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Vehicle-Grid Integration
Roadmap Update
Kickoff Webinar
September 6, 2018
Housekeeping

• Webinar only format
• Everyone is on mute
• Please use the raise hand function to ask a question or make a comment
• Will take questions throughout presentation
• Meeting is being recorded and will be posted afterward.
Webinar Agenda

• VGI Roadmap Team Introductions
• Background, Overview and Approach
• Four-track Framework
• Proposed Roadmap Goals and Issues/Barriers
• Public Comment
• Next Steps
Major Drivers

• Executive Order B-48-18 for ZEVs sets ambitious goals for charging infrastructure and increased affordability and accessibility which necessitate investments in strategies that integrate and electrify transportation.

• Executive Order B-32-15 and subsequent Sustainable Freight Action Plan sets targets to transition the freight sector to zero-emission technology.

• 2017 IEPR describes significant, recent advances in VGI and recommends updating the 2014 VGI Roadmap.

• SB 350 transportation electrification investments and state and local incentives

• Expanding market and changing consumer preferences

• Accelerated in clean energy mandates and DERs
Roadmap Objective

• Develop and prioritize specific actions assigned to responsible entities that are necessary to overcome the highest-priority barriers to advancing VGI technology adoption to enable electric vehicle-based grid services.

• Leverage existing interagency relationships and processes, and foster stakeholder participation.
Roadmap Schedule & Approach

Kickoff Webinar (9/6/18)
- Release proposed framework and topics for public comment
- Will inform topics to explore in roadmap

VGI Workshop Discussion Document
- VGI policy/program overview
- Refined framework and topics
- Discussion questions

Workshops (10/29-30/18)
- VGI product showcase
- 2-day workshop sessions
- Identify and prioritize VGI roadmap actions

Draft Roadmap
- Webinar presentation
- Public comment will inform final roadmap
Scope and Framework

• Scope is transportation electrification broadly, with an emphasis on actions for integrating fleet, workplace, and public charging.

• Proposed framework is organized into four tracks three of which are similar to the 2014 VGI Roadmap.

• Some topics will cut across tracks and/or be dependent on one another.
1. **Policy and Planning**: Identify interactions, barriers, and gaps of policy and planning factors to achieve widespread managed charging deployment, enhanced grid reliability. **Determine gaps requiring new policy intervention.**

2. **Economic Potential**: Compare costs (equipment, operational, process) required to smart charge and discharge millions of PEV to unmanaged charging. **Identify cost/benefits and facilitate business model creation to spur investment.**

3. **Technical Needs**: Identify VGI technologies for all vehicle classes to facilitate the actions described in the **Policy and Planning** and **Economic Potential** tracks. **Delineate key areas of commercialization vs. new research.**

4. **Customer Experience**: Expand the feasibility of VGI for end users, especially low-income residents, including those in disadvantaged communities, to simplify smart charging for everyone. **Ensure VGI efforts emphasize access to all Californians.**
Policy Track

• Improve interagency coordination on TE and VGI given uncertainties amongst market push, and demand pull factors.

• Identify the current and emergent grid needs and where feasible, quantify VGI benefits.

• Align stakeholders’ interests in robust open markets for smart infrastructure investment

• **Issues**: timeline alignment, grid operational needs, local initiatives, defining procurement terms, ratepayer impacts, 3rd party aggregation
Economic Track

• Estimate mid & long term VGI potentials.
• Identify models for self-sustaining private development of charging and VGI markets
• Leverage VGI technologies to improve the value of ACES, smart cities, and MD/HDV.
• Issues: electric resource planning, OEM product planning, value streams, and assessment tools, fragmented qualification processes, aggregation and product designs
Technology Track

• Technology advancements to enable VGI
• Ease the customer experience through less complicated charging and payment processes
• Enabling technology to facilitate PEV market participation in utility or CAISO programs
• Issues: cyber security, standardization & interoperability, battery degradation and high power fast charging, technology transfer and commercialization
Customer Track

• Highlight smart charging benefits to low-income consumers and disadvantaged communities.

• Enhance the consumer experience.

• Increase the potential number of and readiness of future EVSE site hosts.

• **Issues**: geospatial air quality benefits of VGI, education and simplification of smart charging, ease installation and construction of EVSE
Roadmap Matrix Completion

Stakeholder tasks:

After today’s webinar, identify:
- Goals
- Problems/Issues

In advance of 10/29-30 workshop, identify:
- Actions
- Entities (government, industry, etc.)
- Prioritization
Public Comment Questions

• Spreadsheet is designed for stakeholders to use in preparing their comments.

• Staff has also prepared questions for the public to address that will help guide staff’s next steps for the roadmap update:
  – Are there goals missing from the list of proposed goals in the excel workbook? If so, what is the goal and the issues/problems with achieving the goal?
  – Are there issues/problems not identified for the proposed goals? If so, which goals and what are those problems/issues?
  – Are there other changes that staff should consider making to the proposed goals and issues/barriers?
  – Staff would like to build from the momentum of the CPUC led VGI Communications Protocol Working Group. Are there specific topics that were not fully addressed/resolved in that working group that fall within the scope of the VGI Roadmap Update?
Next Steps

• Public comments due on 9/21/18 to https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=18-MISC-04

• Agencies:
  – Incorporate public input and finalize the goals and issues/problems.
  – Develop discussion document in advance of the 2-day roadmap workshops

• Stakeholders:
  – Prepare for the Roadmap workshops on 10/29-30/18
  – Send Eli Harland an email regarding interest in possible participation during 1) panel session at workshop and/or 2) pre-workshop smart charging and vehicle product showcase.
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For more information and to subscribe to the “vgi_communications” list, visit:  
http://www.energy.ca.gov/transportation/vehicle-grid-integration/