



Use Case Scoring Results - LDV

VGI Working Group Workshop #4
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About the Vehicle-Grid Integration Council (VGIC)

The Vehicle Grid Integration Council (VGIC) is a national 501(c)(6) membership-based advocacy group committed to advancing the role of electric vehicles and smart EV charging through policy development, education, outreach, and research.

The mission of VGIC is to support the transition to a decarbonized transportation and electric sector by ensuring the value from EV deployments and flexible EV charging and discharging is recognized and compensated in support of achieving a more reliable, affordable, and efficient electric grid.

VGIC member companies and supporters include American Honda Motor Co., Inc., Enel X North America, Inc., Fiat Chrysler Automobiles, Ford Motor Company, General Motors Company, and Nuvve Corporation. The views expressed in this presentation are those of VGIC, and do not necessarily reflect the views of all of the individual VGIC member companies or supporters. (<https://www.vgicouncil.org/>).

Identifying consensus use cases

- Answers the question, “is there general consensus among working group stakeholders that a given use case has value now?”
 - Goal is to identify at least a small subset of LDV use cases for further development (e.g. “top 5”)
- List can be added to over time if additional consensus among working group participants is developed
- Initial filtering approach:
 - Identified the “most scored” use cases (i.e. ≥ 6 submissions) = 31 use cases
 - Limited to V1G/V2L = 27 use cases
 - VGIC supports development of V2G use cases but recognizes there is likely not consensus on V2G as an option in the “now” timeframe
 - Identified use case buckets with higher average “implementability” scores = 5 use case “buckets”
- Results are not a “wish list” for VGIC, but rather are derived from the scoring results of the entire VGI Working Group

Possible consensus use cases (“top five”)

1. Customer bill management, residential single-family home (SFH) and multi-unit dwelling (MUD)
2. Customer bill management, commercial workplace
3. Backup power, residential SFH
 - *Noteworthy due to current CA policy focus on PSPS events*
4. System RA, residential SFH and MUD
5. System RA, commercial workplace
6. ... (TBD)

Scoring comparison example: Customer bill management, residential SFH (8 total scorers)

- **Benefits:**
 - On-peak/off-peak differentials range from \$0.10 to \$0.25/kWh
 - Consumption ranges from 13 to 15 kWh per day (60 kWh per day for rideshare use cases)
 - EV use assumed to be 5 days/week, ranging from 50 to 52 weeks/year
- **Population:**
 - Most scorers provided 300,000 – 900,000 range for EV population (CEC IEPR Mid EV forecasted 1,750,842 vehicles by 2022. Assumes majority of EVs would be able to participate.)
 - Population assumptions differed for “direct” and “rideshare” use cases
- **Costs:**
 - General consensus that cost would be minimal or zero. No new metering costs if whole house TOU rate. Some participants scored higher costs for direct case versus indirect.
- **Implementability:**
 - Most scorers gave 4-5 (out of 5) on implementability.

Scoring comparison example: Backup power, residential SFH (7 total scorers)

- **Benefits:**
 - Several scorers based on alternative cost of a generator; some discrepancy in what that exact cost would be;
 - No distinction between direct/indirect
- **Population:**
 - Most scorers provided 25,000-100,000 range for EV population.
- **Costs/implementability:**
 - Interconnection recognized as a potential cost/barrier:
 - PGE: “cost can be high if discharge requires DC bi-directional charger and requires connecting to / upgrading home panel; can be low if done through off-shelve mobile inverter directly into a load/device.”
 - PAO: “Process of interconnection complex and not obvious to customers... If this is V2G only in terms of connecting to the EV, costs would be de minimis and implementability would be much easier.”

Scoring comparison example: System RA, commercial workplace (6 total scorers)

- **Benefits**
 - No distinction between direct/indirect or fragmented/aligned
 - Some discrepancies in benefits range between scorers (\$1-50 vs \$50-150 vs \$150-300/EV/yr)
 - Benefits generally derived from reference prices in CPUC RA reports
- **Population**
 - Most scorers in either the 5,000-25,000 range or 100,000-300,000 range
- **Costs/Implementability**
 - All scorers assigned overall costs in the 2-3 (out of 5) range
 - All scorers assigned overall implementability in the 3-4 (out of 5) range

Reflection on working group's scoring approaches

- Scoring submissions and comments show some similarities in stakeholders' general approaches for certain use case buckets (with some minor discrepancies).
- Working Group consensus may be within reach for several of these use case buckets.
- For use case buckets that are similar, the Working Group could attempt to develop a “consensus” view on inputs/assumptions and approaches if there are only minor differences.
- None of the use case scoring exercises fully considered “ratepayer benefits” category.
 - Could be addressed through PUC Questions 2 & 3.

Thank you

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