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Land Use Screens must consider Distribution Grid Solar PV Potential

Additional submitted attachment is included below.

California Energy Commission
Docket Unit, MS-4
Docket No. 22-IEPR-02
715 P Street
Sacramento, California
95814-5512

Re: DRAFT STAFF REPORT - Land-Use Screens for Electric System Planning (Draft Report)

Dear CEC Vice Chair Gunda and Members of the Commission:

350 Bay Area appreciates CEC staff work on this draft report on Land-Use Screens as an important tool for identifying pathways to achieve California's SB 100 target of 100% renewable energy. As noted in the background section "One key finding from the report was that sustained record-setting renewable generation and energy storage build rates will be required to meet the target in a high electrification future" [1] Land availability and permitting constraints will be challenging; the Land-Use Screens are intended to help address these issues, while preserving key state biodiversity, habitats, resilience, and natural resources.

We also note that the Joint Agencies' SB100 2021 report recommends "Create a structure that better integrates statewide electricity planning and local land use planning and permitting that recognizes the scale and pace at which clean energy projects and supporting infrastructure must be built to achieve SB 100."[2] We are therefore deeply concerned that the draft report fails to recognize, and ideally incorporate in land use planning models, the substantial potential for energy resources on the Distribution Grid (DG) to help meet the need for electricity while preserving important state natural and working lands.

Distributed Generation is not a small portion of California solar PV capacity–for example, over half (52%) of 5360 MW of new California solar capacity installed in the past 2 years has been added on the distribution grid[3].

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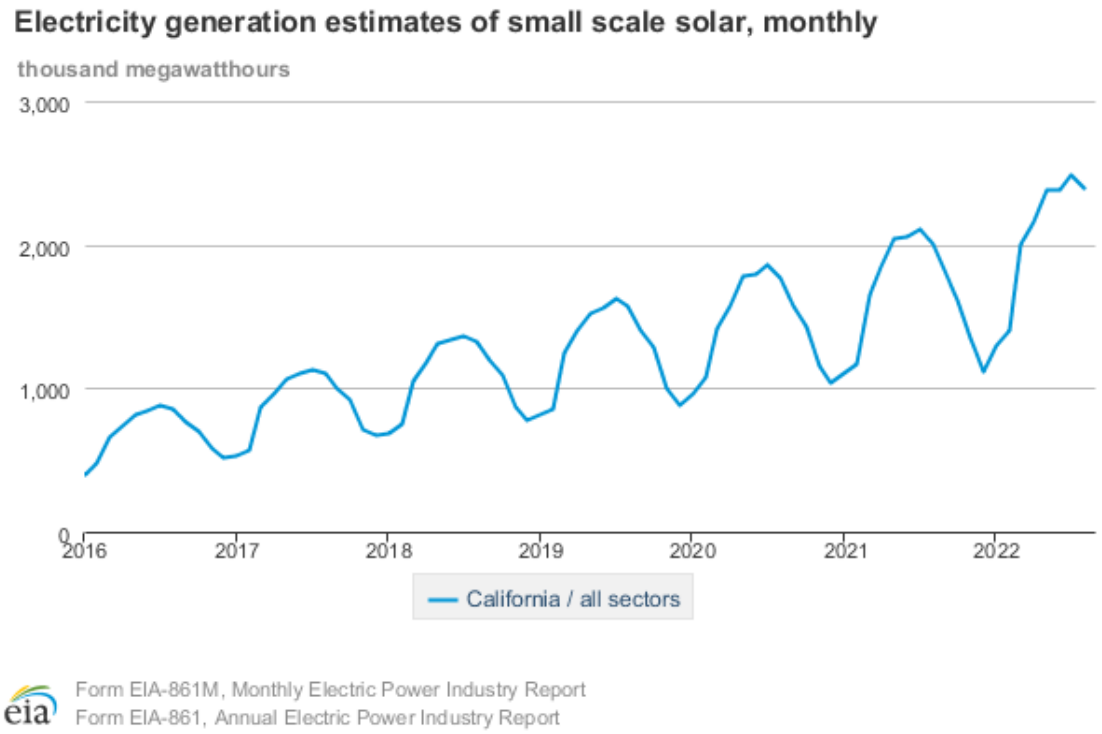
[1] Land-Use Screens for Electric System Planning (Draft Report) p 11
[2] Gill, Liz, Aleecia Gutierrez, Le-Quyen Nguyen, and Terra Weeks. 2021. Report to the Governor on Priority SB 100 Actions to Accelerate the Transition to Carbon-Free Energy. California Energy Commission. Publication Number: CEC-200-2021-008 p27
[3] California Distributed Generation Statistics, Statistics and Charts: https://www.californiadgstats.ca.gov/charts/;

