

**DOCKETED**

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# Scaling Vehicle Grid Integration

June 24, 2020

California Energy Commission IEPR Workshop

# Why Scale Vehicle-Grid Integration (VGI) Now?

Five public policy goals:

1. **Decarbonize the transportation sector** by accelerating EV adoption.
2. Support **decarbonization of the power sector** by providing essential grid services as renewable energy penetration increases.
3. **Increase affordability** by reducing electricity bills for all consumers.
4. Improve **grid resiliency** and security during wildfire risk events.
5. **Foster economic activity** through innovation, competition, and market transformation.

# Economic Barriers to Scaling VGI: Valuing VGI // Price Signals // Customer Wallet Appeal

- Compensation for full potential of VGI services is not currently realized.
- Solutions for scaling VGI include:
  - VGI-specific rate design options
    - More dynamic rate structures (e.g., SDG&E Power Your Drive rate pilot)
    - Continued improvements to EV TOU rates
    - Average daily demand charges
  - Distribution deferral tariffs
  - Utility VGI programs (e.g. demand response)
  - V2G export credits
  - Ancillary services compensation mechanisms
  - Public funding support for resiliency use cases (e.g. backup power deployments for PSPS events)
  - Market transformation incentives (especially to support equity/resiliency policy objectives)

# Operational Barriers to Scaling VGI: Interconnection is a Threshold Issue

## V2G-DC

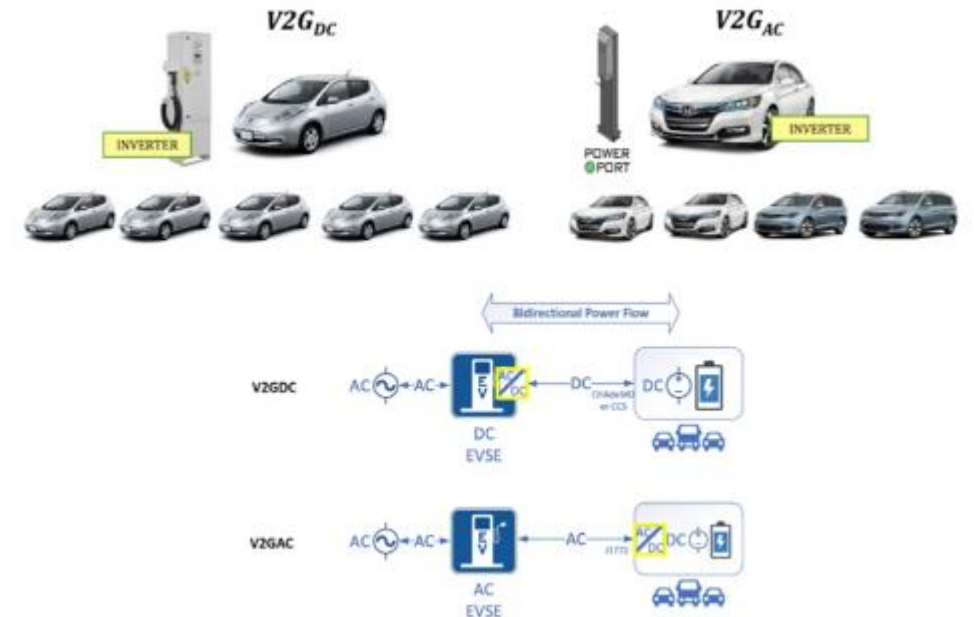
- Interconnect possible under Rule 21 but process is not streamlined.
- Presents a major barrier from customer perspective.

## V2G-AC

- Interconnection requirements and standards are presently unclear.
- Regulatory certainty is necessary for market participants to develop products (e.g. multi-year product development timeline).
- Solution must be compatible with OEM manufacturing processes (e.g. robust internal certification)

## V2B for backup power via intentional customer islanding

- Additional demonstration projects now could help clear the way for scaled up deployments in future fire seasons.





# Thank You!

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