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UCS Comments on SB 100 Draft Results Workshop

Additional submitted attachment is included below.

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Docket 23-SB-100
Submitted via electronic comment system

RE: Comments of the Union of Concerned Scientists on the 2025 SB 100 Report Draft Results

The Union of Concerned Scientists ("UCS") appreciates the opportunity to submit these comments on the 2025 SB 100 Report Draft Results Workshop conducted on February 19, 2026.

UCS thanks the California Energy Commission ("CEC"), California Public Utilities Commission ("CPUC"), and California Air Resources Board ("CARB") for their leadership in crafting the 2025 SB 100 Joint Agency Report, and for all the hard work that has gone into the draft results presented at the February workshop.

In these comments, UCS offers five pieces of feedback, which are summarized below:

1. UCS recommends the Joint Agencies release a draft report for public comment as they did during the 2021 SB 100 Report process. This additional comment period is important for stakeholders to evaluate and contribute to the conclusions and recommendations drawn from the modeling results.
2. UCS is concerned that the level of wind resources, particularly low-capacity factor wind resources, selected in the models will be difficult to implement as the industry in California currently stands. UCS supports the use of wind resources and encourages the state agencies to include recommendations to spur wind development in the report conclusions.
3. UCS is concerned about the assumptions in the 15 GW Carbon Capture scenario, particularly around the costs and CO2 emission capture rates of carbon capture and storage (CCS) technology. UCS encourages the Joint Agencies to consider more conservative assumptions as there remains uncertainty around the technology.
4. UCS recommends that the modeling includes changes in federal incentives that occurred in from the One Big Beautiful Bill Act (OBBBA) in the reference scenario. The report's modeling should include the reality of this federal landscape, particularly to assess cost implications.
5. UCS would like to thank the Joint Agencies for extending this comment period and releasing updated inputs, assumptions, and data associated with the results presentation.

First, UCS recommends the Joint Agencies release a draft report for stakeholder comments. The modeling results are only one aspect of the SB 100 report. The framing, conclusions, and

recommendations are often the pieces that shape policy and regulatory decisions. The SB 100 Report is also relatively accessible to the public and these qualitative results can shape public discourse. The findings drawn from the modeling data can impact how California chooses to transition to a clean future. UCS believes it is important for there to be more dialogue and consensus around what these are through the opportunity to review a draft report.

For example, in these draft results workshop, the presentation noted in the conclusions that a large amount of clean firm resources was needed across scenarios. While long duration energy storage is selected for across scenarios, geothermal and CCS are very minimal in most scenarios. A draft report would be helpful for understanding the reasoning behind these conclusions. UCS would additionally like clarification if CCS is considered a fully clean firm resource as capture rates are not 100% and more transparency around that decision if so.

Second, UCS strongly supports the use of wind resources to reach the state's mandated clean energy goals. However, UCS has concerns that the state currently lacks the needed incentives and regulatory environment to reach these wind resource goals presented in the modeling results. A UCS analysis[1] shows that wind development in the state is significantly lagging and not meeting the build rates needed to meet state goals. The draft results call for an additional 24 GW of in-state wind resources and 27 GW of out-of-state wind resources by 2045, which is more than double the total amount of wind called for in the previous SB 100 report.

The workshop presentation notes that "remaining wind available in California largely has a capacity factor below what is currently considered commercially viable (~20%)"[2]. As noted in the above UCS analysis, there has been very little wind development recently and only about 2 GW of wind resources currently sitting in CAISO's interconnection queue seems viable in the next decade. UCS is therefore highly skeptical that the amount of low-capacity factor wind needed in the modeling results would be developed without policy changes. UCS strongly suggests the Joint Agencies consider recommendations in the SB 100 Report that incentivize the development of wind resources, and especially this low-capacity factor wind, needed to meet the modeled portfolios.

Third, UCS would like to raise concerns about the assumptions that went into the 15GW Carbon Capture scenario. This modeled scenario results in the lowest system costs and smallest amount of resources built of any of the scenarios. UCS is concerned that this modeling result is overly optimistic given the amount of uncertainty in CCS technology compared to proven clean energy solutions such as solar, wind, and storage resources.

