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NRDC, UCS Comments on Clean Energy Alternatives for Reliability Workshop

Additional submitted attachment is included below.

November 30, 2022

Mr. Siva Gunda, Vice Chair
California Energy Commission
715 P Street
Sacramento, CA 95814

Re: NRDC and UCS Comments on October 28 Lead Commissioner Workshop on Clean Energy Alternatives for Reliability (Docket No. 21-ESR-01)

The Natural Resources Defense Council (NRDC) and the Union of Concerned Scientists (UCS) are non-profit organizations with more than 95,000 and 14,000 California members, respectively, who have an interest in receiving reliable and affordable energy services while reducing their environmental impact and combatting climate change. On behalf of NRDC and UCS, we respectfully submit the following comments in response to the California Energy Commission's (CEC) 10/28 workshop and 11/7 request for information (RFI) on the planned assessment of clean energy resource options for reliability.

Under the legislative requirements of SB 846 and SB 423, the CEC has the responsibility of assessing grid reliability, clean energy availability, and resource deployment opportunities. These findings will guide procurement orders and planning at the California Public Utilities Commission (CPUC), California ISO, legislature, and other agencies to ensure California's grid is clean and stable amidst growing climate threats such as wildfires and extreme heat events. The CEC must also determine the cost-effectiveness of extending the Diablo canyon power plant beyond 2025 based on capacity needs and alternative resource availability.

The CEC has identified a comprehensive set of clean energy resources and useful criteria to compare resource attributes in traditional and contingency procurement decisions. Before considering specific technologies, however, the Commission must conduct a thorough assessment of California's medium-term capacity needs with probabilistic loss of load event (LOLE) modelling instead of basing major financial decisions on a simplified stack analysis. This comprehensive view of capacity gaps is essential to make strategic and cost-effective investments that ensure grid reliability while keeping energy as clean and affordable as possible. In its clean energy resource alternatives evaluation, the CEC should also take steps to adequately account for voluntary demand response and overlapping resource categories. Finally, the CEC should prioritize clean and equitable projects within the Distributed Energy Backup Assets (DEBA) program.

1. Energy capacity needs assessment

A comprehensive assessment of California's energy capacity needs is essential for reliability planning. In a high-renewables grid, resource adequacy and reliability can be analyzed through a loss of load expectation (LOLE) study. The LOLE study simulates thousands of supply and demand scenarios to determine the probability of instances when supply is less than demand.

The result is the expected number of days with loss-of-load events in a given year, with a planning standard of one-in-ten, or one day with a loss of load event every ten years.

The CEC's summer resource adequacy assessments have relied on stack analysis, comparing the expected energy output of each resource type to peak demand with a planning reserve margin. While useful to develop a directional understanding of how available resources compare with system contingencies at a high level, stack analyses are insufficient for precise estimates of reliability gaps in an increasingly renewable grid and to determine new resource requirements with specificity.¹

The CEC also needs to clarify whether the systemwide reliability standard for the state is still a 1-in-10 LOLE standard or whether the state needs to plan for a more stringent standard and why. It may, for instance, need adjustment to account for the likelihood of higher electric loads from a regional heat wave combined with limited renewable resource imports on summer evenings. The standard must be clear before making decisions about new resource procurement or power plant extensions.

2. RFI input on clean energy resource list and attributes

We provide responses to some of the RFI questions below, using the RFI's original question numbers:

1) Are the categories (indicated in Tables 1, 2 and 3) appropriately representing how the CEC should be evaluating resources?

Yes. However, the CEC must correctly consider the interactive effects of different resources when estimating incremental resource availability to meet capacity needs. Within the categories of supply, demand, and distributed technologies are highly interrelated resource options. For example, in Table 2 ('Demand Resources'), the potential of energy efficiency is reduced by additional demand response measures, and vice versa. In other cases, resources across different categories may be most equitable, feasible, or cost-effective in combination with other options, such as community solar and storage.² It is important to consider the relative availability and usefulness of resources under various co-deployment scenarios.

2) Are there resources that should be added to or removed from the preliminary list under each of the categories (shown in Tables 1, 2, and 3)?

