

ATTACHMENT H: STAKEHOLDER ENGAGEMENT¹

Stakeholders had a significant role in shaping the scope of this CPUC Energy Storage Procurement Study. The CPUC issued a Request for Information in early 2020 to determine desired study scope, timeline, and contractor requirements, then engaged with stakeholders over a period of six months to make necessary refinements. Assessment of safety-related best practices is included in the core study scope. This evaluation also includes several “special studies” to inform future policy developments, including: review of other energy storage procurement policies in practice, models for stacking multiple services and value at once, analysis of cost-effectiveness of future procurements and natural gas peaker replacements, and documentation of end-of-life options. Safety best practices and these special studies are considered in the overall assessment and recommendations, with further detail in attachments.

The goal of this attachment is to provide the CPUC and its stakeholders an overview of the stakeholder process throughout this study, key issues raised by stakeholders, and how their feedback and engagement shaped and enriched the study’s analytics, key observations, and recommendations.

The authors are grateful to the many stakeholders who contributed by providing data and feedback to this study, with a special thanks to the CPUC, California Energy Commission, California ISO, Public Advocates Office, Pacific Gas and Electric, Southern California Edison, San Diego Gas & Electric, San Diego County Water Authority, and California Energy Storage Alliance.

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Study Timeline and Key Dates

The CPUC Energy Storage Procurement Study launched in March 2021. Three 4-hour workshops were held with stakeholders at major study milestones to share study progress and to collect feedback. Prior to the third stakeholder workshop a draft report was posted publicly for stakeholder comment, including seven attachments. After each workshop, stakeholders were invited to share their feedback through an online survey.

Figure 1 below shows the overall timeline of the study. Key dates draft materials were shared with stakeholders are:

- May 26, 2021 Workshop #1 to provide a study introduction and draft evaluation framework
- September 30, 2021 Workshop #2 to present a final evaluation framework and initial observations on project use cases and operations
- October 24, 2022 Draft main report posted for stakeholder review
- October 31, 2022 Draft report attachments A–G posted for stakeholder review
- November 4, 2022 Workshop #3 to share draft study findings, conclusions, and policy recommendations

All stakeholder workshop presentations and draft report materials are available for download at www.lumenenergystrategy.com/energystorage.

