

DOCKETED	
Docket Number:	23-SB-100
Project Title:	SB 100 Joint Agency Report
TN #:	252193
Document Title:	Sonoma Clean Power Authority Comments - Senate Bill 100 Kickoff Workshop Comments
Description:	N/A
Filer:	System
Organization:	Sonoma Clean Power Authority
Submitter Role:	Public Agency
Submission Date:	9/8/2023 2:43:51 PM
Docketed Date:	9/8/2023

*Comment Received From: Sonoma Clean Power Authority
Submitted On: 9/8/2023
Docket Number: 23-SB-100*

SCP Senate Bill 100 Kickoff Workshop Comments

Additional submitted attachment is included below.



431 E Street
Santa Rosa, CA 95404

sonomacleanpower.org

September 8, 2023

California Energy Commission
715 P Street
Sacramento, California 95814
Via CEC Electronic Commenting System (Docket No. 23-SB-100)

Senate Bill 100 Kickoff Workshop Comments

Sonoma Clean Power Authority (SCPA) is the public power provider for Sonoma and Mendocino counties, serving a population of about a half-million. In downtown Santa Rosa, SCPA operates the only Advanced Energy Center in the United States dedicated to helping customers transition to 100% renewable energy for their homes, businesses, and cars. SCPA is also the only power provider in California offering 100%, 24/7 renewable energy generated purely from within its service territory.

Introduction and Summary

SCPA appreciates the opportunity to provide early feedback on the process for developing the 2025 Senate Bill (SB) Report. The preceding 2021 SB 100 report has been an invaluable resource in validating that California's ambitious decarbonization targets are achievable and providing a blueprint for the upfront planning, infrastructure investment, research, supportive policy, and procurement required to get there. SCPA believes the 2025 report should be focused on addressing unresolved challenges in the 2021 report—such as finding cost-effective pathways that do not rely on retaining natural gas capacity, defining the technologies that provide clean baseload and clean dispatchable capacity and their corresponding infrastructure and policy requirements, and mitigating the risk inherent with new technology development, such as offshore wind deployment.

Natural Gas Fleet Retirement

Many comments in the kickoff workshop highlighted the need to identify a core pathway that does not rely on natural gas capacity for reliability. Retaining the natural gas fleet continues to burden many disadvantaged communities with adverse health

impacts and reduces non-energy benefits. This feedback is well-aligned with SCPA's values. In the 2022 Integrated Resource Plan (IRP) process, SCPA adopted new hourly marginal emission mitigation (by 2026) and winter night reliability (by 2030) targets for its own portfolio that are specifically designed to eliminate reliance on natural gas facilities. These targets are driving SCPA to procure a more diverse set of resources including out-of-state wind, long-duration energy storage, and geothermal.

Removing natural gas capacity from the menu of options available to the state for meeting SB 100 targets will have a similar impact on the 2025 report—it will force more investment and planning in clean firm resources that could ultimately not only improve non-energy benefits to front-line communities, but also prove more cost-effective. In this vein, **SCPA recommends that the Joint Agencies eliminate natural gas resources from baseline resources in the modeling in the modeling inputs in all modeling sensitivities except for the Reference Pathway.**

Retiring the natural gas fleet and limiting combustion in disadvantaged areas that likely overlap local reliability needs will be difficult and likely result in an apparent cost premium—but is critical in delivering environmental justice and a decarbonized grid that does not rely on continuing to burden disadvantaged communities. SCPA realized the need for early and upfront investment in overcoming this challenge and created the Geothermal Opportunity Zone (GeoZone) initiative to recruit capital and expertise from the geothermal industry to expand local geothermal capacity using new technologies. The GeoZone has successfully committed three highly capable partners to testing and deploying advanced geothermal technologies in SCPA's territory in exchange for an upfront offtake commitment and support with engaging the community. SCPA is hopeful that the 2025 SB 100 report will catalyze similar initiatives at the state level to de-risk and expand the amount of clean firm capacity available to meet SB 100 targets.

On a related note, SCPA does not support grouping all combustion resources with the natural gas fleet. As an example, remote biomass facilities have a very different environmental and societal impact than a natural gas facility operating in a densely populated disadvantaged community. However, SCPA does support the Joint Agencies considering the potential local pollution and other societal impacts of zero-carbon technologies like hydrogen repowering or direct air capture facilities that are in densely populated disadvantaged areas which are likely not dissimilar to natural gas facilities. **SCPA recommends refining the combustion allowed sensitivity to**

specifically include combustion in densely populated disadvantaged communities.

Defining Specific Clean Baseload and Dispatchable Resource Technologies

The 2021 SB 100 report included a study scenario on the potential impact of emerging zero-carbon baseload or dispatchable resources—but treated them generically without considering the planning and policy implications of each specific technology. The study results showed that including these resources could enable more natural gas retirement, substantially reduce solar capacity and the corresponding land use impacts, and reduce the cost of a SB 100 portfolio (albeit at fairly aggressive cost estimates). As proposed, the process for the 2025 report only breaks-out the role of hydrogen and the sensitivity analyses do not consider the varying role of other emerging technologies.

