August 9, 2019

Email to: docket@energy.ca.gov
Docket Number: 19-MISC-01
Subject: CESA's DER Roadmap Prioritization Methodology and Workshop Comments

Re: Comments of the California Energy Storage Alliance (CESA) on the DER Roadmap Prioritization Methodology and Workshop

CESA appreciates the opportunity to comment on the development of the Distributed Energy Resources (DER) Roadmap, including in response to the updated technical assessment, proposed prioritization methodology, and July 25, 2019 workshop discussions. In particular, CESA appreciates that the California Energy Commission (CEC) and Navigant have incorporated many of our suggested corrections, edits, or citations in the preliminary draft technical assessment.

CESA is a 501(c)(6) organization representing over 80 member companies across the energy storage industry and is involved in a number of proceedings and initiatives that address the various strategies and barriers related to growing the energy storage and vehicle-grid integration market to support a more reliable, cleaner, and more efficient electric grid. With our background and expertise, CESA hopes to help inform the CEC staff on research priorities for future grant funding opportunities through the Electric Program Investment Charge (EPIC) Program that target some of the barriers identified in the draft technical assessment.

Feedback on Updated Draft Technical Assessment

CESA appreciates the responsiveness of CEC staff and Navigant in incorporating our feedback to the Draft DER Roadmap Technical Assessment. CESA takes note of the technical corrections[1] and the suggestions for RDD&D focus areas, such as for hybrid energy storage configurations to provide a wider range of grid capabilities in the near term and for investing in modeling tools that allow for multi-day or seasonal storage optimization dispatch in the medium term.[2] To enhance the report, CESA recommends clearer linkages between the identified barriers to further adoption with the identified RDD&D areas, which can be deduced but would benefit from clearly outlined links between the two report sections.

Below, the Navigant report recommends the following identified RDD&D needs, where CESA offers comments on each energy storage topic area as well as potential additional areas of

[1] CEC/Navigant Final DER Roadmap Technical Assessment at pp. 25-27.
[2] Ibid at p. 28 & 29

RDD&D support based on the state's decarbonization goals, grid needs, and key barriers for utilities, customers, regulators, developers, and technology providers.

RDD&D Need	Time Horizon	CESA's Comments
Standard system design	Near-term	CESA supports this RDD&D area and believes that it can be modeled after the Department of Energy's SunShot Initiative but focused on reducing the soft costs for storage. Standard system designs have many benefits, such as supporting support streamlined program eligibility, permitting, etc.
Standard interconnection designs	Near-term	CESA supports this RDD&D area, which can advance streamlined interconnection processes.
Technology-enabled interconnection approaches	Near-term	CESA supports this RDD&D area but is unclear on what insights or lessons learned are specifically being pursued here. Another possible key area of research that falls into this category may include how storage can provide synthetic inertia as the state retires generators that provide spinning mass on the grid.
Hybrid energy storage configurations	Near-term	CESA supports this addition and recommends that tools be developed to support the development of optimized system specifications, configurations, and operations. Industry can benefit from a tool that supports optimal system design to maximize returns on investment and/or minimize costs and risks, while regulators and utilities can benefit from discerning the value of hybrid storage configurations (*e.g.*, capacity, energy, GHG emission reductions, net ratepayer costs). Tools developed in this RDD&D area may also be beneficial in understanding how developers and technology providers can develop microgrids and/or complementary storage technologies (*e.g.*, lithium-ion plus flow batteries).
Benefits of distributed storage	Medium-term	CESA supports this RDD&D area but is unclear on the scope since there are many benefits that could be assessed here. CESA recommends a few potential focus areas, including assessing the upstream transmission benefits from distributed storage operations, which is unclear today, and/or how storage can enhance distribution hosting capacity.
Investments in modeling tools	Medium-term	CESA supports this addition and recommends this be modified to a near-term priority given that the IRP proceeding (R.16-02-007) may assess whether the CPUC should pursue alternative modeling tools in the 2021-2022 cycle.
Second-life EV batteries for grid services	Medium-term	CESA supports this RDD&D area. Identification of the most effective application for such batteries will be helpful.

In addition, CESA believes the energy storage duration categorizations are generally correct but recommends that short-duration storage technologies be defined as those under 1 hour (instead of 30 minutes) to reflect how the grid may need sub-hourly flexibility. For long-duration storage technologies, it may be helpful to ensure that much longer duration technologies (*i.e.*, in the 8+ hour range) be considered given CESA's experience in assessing distribution deferral needs (*e.g.*, which in some cases reach 12-17 hours) and local contingency needs (*e.g.*, Goleta area resiliency), where it might be helpful to invest in these technologies but also understand whether such needs can be met with limited charge windows during a single day. Whether storage can meet these much longer duration needs has been a question for utilities and regulators in assessing local and distribution capacity needs.

