

<b>DOCKETED</b>	
<b>Docket Number:</b>	18-MISC-04
<b>Project Title:</b>	Vehicle Grid Integration Roadmap Update
<b>TN #:</b>	225118
<b>Document Title:</b>	CalETC Comments VGI Roadmap Update Workshop - Goldsmith CalETC Policy Panel Slides
<b>Description:</b>	Presentation by Hannah Goldsmith
<b>Filer:</b>	System
<b>Organization:</b>	CalETC/Hannah Goldsmith
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	10/26/2018 3:58:55 PM
<b>Docketed Date:</b>	10/26/2018

*Comment Received From: Hannah Goldsmith*  
*Submitted On: 10/26/2018*  
*Docket Number: 18-MISC-04*

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

*Additional submitted attachment is included below.*



**California Electric Transportation Coalition**

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

- ▶ Governor Brown's Executive Order B-48-18 (Jan 26, 2018)
  - ▶ 5 million ZEVs on California roads by 2030
  - ▶ ZEV fueling infrastructure by 2025:
    - ▶ 200 hydrogen fueling stations and
    - ▶ 250,000 zero-emission vehicle chargers, including 10,000 DC fast chargers
- ▶ SB 1275 (De León, 2014) and SB 1204 (Lara, 2014)
  - ▶ 1 million zero- and near-zero-emission vehicles by 2023
  - ▶ access to these vehicles by disadvantaged and low- and moderate-income communities
  - ▶ deployment of zero- and near-zero-emission medium- and heavy-duty vehicle technologies



# 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 federally-funded 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



# Policy Recommendations

A white Nissan Leaf is shown from a rear three-quarter perspective, driving on a wet, reflective street at night. The car's taillights and rear window are visible. The background is dark and blurred, suggesting an urban environment.

- ▶ **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





The background features abstract, overlapping green geometric shapes in various shades, primarily on the right side of the slide, creating a modern and dynamic feel.

# Thank you!

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