

**DOCKETED**

<b>Docket Number:</b>	21-SIT-01
<b>Project Title:</b>	21-SIT-01, SB100 Implementation Planning for SB100 Resource Build
<b>TN #:</b>	239827
<b>Document Title:</b>	Audubon Comments on SB100 Starting Point for CAISO 20-year Outlook
<b>Description:</b>	N/A
<b>Filer:</b>	System
<b>Organization:</b>	Audubon
<b>Submitter Role:</b>	Public
<b>Submission Date:</b>	9/23/2021 1:38:36 PM
<b>Docketed Date:</b>	9/23/2021

*Comment Received From: Garry George  
Submitted On: 9/23/2021  
Docket Number: 21-SIT-01*

**Audubon Comments on SB100 Starting Point for CAISO 20-year Outlook**

*Additional submitted attachment is included below.*



September 23, 2021

California Energy Commission  
SB 100 Implementation Planning for SB 100 Resource Build  
SB100 Starting Point for the CAISO 20-year Transmission Outlook  
Uploaded to Docket: 21-SIT-01

Dear CEC:

Audubon protects birds and the places they need, today and tomorrow. Audubon works throughout the Americas using science, advocacy, education, and on-the-ground conservation. State programs, nature centers, chapters, and partners give Audubon an unparalleled wingspan that reaches millions of people each year to inform, inspire, and unite diverse communities in conservation action. A nonprofit conservation organization since 1905, Audubon believes in a world in which people and wildlife thrive.

Audubon's climate science at <https://climate.audubon.org> reveals that 389 species of N. American bird may go extinct if we can't keep warming to 1.5° Celsius. Audubon is committed to the goal of SB100's 100% clean energy by 2045.

Audubon supports distributed energy resources (DERs) such as rooftop, parking lot, community solar and microgrids as the "least impact" on wildlife build out of solar energy and the most equitable for disadvantaged communities (DACs). Utility-scale solar, wind, geothermal, storage and other new clean energy technologies (USCETs) also play a key role in rapidly reducing our emissions that cause climate change and we support them when well-site and operated to avoid, minimize, and mitigate effectively for their impact on birds and the places birds need today and tomorrow.

Since today's emissions reductions will take decades to take effect on warming, in the interim it is crucial to site utility-scale projects to avoid natural high conservation value lands that birds and other wildlife need to adapt to a warming climate.

To build-off of the 2021 SB 100 Report, the CEC, CPUC, and the CAISO collaborated on an approach to translate the analyses conducted for the first SB 100 joint-agency report into a Starting Point scenario for use by the CAISO in the 20-year outlook. The Starting Point scenario, and the criteria for using that scenario to study the transmission required for a particular portfolio of resources studied in the 2021 SB 100 Report, are described in them SB100 Starting Point Report from CEC.

The objective of CAISO's 20-year outlook is to explore longer term grid requirements and options for meeting the state's greenhouse gas reduction goals. With this objective in mind, the Starting Point scenario is designed to provide information for a wide range of potential transmission needs driven by a combination of potential resource opportunities.

Audubon salutes the CEC for

- stepping up to integrate CEC planning with transmission planning by CAL ISO and CAL ISO's new twenty-year planning process
- extending the horizon of the integration of transmission planning and resource planning to at least 20 years
- developing a scenario that assumes 15GW of natural gas power plant retirements rather than the 4,722GW of the 2040 SB 100 Core Scenario and filling that gap with renewable energy resources
- identifying regions to prioritize where transmission planning could bring solar and wind and geothermal resources from areas already planned in collaboration with CEC to market and thereby have the most impact at the start to meet the goals of SB100 with efficiency in permitting.

We make the following recommendations that may help future iterations of the Report as well as the SB100 Report.

- The Report may benefit from including:
  - data on the role of Distributed Energy Resources (DERs) for resilience and equity in a 100% scenario with an emphasis on equitable community solar and rooftop solar<sup>1</sup> and parking lot policies. This was not included in the SB Starting Point Analysis
  - Analysis of rate-based changes that may occur if the 15% tax credit for transmission passes Congress in the reconciliation bill will have impact on transmission planning
  - Full consideration of re-powered existing wind projects in Wind Resources Areas which may or may not need upgrades
  - Analysis of benefits of incorporation of emerging technologies in transmission planning such as
    - grid-forming inverters
    - underground or undersea HVDC cables
    - more efficient solar panels that may reduce the land use from 7 acres/MW to 5 acres/MW currently, and lower for the future.
    - upgrades in battery storage duration

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<sup>1</sup> O'Shaughnessy, E., Barbose, G., Wiser, R. *et al.* The impact of policies and business models on income equity in rooftop solar adoption. *Nat Energy* **6**, 84–91 (2021). <https://doi.org/10.1038/s41560-020-00724-2>