¹ Craig, Hannah. "Summer Stack Analysis for 2022- 2026." California Energy Commission, July 2022. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=244116&DocumentContentId=78009>

² See comment on community solar + storage: Tratten, Tyler. "Comments on October 28 Workshop on Reliability (21-ESR-01)." California Energy Commission, November 10, 2022. <https://efiling.energy.ca.gov/GetDocument.aspx?tn=247394&DocumentContentId=81780>

Californians' voluntary demand response (DR) actions, in response to CAISO emergency alerts, should be accounted for when assessing the total incremental potential of DR along with the demand-flexible technologies, permanent load shift, and energy efficiency listed in Table 2 ('Demand Resources'). California customers recently demonstrated the possible scale and impact of emergency usage reductions to lower demand in a crisis. During the September 6 extreme heat event, energy emergency alert text notifications encouraged customers to immediately reduce electricity use by about two gigawatts.³ It seems that voluntary DR was also a significant share of overall contingencies in 2022, pending further analysis by CAISO.⁴ This amount of unpaid voluntary DR indicates the scale of the opportunity available to meet our capacity needs.

It is important to account for current voluntary DR potential to ensure that the resource is not undercounted, and grid reliability not underestimated, which could lead to unnecessary, costly, and unclean over-procurement. When applying historic consumption data to understand incremental DR potential, such as from demand-flexible technologies, the CEC must also account for the probable share of voluntary usage reductions to not overestimate available potential savings.

In addition, the CEC should explore ways to grow this resource through direct compensation or other payment schemes. The benefits of such a clean and easy-to-ramp resource should not be overlooked, as voluntary DR does not face many of the listed resource obstacles (e.g. readiness, permitting, interconnection, supply chain, cleanliness, policy alignment) and could become even more attractive (e.g. equity, dispatchability) with adequate financial investment. Compensated DR should then be quantitatively analyzed as a potential new resource in cost-benefit analyses of alternative energy options.

3. RFI input on the DEBA program

4) In general, please provide any specific proposal or recommendation on the design and implementation of the DEBA program.

The Distributed Electricity Backup Assets (DEBA) program should prioritize funding incentives for zero- and low-emission technologies. Clean energy storage options are critical for meeting the state's goals of reducing greenhouse gas emissions 40 percent below 1990 levels by 2030 and achieving carbon neutrality by 2045. While some financing for existing generator upgrades may be cost-effective to secure on-call emergency resources during extreme events, these upgrades and additions should not come at the expense of clean storage investments. Ensuring sufficient renewable resource availability in normal as well as emergency conditions will ensure California's grid reliability in the long term.

³ Walsh, Christy. "The Heat Was On and Our Power Grid Held: But Will It Next Time?" NRDC, October 4, 2022. <https://www.nrdc.org/experts/christy-walsh/heat-was-and-our-power-grid-held-will-it-next-time>

⁴ "Clean Energy Alternatives for Reliability October 28th." California Energy Commission, October 27, 2022. <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-ESR-01>

DEBA incentives should also prioritize technology investments in underserved and disadvantaged communities. There are significant equity considerations around recipient customer size and type given historic inequities in power outage impacts and access to backup generation, particularly along socioeconomic lines.⁵ The CEC should center rural, tribal, and other community-scale projects to bolster energy reliability where the need is highest.

NRDC and UCS appreciate the opportunity to comment on the Commission's timely reliability work and once again emphasize the importance of a comprehensive energy needs assessment to fill capacity gaps while making energy clean and affordable. Please reach out to us with any questions or requests for additional information.

Sincerely,

Sylvie Ashford
Natural Resources Defense Council
111 Sutter Street, 21st floor
San Francisco, CA 94104
Tel: (202) 679-5911
Email: sashford@nrdc.org

Mohit Chhabra
Natural Resources Defense Council
40 W 20th St
New York, NY 10011
Tel: (720) 251-3561
Email: mchhabra@nrdc.org

Mark Specht
Union of Concerned Scientists
500 12th Street, Suite 340
Oakland, CA 94607
Tel: (510) 809-1562
Email: mspecht@ucsusa.org

⁵ Bussewitz, Cathy. "California power outages highlight economic disparity." AP News, October 13, 2019. <https://apnews.com/article/california-us-news-ap-top-news-income-disparity-ca-state-wire-abf6aa6a271447c1a2a3c1303f2b7884>