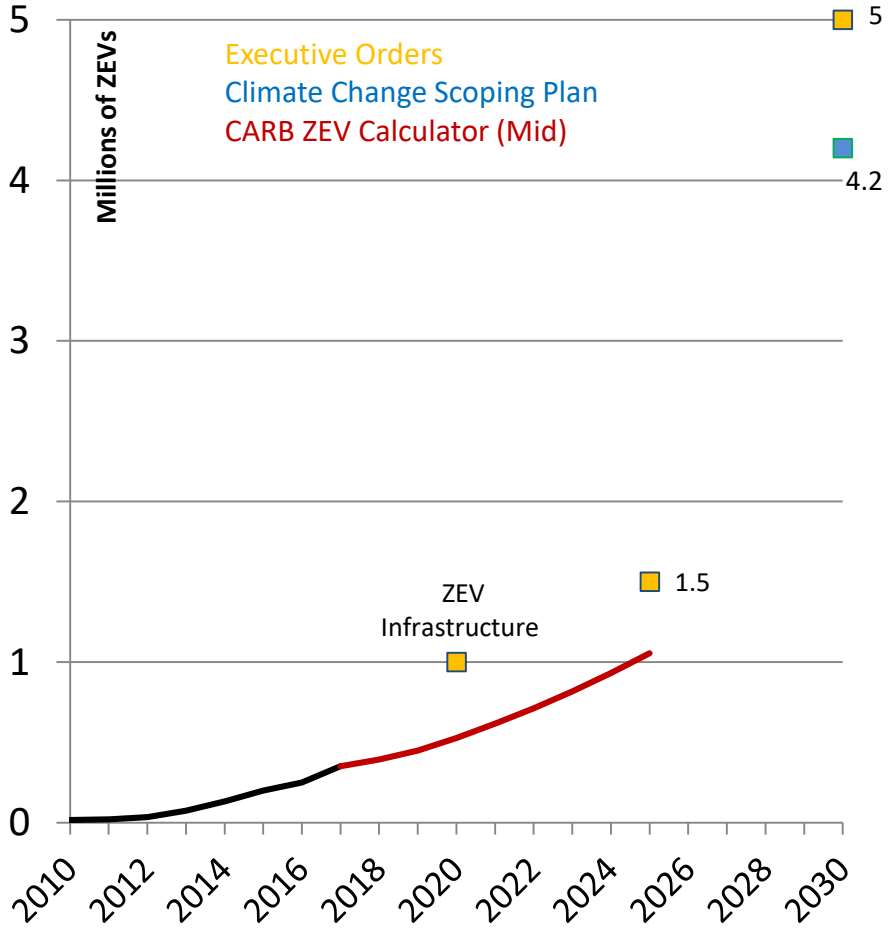


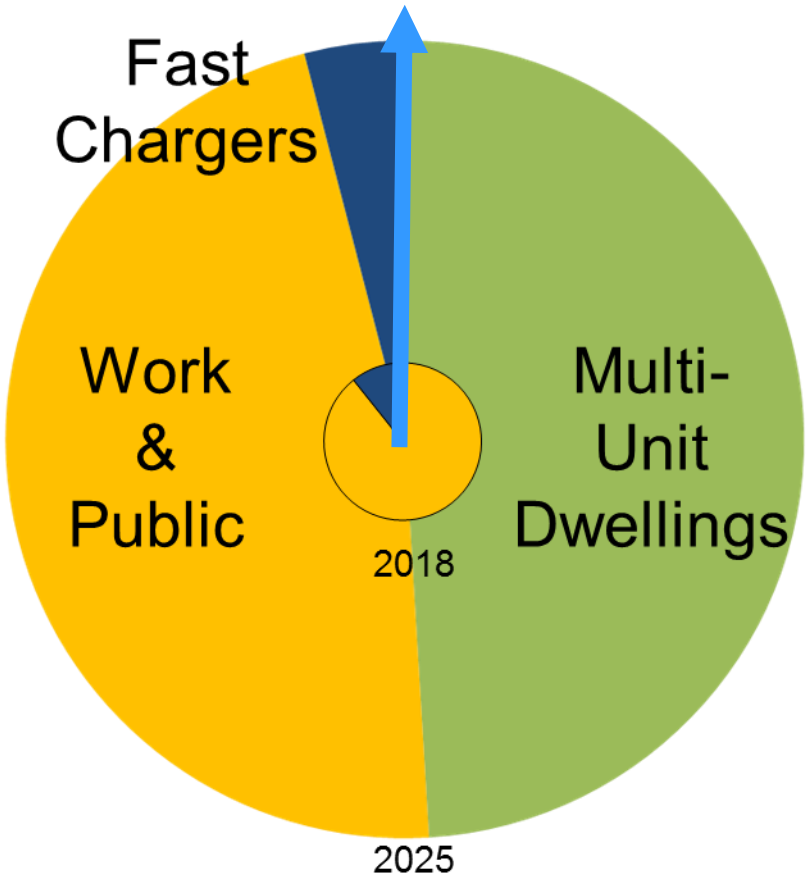
Noel Crisostomo
Air Pollution Specialist | Fuels & Transportation Division | California Energy Commission
Workshop re: Assessment of ZEV Requirement for Public and Private LDV and HDV Fleets
California Air Resources Board - August 30, 2018