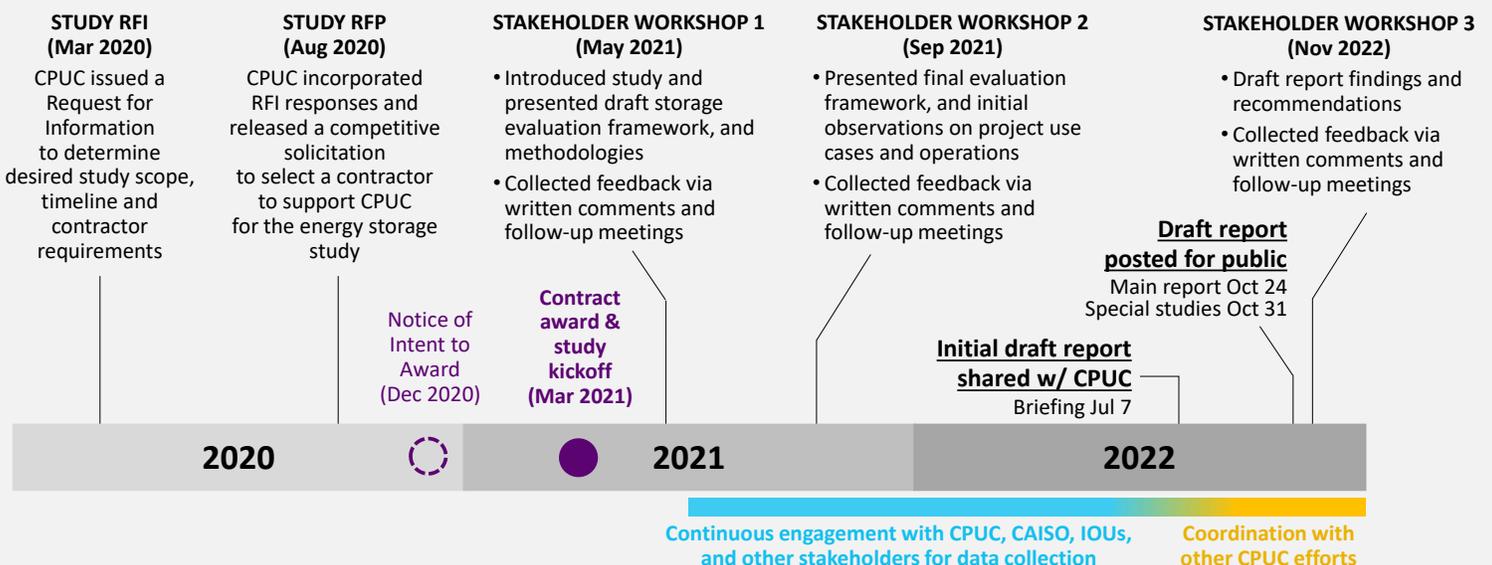


Figure 1: Study timeline and stakeholder engagement.

Scope and Methodology Refinements/Workshop #1

In workshop #1, held May 26, 2021, the study team discussed the study motivation and purpose, scope of energy storage resources included in the analysis, the study evaluation framework, and proposed benefit and performance metrics.

The audience included a large share of utility and regulator representatives, along with CAISO, community/customer, developer/engineer/technical, researcher/academic representatives. Most audience members were generally optimistic of the value of energy storage—as indicated in their response to a live multiple choice poll with “energy storage is a crucial ingredient to achieving California’s clean energy goals” or “energy storage clearly has a great deal of value—we need to figure out how to quantify or monetize that value.” The study team encouraged questions during the workshop and requested additional feedback through an online survey form completed by June 9, 2021.

Workshop #1 survey questions were structured to allow stakeholders to click on one of two radio buttons “I like the proposed methodology described in the workshop” or “It needs additional consideration (add comments below)” on any or all of the following 13 topics. With the latter selected, stakeholders could add comments for clarification.

1. Energy and ancillary services market (monetized benefits: avoided cost)
2. Voltage support and black start (monetized benefits: avoided cost)
3. System and local resource adequacy capacity (monetized benefits: avoided cost)
4. Flexible resource adequacy capacity (monetized benefits: avoided cost)
5. Transmission and distribution investment deferral (monetized benefits: avoided cost)
6. Distribution- and customer-level outage mitigation (monetized benefits: avoided cost)
7. Customer bill management and use of self-generation (analyzed for barriers to providing grid-level services)
8. Impact on GHG emissions (monetized benefits: avoided cost)
9. Impact on renewable curtailments and RPS cost (monetized benefits: avoided cost)
10. Application of CPUC cost-effectiveness tests (ratepayer impact, total resource cost, societal, utility/program administrator cost)
11. Scoring towards meeting AB 2514 goals of *grid optimization* (utilization of capacity towards providing grid services)
12. Scoring towards meeting AB 2514 goals of *renewable integration* (utilization of capacity towards providing the specified subset of grid services)
13. Scoring towards meeting AB 2514 goals of *GHG emissions reductions* (total metric tonnes avoided per kW or kWh of energy storage project capacity)

Three stakeholders responded through the survey. The study team also followed up with stakeholders over email and/or conference calls on questions that came up during the workshop.

Stakeholder feedback overall was largely supportive, with most suggestions in alignment with the proposed evaluation framework. Feedback generally fell into three categories: suggestions refining study scope of work, needs for clarification on benefit and cost metrics, and suggestions for framing the study on energy storage market evolution. The study team refined the study accordingly, and prepared materials to provide further clarification on analytical approach in workshop #2.

Data Collection and Stakeholder Outreach

Data collection began early in the study timeline and continued throughout the study. The evaluation framework could not have been executed without the significant efforts of the IOUs, CAISO, and CPUC to compile data on energy storage operations, characteristics, and procurements.

