

Vehicle Grid Integration Working Group 2: Foundational Materials

In [Rulemaking 18-12-006](#), the CPUC ordered the development of a new interagency [VGI Working Group](#) to address outstanding scope items not answered in the [2017 VGI Communications Protocol Working Group](#). As directed in Rulemaking 18-12-006 and the associated [Scoping Memo and Ruling](#), this new Working Group will focus on answering the CPUC Scope Questions listed below.

This List of Foundational Materials were arranged to inform Working Group participants and orient the discussions of each stage of the Working Group process. Such reference materials are crucial for anchoring Working Group efforts to an established body of research that can support the Working Group goals to answer the CPUC Scope Questions. The sources below focus on the CPUC's three [Scope Questions](#) and [Work Plan Stages](#). To ensure the right materials are included in the Working Group, there will be opportunities for the Working Group to add relevant materials at Stages 2, 3, 5, and 6.

[Working Group Stages:](#)

- Stage 1: Kick-Off
- Stage 2: Vet and Finalize Steps 1-6 of PG&E VGI Valuation Methodology
- Stage 3: CPUC Question 1: What VGI use cases can provide value now, and how can that value be captured?
- Stage 4: Interim Report
- Stage 5: CPUC Question 3: How does the value of VGI use cases compare to other storage or DER?
- Stage 6: CPUC Question 2: What policies need to be changed or adopted to allow additional use cases to be deployed in the future?
- Stage 7: Final Report

List of Foundational Materials

#	Source	Link	Key Use in Work Plan Stage(s)
1	Vehicle-Grid Integration Roadmap. California Independent System Operator. February 2014.	Link	Overarching
2	“Evaluating California’s Vehicle-Grid Integration Opportunities: A Framing Document” Gridworks. August 2019.	Link	Overarching
3	Interagency VGI Roadmap Update	Pending	Overarching
4	PG&E’s VGI Valuation Framework, as published in “A Comprehensive Guide to Electric Vehicle Managed Charging,” SEPA. May 2019.	Link	2
5	“Quantifying Value of V2G”. E3. October 2018.	Link	3
6	Distribution System Constrained Vehicle-to-Grid Services for Improved Grid Stability and Reliability	Link	3
7	Value to the Grid From Managed Charging Based on California’s High Renewables Study	Link	3
8	“Electric Vehicle Grid Impacts and Value” Presentation by Bill Boyce (SMUD). June 2019. Slides 5-22.	Link	3
9	EPIC 2.03b – Test Smart Inverter Enhanced Capabilities – Vehicle to Home; P 63-93 on Cost-Effectiveness	Link	3
10	CAISO: Demand Response User Guide	Link	3, 5
11	CPUC Cost Effectiveness	Link	3, 5
12	DR Cost-Effectiveness Protocols	Link	3, 5
13	“2025 Demand Response Potential Study,” LBNL. March 2017. + “Phase Three Update Presentation” LBNL. July 2019.	Link Link	3, 5
14	Local Sub-Area Energy Storage Request for Offers Solicitation Protocol – PAV and NMV metrics	Link	3
15	Avoided Cost of Transmission and Distribution Workshop Presentation	Link	3
16	CPUC/E3 Presentation on the value of Load Shift as determined in 2017 Integrated Resource Planning. Slides 5-19.	Link	3
17	“Final Report of the California Public Utilities Commission’s Load Shift Working Group,” CPUC. January 2019.	Link	3, 5