Overview

- Energy Commission support of California's clean air and climate goals
  - B-48-18 calls for 250,000 chargers and 200 H2 refueling stations
- Planning for electric vehicle infrastructure
  - Electric Vehicle Infrastructure Projections Tool (EVI-Pro)
- Providing financial incentives for customers
  - California Electric Vehicle Infrastructure Project (CALeVIP)
- Other Energy Commission tools
- Questions

CA will spur the private sector to construct 250,000 chargers by 2025, on the way to 5M ZEVs by 2030.



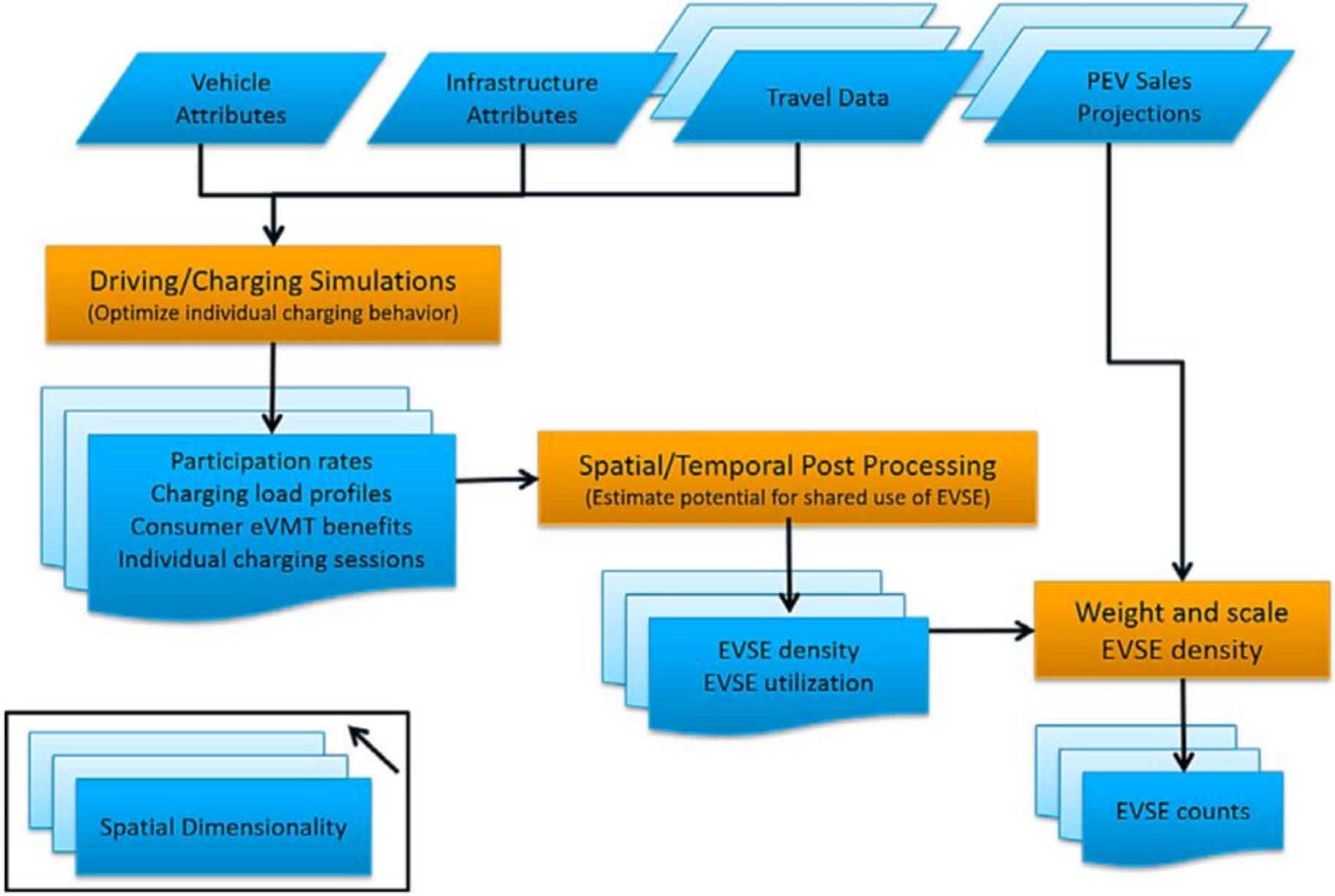


Executive Order B-48-18, CARB Climate Change Scoping Plan, CEC Staff Report: California Electric Vehicle Infrastructure Projections: 2017-2025

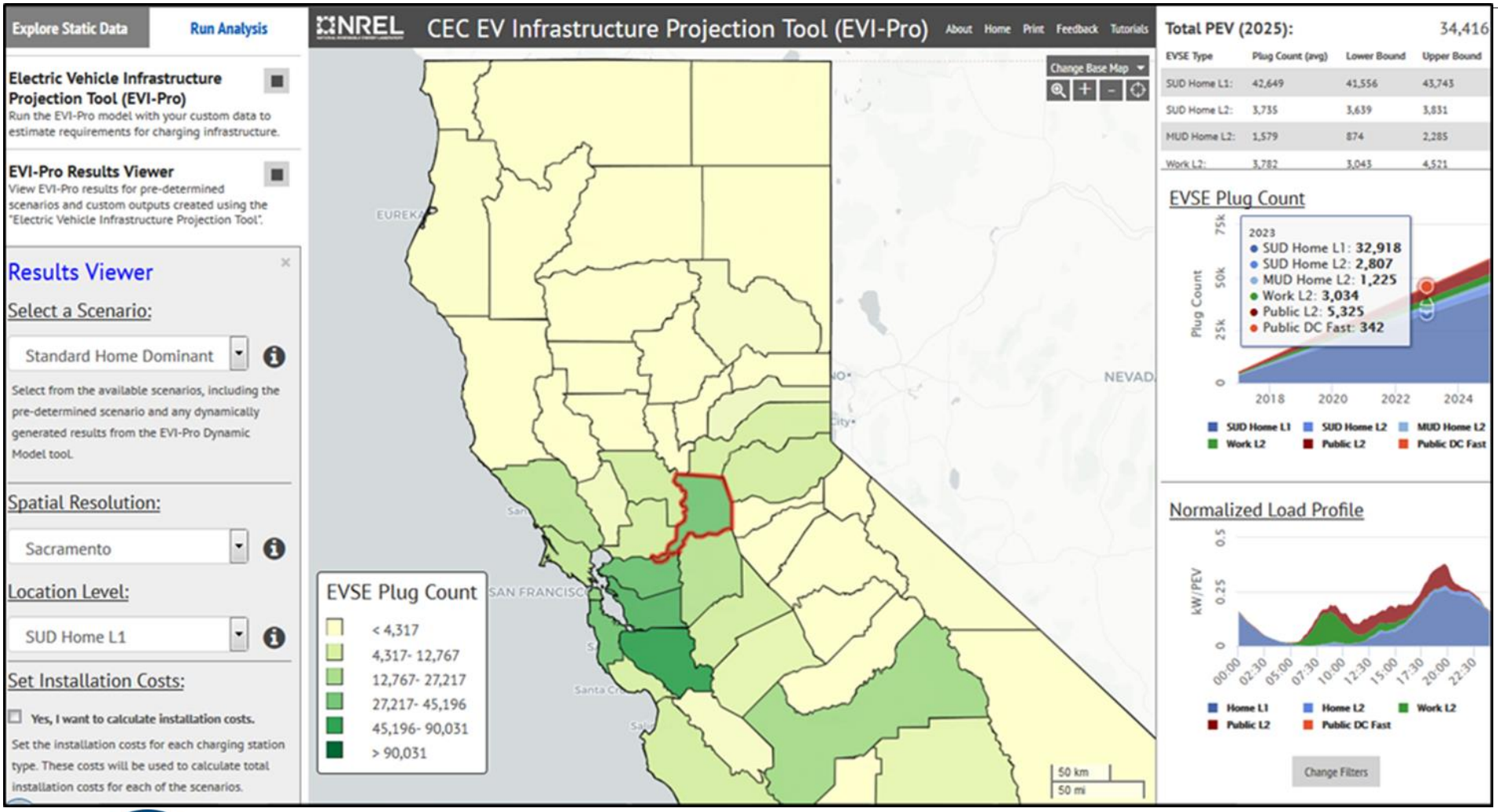
Electric Vehicle-Infrastructure Projections Tool

"How many of each charger type are needed in California to ensure that both BEVs and PHEVs can drive mostly on electricity by 2025?"

