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350 Bay Area Comments on Senate Bill 100 Analytical Workshop (Docket 23-SB-100)

Additional submitted attachment is included below.

350 Contra Costa
350 East Bay
350 San Francisco
350 Marin
350 Silicon Valley
350 Sonoma
Napa Climate NOW!

November 14, 2023

California Energy Commission
715 P Street
Sacramento, CA 95814

RE: Comments on Senate Bill 100 Analytical Workshop (Docket 23-SB-100)

Dear Commissioners,

We appreciate the increased focus at the Analytic Framework Workshop on the potential for distributed energy resources (DER) to play a major role in meeting the SB100 goals, and continue to urge that all scenarios optimize DER. DER can be implemented more rapidly than large scale generation and storage on remote sites given the increasingly long lead time for permitting for transmission and utility scale solar and storage projects. Serving loads BTM makes deployment on many more sites cost effective (including VNEM prior to proposed modifications), and electrification will greatly increase the BTM loads and NEM allowable installed capacity. On site BTM battery storage increases the value of onsite solar; batteries add substantial cost, but onsite EVs offer battery potential at little or no added cost both for demand modification/load shifting and additionally through bi-directional charging that already exists in some models and will likely become widely available. Avoided transmission costs and added resiliency benefits make resources sited near loads more cost effective for ratepayers, although current policies do not yet support connecting these values to revenue streams for the resources.

Modeling of the electricity sector in the past has emphasized bulk grid resources. Several comments during the workshop suggested staff intends to continue using the same approach for the 2025 report cycle. This early in the cycle, we urge a fresh look at how DER can be accurately valued and fully incorporated into SB 100 planning in this effort (for front of meter DER) as well as in the Demand Planning scenario (for behind the meter DER). As more than half of the 16.5 GW of solar installed in California in the five years 2017 to 2021 was on the distribution grid (and BTM)[1] it would be short-sighted to ignore the potential contribution of both BTM and FOM PV and storage.

We recognize that the behind the meter resources will be considered in the demand scenario and look forward to discussions about how to optimize BTM DER in that context. For the purposes of the supply side capacity discussion in this analytic framework, we urge CEC to optimize front of the meter (FOM) DER for all the scenarios. In addition to the adoption of the Climate Resilience Layer, every effort should be made to minimize the development and degradation of intact lands. This includes maximizing the use of DER to support energy generation and reliability locally, such as through maximizing deployment of in front of the meter renewable generation on the 200,000+ acres of parking lots in California or the 11,500 MW potential of large commercial or industrial rooftops determined in 2009 to be within 3 miles of distribution substations.[footnote, below] Given the logistics boom, that potential capacity is doubtless far larger today and growing. CPUC needs to revise its Techno-Economic exclusions which exclude urban/populated areas, so that the potential for large commercial and small utility scale solar resources at or near load can be mapped and quantified by CEC.

Selecting resources based on the delivered cost of energy is a critical step. When transmission planning is done after a portfolio is selected, bulk grid resources appear artificially cheap (a proxy for this cost is the Transmission Access Charge,

[1] https://www.californiadgstats.ca.gov/ ; https://www.woodmac.com/industry/power-and-renewables/us-solar-market-insight/

which is now 7¢/kWh in SDG&E territory, and transmission associated costs have long been rising at average rates exceeding 8% and are only forecast to escalate)

Policies for planning (and compensation) with regard to DER should recognize the full stack of value provided by DER, including the important work at the CPUC on quantifying the value of resilience. As we commented previously, non-energy benefits should be quantitated and valued.

Recommendation:

- In order to have an accurate sense of DER potential, the CEC should expand the land use survey effort to include–not exclude–the substantial acreage on brownfields,[2] canals,[3] highway right of ways, parking lots,[4] in addition to commercial and industrial rooftops.[5]

We appreciate the ongoing collaboration with the Joint Agencies to accelerate our progress in meeting SB100 goals.

Sincerely,

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[2] EPA published a study of 'RE-Powering' sites representing a large and varied collection of sites that include former Superfund sites, brownfields, landfills, and mine sites, as well as other formerly contaminated sites under various federal and state cleanup programs. It shows 2.7GW potential in SCE territory: https://www.epa.gov/sites/default/files/2016-12/documents/epa_repowering_community_solar_discussion_paper_final_120716_508.pdf

[3] A March 2021 paper in Nature '*Energy and water co-benefits from covering canals with solar panels*' conducted techno-economic simulations of solar photovoltaic panels covering California's 6,350 km canal network, and while it focused on avoided evaporation it found that "The net present value of over-canal solar exceeds conventional overground solar by 20–50%, challenging the convention of leaving canals uncovered and calling into question our understanding of the most economic locations for solar power."

[4] 200,000+ acres of parking lots in California; Geological Survey data release. 2019. https://doi.org/10.5066/P9UTMB64

[5] 11,500 MW potential of large commercial or industrial rooftops within 3 miles of distribution substations; E3 and Black & Veatch. 2009. Summary of PV Potential Assessment in RETI and the 33% Implementation Analysis, CPUC Re-DEC Working Group Meeting, December 9, 2009, p. 24. NREL's 2016 *Rooftop Solar Photovoltaic Technical Potential in the United States: A Detailed Assessment* https://www.nrel.gov/docs/fy16osti/65298.pdf Table 5 shows larger buildings add 53.2GW for 80TWh/y.

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Claire Broome

350 Bay Area