- storage technologies other than hydro pump storage
- The Report rightly builds on previous and upcoming planning to integrate with CAL ISO transmission planning in a welcome integration of agency efforts. If transmission planning is now looking out 20 years instead of the 10-year standard, then the Report should prioritize the following areas with calculations of the total amount of lower impact lower cost<sup>2</sup> more efficient and timely permitted energy that could be built out from these three resource areas alone if transmission were available.
  - a. Desert Renewable Energy Conservation Plan (DRECP) Area Development Focus Areas
    - i. The Plan Area and its DFAs in Private and Public lands could be prioritized for build out with transmission access since they have been analyzed
  - b. San Joaquin Least Conflict PV Stakeholder Solar Siting Process
    - i. Since the process, additional lands have become suitable for conversion to PV solar with water re-allocations and Groundwater Sustainability Plans that limit agriculture. Small farm businesses and the communities they hire can be converted to solar if there was transmission access. These lands should be identified and included.
  - c. Offshore Wind Planning
    - i. The Governor has signed AB525 and the CEC will be tasked with a “least conflict” planning process for California Current System (CCS) waters as a tool for siting of offshore wind. This process could go hand in hand with transmission planning needed to bring this energy to markets and now prioritizes this planning over a more than 20 year horizon.
  - d. The CEC and CAL ISO should encourage Counties to plan for “least conflict” areas so that they may influence transmission and thereby participate in property tax and other income that may come to the counties after the sunset of the property-tax exemption for PV solar legislation in 2024.
  - e. The Report could encourage CAL ISO to resolve queue congestion as a priority. There were 734 GW of proposed generators waiting in interconnection queues nation wide at the end of 2019, almost 90 percent of which were renewable and storage resources.<sup>3</sup>
  - f. The Report might consider analyzing interregional transmission planning based on CEC’s planning efforts for resources that may require more than one

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<sup>2</sup> Dashiell, S.; Buckley, M.; Mulvaney, D. Green Light Study: Economic and Conservation Benefits of Low-Impact Solar Siting in California, 2019.

<sup>3</sup> Rob Gramlich and Jay Caspary, Americans for a Clean Energy Grid and Macro Grid Initiative, Planning for the future: FERC’s opportunity to spur more cost-effective transmission infrastructure (2021) at 26

transmission provider in the 20-year horizon as required under FERC Order 1000.<sup>4</sup>

- The Report could consider additional rankings in Table 2 of the Report: Comparison of 2040 SB 100 Core and Starting Point Scenario such as Equitable Buildout value (EBV), Baseload (Grid Resilience) Value (BV) and Conversion value of gas and once through cooling value or other technologies (CV) and Environmental Value (EV) such as upgrading or undergrounding transmission lines rather than building new lines..
  - a. Geothermal is rightly increased to 2,332 MW over 2040 SB 100 Core Scenario analysis of 135MW and would rank high in EBV and BV signaling a priority for transmission planning in Imperial County.
  - b. Caution should be used in specifically modeling Long-duration Energy Storage (LDES) as pumped hydroelectric energy storage only. Recently proposed pumped hydro projects are water-intensive in a state undergoing the most severe, sustained drought in history, and have been proposed as unwanted new dams when dams may become inoperative due to low water levels<sup>5</sup> in sites of high conflict in areas that attract strong opposition from environmental and conservation groups.<sup>6,7</sup>
  - c. The Table calculates 10,000MW of offshore wind by 2040 in line with AB525 rather than the 2040 SB 100 Core Scenario of 5,256. However, this resource may rank high in BV and onshore transmission may utilize existing transmission such as from Diablo Canyon Nuclear Power Plant or Morro Bay dormant towers and sub-station.
  - d. Out of state wind and solar may be undervalued at 12MW as new transmission lines from Wyoming, New Mexico and Arizona will bring wind resources to California. When ranking out of state wind or other resources the EV may be low if the project is in a state of origin with lower environmental standards than California. California should be cautious to not repeat its treatment of coal i.e. exporting impacts to other states, especially cautious in exporting impacts to DACs.
  
- The Report should include links to the environmental screens and online spatial data and update them with recent and local data in a call for data.

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<sup>4</sup> Specifically, Order 1000 requires each public utility transmission provider to establish procedures with each of its neighboring transmission planning regions for the purpose of: (1) coordinating and sharing the results of the respective regional transmission plans to identify possible interregional transmission facilities that could address regional transmission needs more efficiently or cost-effectively than separate regional transmission facilities; and (2) jointly evaluating those interregional transmission facilities that the pair of neighboring transmission planning regions identify.<sup>27</sup> Additionally, Order 1000 requires each public utility transmission provider to develop procedures by which differences in data, models, assumptions, transmission planning horizons, and criteria used to study a proposed interregional transmission project can be identified and resolved for purposes of joint evaluation, but left each pair of neighboring regions discretion to implement this requirement.

<sup>5</sup> <https://www.cnn.com/2021/06/17/us/california-drought-oroville-power/index.html>

<sup>6</sup> <https://www.latimes.com/environment/story/2020-03-05/is-hydropower-key-to-a-clean-energy-future>

<sup>7</sup> <https://www.sfchronicle.com/science/article/New-dam-proposal-in-Sierra-Nevada-stirs-debate-13839661.php>

- The Report relies on terrestrial biological information maintained by the California Department of Fish and Wildlife but there may be other data from conservation organizations or local scientists that may provide spatial data on species and landscapes that are important.

Audubon looks forward to working with CEC, CPUC, CARB, CALISO on planning and siting of clean energy in California to meet SB100 goals to benefit our birds and the places our birds need today and tomorrow.

Respectfully,

A handwritten signature in cursive script, appearing to read "Garry George", followed by a horizontal line extending to the right.

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