SCPA recommends the Joint Agencies build and expand upon an initiative started by the California Public Utilities Commission (CPUC) last fall to characterize emerging low and zero-carbon technologies as input to their IRP process. That effort should go beyond literature research and compilation of LCOE figures and involve a workshop with experts from industry, academia, national labs, and the Department of Energy. In-scope technologies should at least include new long duration storage technologies, advanced geothermal technologies and hydrogen repowering. The workshop should be used to calibrate assumptions about the scale, cost, geographic constraints, risks, policy opportunities, and synergies or conflicts with alternative resource types. If technologies are identified that have a viable path to playing a significant role in California’s decarbonized grid, the Joint Agencies should identify a discrete sensitivity for the level of its adoption in defining SB 100 pathways and use it in place of the generic resources modeled in the 2021 report. Providing additional definition on viable emerging technologies will add credibility to the SB 100 plan and enable the selection of pathways that do not rely on natural gas resources.

Although it is too early to select a technology for providing clean firm capacity, SCPA is particularly interested in the opportunity advanced geothermal technologies offer in meeting SB 100 targets. There have been significant breakthroughs in the last several years in commercializing Enhanced Geothermal System (EGS) and Advanced Geothermal System (AGS) technologies that utilize existing technologies already in use in the oil and gas industry and expand the scope of where geothermal can be developed. These same technologies also offer promising non-energy benefits: they

use much less land than other renewables, can be designed to be zero-emission, are built with domestic materials, and involve significant and long-term employment of the local workforce. Testing has been completed to validate that new technologies can make geothermal flexible as well, allowing it to dispatch to grid needs and providing the combined capabilities of a baseload resource and long-duration storage. **SCPA specifically asks the Joint Agencies to evaluate the expanded capacity, dispatchability, and non-energy benefits of advanced geothermal technologies in identifying candidate resources for SB 100 pathways.**

Importantly, upfront planning and investment will be required if California wants to leverage advanced geothermal technologies in its decarbonized grid: early projects will be geographically concentrated near shallower thermal resources that will need transmission capacity, the current permitting structure in California leads to long project development cycles from exploration through commissioning, and geothermal research and deployment is underfunded from the Department of Energy compared to competing technologies. A specific focus on the value of enhanced geothermal in the SB 100 Report will help catalyze this promising technology.

Offshore Wind Mitigation

The 2021 SB 100 Core Scenario assumed development of 10 GW of offshore wind in 2045 that serves over 10% of the state's load. The CPUC's latest planning portfolio sensitivity for the 2023-2024 Transmission Planning Process tests an even more aggressive portfolio—with up to 13.4 GW of capacity by 2035. The cost assumptions underpinning these large-scale offshore wind buildouts rely on very aggressive cost estimates from the National Renewable Energy Laboratory (NREL) of \$57 to \$68 per megawatt hour. SCPA strongly supports the state's staunch support for developing offshore wind—and early planning and investment is prudent—but SCPA is concerned that the state is not appropriately planning for a scenario where offshore wind does not meet the assumed timeline or cost targets that allow it to play the primary role in decarbonizing California's grid. Offshore wind projects on the east coast, which do not rely on new floating technology required in California, are already experiencing pervasive cost increases, driving LCOEs above \$114 per megawatt hour¹. It is important to note that floating offshore wind technology has more technology risk than commercialized technologies used in the East Coast and other parts of the

¹ Jain, Atin. Soaring Costs Stress US Offshore Wind Companies, Ruin Margins. 1 Aug 2023. <https://about.bnef.com/blog/soaring-costs-stress-us-offshore-wind-companies-ruin-margins/>

world. These technology and costs risks should be accounted for in the SB 100 report.

SCPA recommends the Joint Agencies test a scenario with increased offshore wind costs and reduced available capacity to understand the potential implications to SB 100 planning. In the 2021 SB report, the Joint Agencies included a study scenario with no offshore wind. This study revealed an increased need for geothermal capacity and paired solar with storage. The proposed pathways for the 2025 report only test a sensitivity with an increased level of offshore wind. SCPA would suggest including a risked offshore wind assumption in at least one of the pathways, to inform the types of resources that the state needs to support as mitigation to the risks of scaling-up offshore wind. SCPA would also advocate for the Joint Agencies to use the 2025 SB 100 report as an opportunity to identify synergies between different resource types and “least regret” investments that enable the state to plan for a portfolio that can quickly adapt to different technological and cost trajectories with minimal cost impact.

Sincerely,

/s/ Ryan Tracey

Ryan Tracey
Director of Planning and Analytics
Sonoma Clean power Authority
rtracey@sonomacleanpower.org