The US Energy Information Agency shows the recent rapid growth in California of small scale PV (under 1 MW)[4]



A 2016 National Renewable Energy Laboratory (NREL) Report found sufficient rooftop solar potential in California to satisfy 74% of the state's 2013 energy use[5]. A Vibrant Clean Energy model for the United States which optimizes DG generation and storage (as well as transmission/utility scale) finds that the DER optimized scenario meeting clean energy goals is $88 billion lower cost than the "Business As Usual" scenario by 2050--and results in **decreasing** the cost of electricity.[6]

We urge the CEC to specify how they will consider solar DG potential, such as that on brownfield sites, parking lots, and other developed lands in urban and suburban areas. PV on such sites would not require new or existing transmission lines, and could reduce

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California Solar Energy Statistics and Data:
https://ww2.energy.ca.gov/almanac/renewables_data/solar/index_cms.php

[4] https://www.eia.gov/beta/states/states/ca/data/dashboard/renewables

[5]Rooftop Solar Photovoltaic Technical Potential in the United States: A Detailed Assessment:
https://www.nrel.gov/docs/fy16osti/65298.pdf

[6] Clack CTM Why Local Solar For All Costs Less: A New Roadmap for the Lowest Cost Grid
https://www.vibrantcleanenergy.com/wp-content/uploads/2020/12/WhyDERs_ES_Final.pdf

demand on the transmission grid. Capital costs for new transmission lines and ongoing monthly charges on ratepayers for Operation and Maintenance of transmission lines could be avoided.

The development of the Land Use Screens has been focused on siting issues for utility scale solar. It may not be possible at this stage to incorporate DG sites in the GIS model, although we urge that be strongly considered. At a minimum, DG potential should be estimated and incorporated in at least two components of state modeling: 1) in considering the target amount of utility scale capacity needed in the Land Use Scenarios, the total should be decreased by capacity available on the Distribution Grid. 2) the draft report states the intent to use the updated Land Use Screens in the RESOLVE model, a key component of CPUC Integrated Resource Planning (as well as CARB's Scoping Plan Pathways model).

> "The IRP process includes capacity expansion modeling, using the RESOLVE model, of the electric system, providing the analytical foundation for the CPUC to require LSEs to procure new energy resources, such as renewable generation and storage resources to achieve California's goals. RESOLVE co-optimizes investment and dispatch to identify least-cost resource portfolios that meet policy and reliability targets. **The CPUC's IRP process includes land-use screens as part of the RESOLVE model.**
>
> **...**
>
> As presented in this report, CEC staff propose updating the land-use screens used to support the **IRP**, SB 100 modeling, and busbar mapping."[7]

The CEC should work with the CPUC to assure that DG PV is considered in system planning. If the RESOLVE optimization model uses land-use screens that only consider utility-scale solar as a selectable input (the IRP use of RESOLVE incorporates estimated trends in behind-the-meter solar growth as a fixed input), the RESOLVE model is not able to optimize for or select wholesale distributed generation resources. Since these can be connected directly to the distribution grid, they are approximately 3 cents cheaper per kWh and therefore would be "least cost" compared to PV requiring the transmission grid. Omitting wholesale distribution potential locks in added costs for transmission and unnecessarily increases pressure to develop remote utility-scale projects that can harm the health of California's natural and working landscape. Furthermore, land use screens that ignore PV potential on the DG may artefactually constrain the amount of solar capacity assumed to be available.

[7] Draft report op cit p17-18

We recommend that Land use screens should allow assessment of compatible sites near population centers, including but not limited to reservoirs, brownfield sites, parking lots, and other ground mount distributed generation in high population areas of the state and should quantify area for the same, including rooftop potential. Datasets that allow site assessment and area quantification for renewables generation on irrigation canals, highway and railroad rights of way, airports, military lands, etc. should also be included.

With regard to which screen is most appropriate for consideration, we strongly endorse use of screen 2 (or preferably screen 3) as the primary approach. Inclusion of landscape intactness, proximity to protected areas, and terrestrial climate resilience are core, not optional needs for California's future.

Thank you for the opportunity to comment.

With regards,

/s/
Claire Broome, MD
Representing 350 Bay Area

350 Bay Area is a non-profit organization focused on ensuring a sustainable climate and associated environmental and economic justice for all, with a reach of over twenty two thousand people, primarily concentrated in the nine Bay Area counties. We comment from both an environmental and ratepayer perspective.