Throughout the study data collection and analytical process the study team engaged in outreach to stakeholders. The study team engaged in dialogue with CalCCA, California Energy Commission, California Energy Storage Alliance, California ISO, Clean Coalition, Direct Energy, Lawrence Berkeley National Laboratory, Long Duration Energy Storage Association of California, LS Power, Pacific Gas and Electric, Plug to Grid Strategies, Protect Our Communities, Public Advocates Office, Renewables America, San Diego County Water Authority, San Diego Gas & Electric, Southern California Edison, Stem, The Center for Community Energy, Thule Energy Storage, Verdant Associates, LLC, and WattTime. Within the CPUC, the study team sought feedback from a wide range of subject matter experts.

Draft Analytical Results/Workshop #2

In workshop #2, held September 30, 2021, the study team began by discussing feedback from the prior workshop. The rest of the workshop included discussion of the data collection process; preliminary findings on energy storage market evolution; preliminary results on energy and ancillary services market value, GHG emissions impacts, and impacts on renewable curtailments; draft RA capacity counterfactuals; and findings relevant to customer outage mitigation benefits.

As in the first workshop, the audience for workshop #2 included a large share of utility and regulator representatives, as well as CAISO, community/customer, developer/engineer/technical, researcher/academic representatives. This time, live polling questions focused on outage mitigation-related experiences. About 30% of the audience affirmed they live in an area subject to PSPS. Only a few had backup power installed, mostly not in response to PSPS. These polling questions facilitated further discussion at the end of the workshop on customer outage mitigation benefits, a particularly difficult benefit category to quantify.

The study team encouraged questions during the workshop and requested additional feedback through an online survey form due by October 15, 2021.

Workshop #2 survey questions were—again—structured to allow stakeholders to click on one of two radio buttons, but this time selecting between “I agree or mostly agree with this statement (add comments below)” and “I disagree or mostly disagree with this statement (add comments below).” Stakeholders had the option to answer this question on any or all of the following 6 preliminary study findings:

1. DATA COLLECTION: “Improvements to data collection, retention, and centralization are crucial to understanding and evaluating cross-domain investments like energy storage.”
2. EVOLUTION OF ENERGY STORAGE: “California’s market for energy storage development shows significant growth, cost decreases, and expansion of services available.”
3. MULTI-USE APPLICATIONS: “The storage market has made progress with multi-use applications, but challenges remain: most customer-sited resources and many distribution-sited resources do not participate in the CAISO wholesale marketplace and operations are not in alignment with wholesale market signals; no actual specified transmission wires deferrals are observed, and distribution wires deferrals are limited.”

4. ENERGY & A/S MARKET AND GHG IMPACT: “We observe the following situations and use cases increase GHG emissions and energy costs: ancillary services as a primary use case; use cases with storage mostly on standby; use cases not integrated with a wholesale market signal.”
5. RENEWABLE CURTAILMENT IMPACT: “Avoided renewable curtailments so far are relatively small, although we see evidence that this value stream will grow over time as the state moves towards its 100% clean energy target.”
6. CUSTOMER OUTAGE IMPACT: “Customer outage mitigation may be a significant resiliency benefit stream for distributed storage and vulnerable customers, but extremely limited information on Value of Lost Load makes this impact difficult to estimate.”

One stakeholder responded through the survey. The study team followed up with multiple stakeholders on the topic of customer outage mitigation value specifically. The study team also had follow-up meetings with stakeholders to discuss other questions that came up during the workshop, mostly on the topics of GHG emissions savings calculations and findings. Generally, stakeholder feedback was positive and supportive of the preliminary study findings.

Draft Report and Recommendations/Workshop #3

The study team posted a draft report for stakeholder review and comment on October 24, 2022 and draft report attachments A–G on October 31, 2022. On November 4, 2022 the team held workshop #3 to discuss the report structure, key study results, and draft policy recommendations.

The study team encouraged questions during the workshop and requested additional feedback through an online survey form completed by December 2, 2022. Due to the volume of material, and at the request of stakeholders, the survey completion deadline was extended to December 9, 2022.

Three stakeholders responded through the survey. The study team followed up with multiple stakeholders to either collect additional feedback or confirm they decline to comment. Feedback generally fell into four categories: items needing clarification of existing material in the report, additional references or context that could potentially supplement material in the report, ideas for further study that might be addressed by future energy storage evaluations, and ideas for further study that are best addressed through other types of studies. The study team reviewed each piece of feedback carefully to determine if edits to the report would be appropriate and implemented changes to the report.