The costs of CCS technology are unclear and quite variable as there are very few operational CCS examples in the US, and retrofitting plants with CCS technology is highly dependent on the plant design. It would be helpful for the Joint Agencies to clarify the cost assumptions used from NREL's 2024 ATB as there are multiple technology scenarios and sub-groups that significantly change the capital costs. The SB 100 Input and Assumptions presentation does not specify which assumptions are being used and what the justification is. Additionally, while NREL's 2024 ATB suggests that CCS technology costs steadily fall through 2035,

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[1] Specht, Mark. "California is Lagging on Wind Development. Why?" The Equation. January 29, 2026. https://blog.ucs.org/mark-specht/california-is-lagging-on-wind-development-why/

[2] California Energy Commission. "Presentations – Workshop on 2025 SB100 Joint Agency Report Draft Results." February 19, 2026. Slide 23. https://efiling.energy.ca.gov/GetDocument.aspx?tn=268689&DocumentContentId=105843

evidence suggests that CCS is struggling to realize these cost decreases[3] [4]. Further, UCS notes that tariffs, supply chain disruptions, and widespread cancellation of federal investments in CCS projects threaten to further increase project costs.

UCS additionally has concerns with the 95% capture rate used in the assumptions. While this capture rate is technically feasible and UCS strongly supports this high performance standard for CCS, actual CCS projects often report much lower capture rates[5]. Given that CCS capture rates are not consistently performing at this standard to date, the modeling in SB 100 should reflect this by not assuming a 95 percent capture rate as the baseline assumption of CCS.

UCS recommends the Joint Agencies use conservative CCS assumptions given the high existing uncertainty around the technology. UCS suggests using the most conservative cost estimates available in NREL's 2024 ATB and consider whether these costs should be more conservative given the current state of CCS. The Joint Agencies should additionally consider including a sensitivity analysis to test the implications of CO2 emissions capture rates that are lower than 95% in the modeling when using CCS technology to reach state mandated GHG goals.

Fourth, UCS recommends including changes in federal incentives, particularly the early expiration of tax credits, into all of the scenarios, including the reference scenario. The implementation of the OBBBA and the subsequent phasing out of certain clean energy tax credits will have cost implications to the resources and how they are selected in the model. The SB 100 Inputs and Assumptions presentation notes that the Investment Tax Credit and Production Tax Credit will be applied to all renewable resources out to 2050[6]. While some renewable resources will still be able to take advantage of these tax credits in the short-term, the modeling should include the reality that these tax credits are being phased out much earlier than anticipated. To properly plan for the state's pathway to a clean energy future, it is critical to include these new cost assumptions. Knowing the impact of these cost additions can help the state consider actions for potential cost mitigation.

Finally, UCS would like to thank the Joint Agencies for being responsive to the Joint Organizations' request on March 3, 2026 for the release of inputs, assumptions, and presentation modeling results data, as well as a two-week extension for comments to incorporate this new information into comments. UCS acknowledges the difficulty of releasing PLEXOS modeling results given that the program does not transfer well to Excel and csv files. However, UCS would recommend creating a more robust Excel sheet for the modeling data beyond the numbers in the presentation charts for future reports. For example, it would be helpful to have clearer data on the breakdown of existing, planned, and selected capacity for each scenario.

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[3] Sievert, Katrin, Cameron, Laura, Carter, Angela. 2023. Why the Cost of Carbon Capture and Storage Remains Persistently High. International Institute for Sustainable Development. https://www.iisd.org/articles/deep-dive/why-carbon-capture-storage-cost-remains-high

[4] Denis-Ryan, Amandine. 2024. CCS hype and hopes sinking fast. Institute for Energy Economics and Financial Analysis. https://ieefa.org/resources/ccs-hype-and-hopes-sinking-fast

[5] Schlissel, David, and Anika Juhn. 2023. Blue Hydrogen: Not Clean, Not Low Carbon, Not a Solution. Lakewood, OH: Institute for Energy Economics and Financial Analysis. https://ieefa.org/resources/blue-hydrogen-not-clean-not-low-carbon-not-solution

[6] California Energy Commission. "Inputs and Assumptions." February 19, 2026. Slide 20.

UCS looks forward to further participation in SB 100 implementation, and we thank the CEC, CPUC, and CARB for their consideration of these comments.

Sincerely,

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