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**Comments on SB 100 Joint Agency Report Charting a Path to a 100%
Clean Energy Future**

Additional submitted attachment is included below.



California Wind Energy Association

September 19, 2019

California Energy Commission
Docket No. 19-SB-100
Docket Office
1516 Ninth Street
Sacramento CA 95814

Submitted Electronically via CEC website to Docket 19-SB-100

Re: Comments on SB 100 Joint Agency Report: Charting a Path to a 100% Clean Energy Future

The California Wind Energy Association (CalWEA) is a 19-year-old trade association representing wind energy and related companies focused on the California market, primarily consisting of project owners, operators and developers of wind energy projects located in California. CalWEA is pleased to provide brief comments at the outset of the tri-agency process for completing the SB 100 Joint Agency Report, which will begin to chart the course for how the state can best achieve a 100% carbon-free electricity sector.

CalWEA's comments reflect our long history of advocating total cost and transparent cost accounting as the state seeks to achieve its clean energy goals. That history ranges from CalWEA's support of the "least-cost, best-fit" aspect of the landmark 2002 Renewables Portfolio Standard (RPS) legislation to our sponsorship of legislation (AB 1584 in the current session) that will require the CPUC to account for the known system-integration costs associated with the resource portfolios of load-serving entities (LSEs) and to assign those costs to LSEs accordingly. In short, CalWEA's member companies have always been willing to compete on an all-in, total-cost basis, and we believe that the total costs associated with different technologies and strategies for shifting off of fossil fuels – while not the only consideration – must be made transparent to the legislature and to policy makers at the agency level as decisions are made regarding how the state should go about achieving SB 100's goals.

If California is to shift to an increasingly electricity-driven economy, electricity must remain as affordable as possible, particularly to support the electrification of end-uses in other sectors. At the same time, other considerations, such as creating jobs and ensuring an

equitable green economy, will come into play. Only if the total costs associated with each program, technology, locations and alternative strategies are made transparent to decision makers can they make informed, effective trade-offs between costs and other objectives. We note that, while most, if not all, GHG-reduction options identified may ultimately need to be deployed at some level to achieve the 2045 zero-carbon target, the SB 100 study should identify options for strategically and cost-effectively sizing and sequencing programs over time.

The following are some examples of where, in the recent past, agency studies have made costs and trade-offs clear and transparent, and where they have not:

- The July 2018 Deep Decarbonization Study completed for the Energy Commission¹ quantified the enormous total-cost savings associated with diversifying the state's renewable resource portfolio with wind energy² and flexible loads, compared with relying solely on solar energy and batteries. These savings totaled some \$36 billion per year by 2050.
- The CPUC's first adopted Integrated Resources Plan³ shows that some 12,000 MW of new wholesale renewable energy resources will be needed by 2030, but failed to mention an important assumption, buried in the underlying analysis, that substantially reduced that capacity figure: high levels of behind-the-meter solar resources installed at an added cost of at least \$682 million/year.⁴ No mention was made of the resulting cost shift to non-participating customers on the order of \$4 billion annually by 2030.⁵ A cost-based analysis would have shown a far greater need for wholesale renewable energy and far less rooftop solar capacity.

¹ Mahone, Amber, Zachary Subin, Jenya Kahn-Lang, Douglas Allen, Vivian Li, Gerrit De Moor, Nancy Ryan, Snuller Price. 2018. *Deep Decarbonization in a High Renewables Future: Updated Results from the California PATHWAYS Model*. California Energy Commission. Publication Number: CEC-500-2018-012. (See p. 41.)

² The Deep Decarbonization study assumed a lower amount of potential in-state wind resource development than CalWEA estimates is now actually underway in California, and did not consider offshore wind. A subsequent study by E3 completed for Castle Wind shows that the production profile of onshore, in-state wind energy is the least-cost and best complement to the solar production profile, compared with out-of-state or offshore wind, and also showed that the total costs associated with offshore wind are potentially significantly lower than those of out-of-state wind. (See Figures 4 and 7 in [The Economic Value of Offshore Wind Power in California](#). August 2019.) All of these wind energy options should be evaluated in the SB 100 report.

³ CPUC Decision 19-04-040 Adopting Preferred System Portfolio and Plan for 2017-2018 Integrated Resource Plan Cycle. April 25, 2019.

⁴ CPUC Ruling Seeking Comment on the Proposed Reference System Plan and Related Commission Policy Actions Ruling, Attachment A, PDF-page 202. September 19, 2017.

⁵ CPUC Rulemaking 16-02-007, [Comments of the California Wind Energy Association on Draft Integrated Resource Plans of the Load-Serving Entities](#). September 12, 2018.

- The Energy Commission's 2019 Building Energy Efficiency Standards are branded as adopting only cost-effective measures, but the new rooftop photovoltaic requirement that is included in the standards is premised on the indefinite continuation of the CPUC's Net Energy Metering Successor Tariff (NEM 2.0) as the assumed compensation structure⁶ despite the CPUC's planned review of the tariff in 2020 which is widely expected to substantially reduce the compensation level.⁷

Again, it is important that the SB 100 Joint Agency Report clearly inform the legislature and agency decision-makers of the actual, total costs associated with each program, technology, resource location and alternative strategy so that they may make informed, effective trade-offs between costs and other objectives as California forges the path towards carbon-free electricity.

Sincerely,



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⁶ "Rooftop Solar PV System" (2019 Case Report - 2019-RES-PV-D), p. 34; prepared for the Energy Commission by Energy and Environmental Economics (September 2017). An "Avoided Cost for All" sensitivity was performed, showing that if all BTM generation were to be compensated at avoided cost, rather than NEM 2.0 rates which are an order-of-magnitude higher, the life-cycle benefit-to-cost ratio of the required PV system would fall to at or under 1.0 in 15 of 16 climate zones. (See Table 20.) A measure was deemed cost effective if the ratio is greater than 1.0. The standard was adopted on the bases of assumed B/C ratios of 2.0 or above for 15 of 16 climate zones. (See Tables 15-17.)

⁷ See, e.g., Gridworks, "[Sustaining Solar Beyond Net Metering](#)." January 2018.
