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#### VGI Roadmap Update Workshop - Goldsmith CalETC Policy Panel Slides

Additional submitted attachment is included below.



Hannah Goldsmith

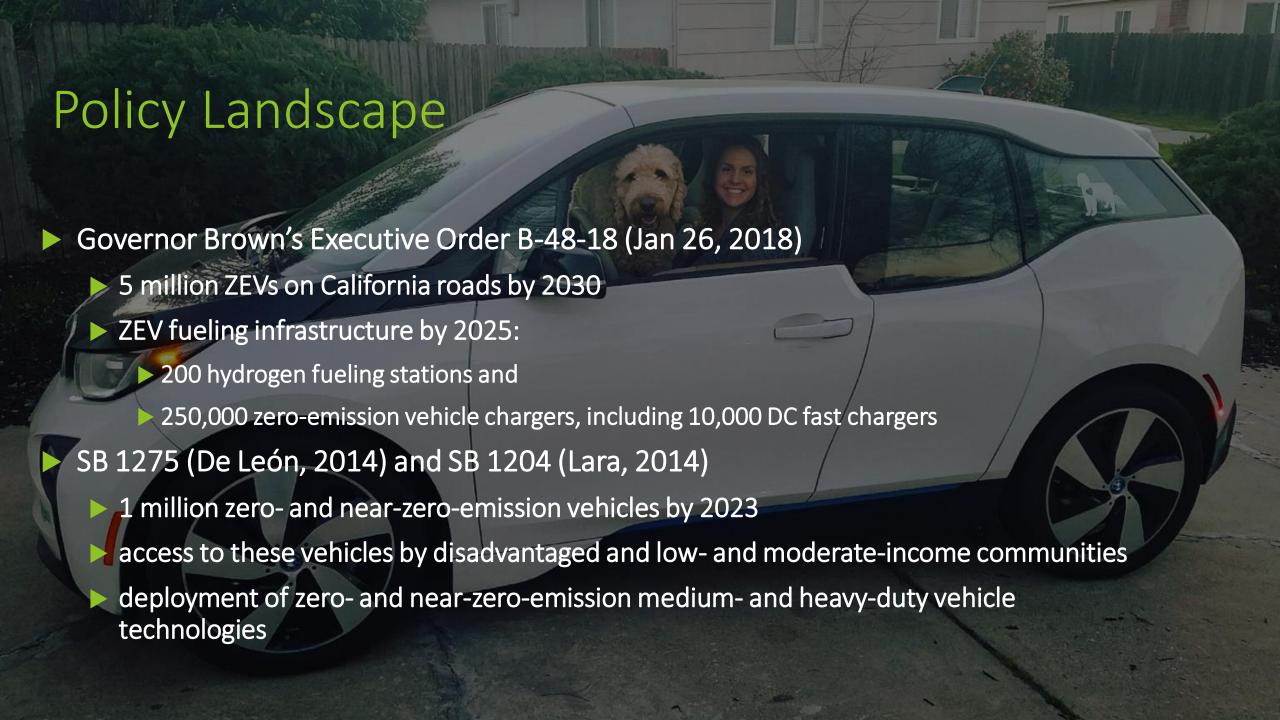
VGI Roadmap Update Workshop – Policy Panel

October 29-30, 2018

#### About CalETC

- ► CalETC supports and advocates for the transition to a zero-emission transportation future as a means to spur economic growth, fuel diversity and energy independence, achieve clean air, and combat climate change.
- ▶ Board and Associate Members:





#### Policy Landscape

► 2018 ZEV Action Plan Priorities Update:

Includes many actions related to VGI, such as:

► Update the VGI Roadmap

► Enable the IOUs to implement projects to advance TE in their service territories; address how these investments can enable VGI

Support state- and federallyfunded VGI pilots

Explore strategies and rate designs that protect against negative grid impacts and minimize costs



# Policy recommendations

- State agency coordination
- Market participant coordination
- Determine VGI value and cost
- Prioritize customer experience, value
- Analyze and leverage prior progress and ongoing work related to VGI and DERs



### Policy Recommendations

- ► VGI Roadmap Scope should include all:
  - ▶ User sectors: residential, commercial, ride-share
  - > Types of VGI: V1G and V2G, including V2B and V2H
  - Applications: customer load management, distribution and transmission reliability services, wholesale energy and resource adequacy services
  - Control approaches: indirect control (e.g., price signaling), direct control (e.g., dispatching)
  - ► VGI communication pathways (e.g., communication to the charger or directly to the EV)
  - ▶ Vehicle classes: light-, medium-, heavy-duty, off-road
  - Charging levels: AC (L1 and L2) and DCFC

#### Policy Recommendations

- Approaches for consideration:
  - ► TOU/TOD rate design
    - Proven, low cost, and effective means of encouraging charging during beneficial times at scale
    - Requires no communication system or expensive hardware requirements
    - Applicable in many applications based on customer feedback
  - ► Demand charge design
    - Time variant rates with lower demand charges
    - ▶ Demand charge neutralization
    - ▶ Demand charge phase-in
    - Residential demand charges for some applications





- ► Approaches for consideration:
  - ► Demand response programs
    - ► Successful DR programs to date
    - ▶ Should encourage continued DR programs and opportunities for EV drivers
  - ► Low Carbon Fuel Standard program design
    - Effective January 2019, smart charging incremental credit (both penalty & reward)
  - Storage mandate design
    - ▶ Flexible load shifting and V2G qualify, but V1G should as well

#### Policy Recommendations

- ► Approaches for consideration:
  - Design of rebates to encourage certain technologies or outcomes
    - Encourage low-cost VGI solutions
    - ► Power sharing & sequencing
  - Large-scale pilots and demonstrations
    - Should be used to prove out VGI opportunities, communications, effectiveness, value and cost



## Thank you!

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