EVI-Pro: By 2025, Alameda County needs to install between 2,629 and 3,581 public chargers.


Vehicle Attributes
Infrastructure Attributes
Travel Data
PEV Sales Projections
Driving/Charging Simulations
(Optimize individual charging behavior)
Participation rates
Charging load profiles
Consumer eVMT benefits
Individual charging sessions
Spatial/Temporal Post Processing
(Estimate potential for shared use of EVSE)
EVSE density
EVSE utilization
Weight and scale
EVSE density
EVSE counts
Spatial Dimensionality

Online EVI-Pro portal to compare regional demand



Future EVI-Pro fleet assessments

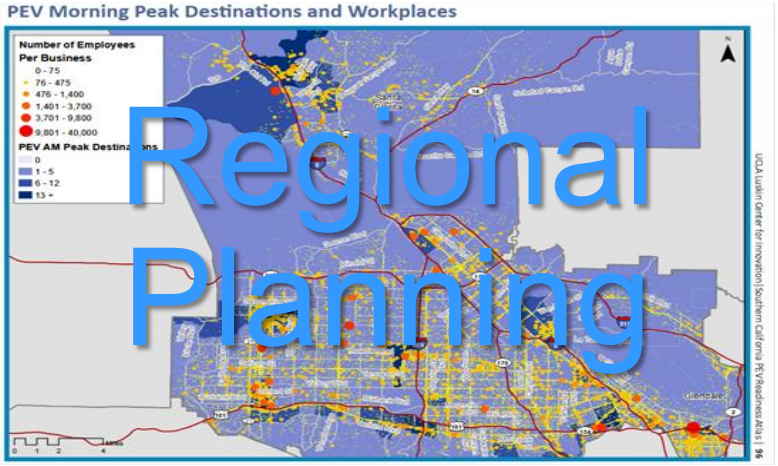
- Energy Commission is preparing to help the Air Resources Board and stakeholders assess fleet charging needs.
- Key areas of ongoing analysis should address light-, medium-, and heavy-duty vehicles in commercial uses.
- Formulating scenarios to assist rulemaking:
  - Timeframes and locations of vehicle turnover
  - Travel demand and use cases
  - Existing parking configurations and refueling preferences
  - Vehicle and equipment technical characteristics (on/off-road)

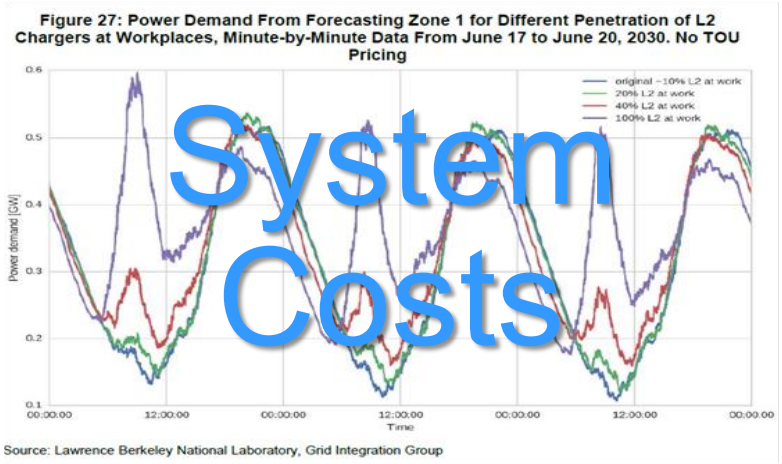
Incentives for charging infrastructure

CAL eVIP

BUILDING EV INFRASTRUCTURE

Tools enabling cost-effective electrification





Source: Lawrence Berkeley National Laboratory, Grid Integration Group

Thank you!
Questions & Comments Welcome

http://www.energy.ca.gov/transportation/
EVI-Pro Report | https://maps.nrel.gov/cec
https://calevip.org/
https://mygreencar.com/fleet/

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