For EV integration topics, CESA generally supports the RDD&D areas while emphasizing that vehicle-grid integration (VGI) valuation is critically important to support greater transportation electrification. Automotive manufacturers seek to understand the value of V1G and V2G to support investments in capabilities to provide these services, which, in turn, can support the development of incentives or point-of-sale rebates to actualize these customer and grid services. CESA responds to each RDD&D area for EV integration below.

RDD&D Need	Time Horizon	CESA's Comments
V1G/V2G valuation	Near-term	CESA supports this RDD&D area and recommends this as a high-priority area.
Work with Grid Needs Assessment	Near-term	CESA is unclear on this RDD&D area, which could be modified to more clearly focus on the value of avoided or deferred distribution upgrades from V1G or V2G. There may be additional areas of RDD&D that could demonstrate the value of V2G resources for resiliency, especially as a mobile storage resource that can move to where the resiliency need is.
EV warranty policy	Near-term	CESA is unclear on whether this is necessary. This seems to be a private industry activity.
V2G communication standards	Medium-term	CESA is unclear on whether this is focused on standardization or a V2G-specific activity.
V2G security	Medium-term	CESA is unclear on whether this is necessary, given that V2G systems will be required to be compliant with smart inverter standards applicable to all DERs, which will include cybersecurity protocols.
V2G standardization	Long-term	CESA is unclear on the scope of this RDD&D area. Perhaps the scope of this could focus on how V2G interconnection could be streamlined via standardization.

Finally, for DER aggregation as non-wires alternatives, CESA notices a lack of identified RDD&D needs, other than to support implementation and valuation of complex resource

portfolios. There are many challenges to planning, procurement, and operationalization of DER portfolios to meet T&D deferral needs, so some key areas of focus for RDD&D could include the development of platforms to enable the quick procurement of DER portfolios and to assess the DER market potential of resources. Due to forecast uncertainty issues and cost-effectiveness considerations, the time to procurement is an important factor in the success of deferral use cases. Such platforms can support DER providers and utilities alike.

Feedback on Prioritization Methodology

CESA broadly supports the prioritization methodology identified by CEC staff and Navigant and is particularly supportive of the inclusion of energy storage as a research topic area. CEC Staff, Consultants, and stakeholders appear to also be in support of using EPIC funding for energy storage research, development, and deployments.

However, in assessing technologies and resources for EPIC investment, CESA recommends that the CEC adopt a broader view of energy storage as an enabling technology or as providing a needed capability to the grid rather than categorizing energy storage in a siloed research area to fully value and invest in energy storage capabilities. For example, EV energy storage is considered under the energy storage research area but could also be considered within the EV integration research area. Behind-the-meter (BTM) energy storage could also be considered in multiple sections, such as energy flexible load assets (as noted in the report)[3] or DER aggregation as non-wires alternative. This can be attributed to the report being focused on technologies, strategies, and capabilities, which naturally leads to some cross-over for certain technologies. CESA supports this flexible approach for different DER technologies.

Furthermore, an additional area of clarification is around the implications of research opportunities landing on the 'Watch List' under this prioritization methodology. For example, it is unclear on the prospects of funding for research areas or technologies that are categorized under the Watch List in the medium-term versus others that are categorized under high-potential in the long-term. Generally, CESA recommends a pathway be identified for opportunities that are identified to have merit but are not funded. In applying the prioritization methodology, the CEC staff should identify the shortcomings or factors that de-prioritize a research area or technology in the near term and key thresholds or information that would lead to future funding opportunities.

Responses to Key Questions

The CEC posed a series of questions on the prioritization methodology prior to the workshop. Below, CESA provides our responses.

[3] CEC/Navigant Final DER Roadmap Technical Assessment at p. 48.

1. **Does the presented prioritization methodology provide a fair, efficient, and comprehensive approach to prioritizing potential research needs?**

CESA believes the presented methodology is fair and will yield investments in technologies that will meet the goals of the EPIC Program. Particularly, CESA supports prioritization of 'Meets California Policy Goals' weighted above the other goals. However, there may be a need to further clarify the 'Need for EPIC' priority screen. It is unclear if a deserving technology is rendered ineligible for EPIC funds if it is receiving limited funding elsewhere, or if prior funding from the EPIC program would lead to a technology having reduced or no funding. Certain energy technologies and innovations may require several rounds of funding from various sources and/or RDD&D focused on different applications or use cases.

2. **What research needs (beyond those identified by the Technical Assessment) should be considered by the Energy Commission?**

Though the Technical Assessment appears to have captured many important research needs, there may be certain technologies that stretch across several research areas. Cross-cutting technologies or issues should not be disadvantaged for their wider applicability. By extension, RDD&D into multi-DER deployments and operations would also be another area to consider in the EPIC Program, especially as customers increasingly adopt multiple DERs (*e.g.*, EE, DR, storage, and EV chargers) at the same site to manage their load and as utilities invest in DERMS platforms to support the integration and communication with DER aggregations. Some of this is already captured in the Technical Assessment.

Conclusion

CESA appreciates the opportunity to provide these comments and feedback on the DER Roadmap. We look forward to collaborating with the CEC and other stakeholders in this proceeding.

Sincerely,

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