

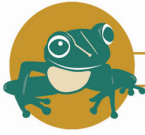
DOCKETED	
Docket Number:	19-SB-100
Project Title:	SB 100 Joint Agency Report: Charting a path to a 100% Clean Energy Future
TN #:	236020
Document Title:	Center for Biological Diversity Comment on Draft 2021 SB 100 Joint Agency Report Docket No 19-SB-100
Description:	N/A
Filer:	System
Organization:	Center for Biological Diversity
Submitter Role:	Public
Submission Date:	12/18/2020 10:57:56 AM
Docketed Date:	12/18/2020

*Comment Received From: Center for Biological Diversity
Submitted On: 12/18/2020
Docket Number: 19-SB-100*

Center for Biological Diversity Comment on Draft 2021 SB 100 Joint Agency Report Docket No 19-SB-100

Please find attached the Center for Biological Diversity's comment. Cited references will be provide via email to docke@energy.ca.gov.

Additional submitted attachment is included below.



December 18, 2020

Via upload to energy.ca.gov

Comments and references also submitted via email to docket@energy.ca.gov

Terra Weeks

Senior Advisor to Chair David Hochschild

California Energy Commission

1516 Ninth Street

Sacramento, CA 95814

**Center for Biological Diversity Comment on Draft 2021 SB 100 Joint Agency Report
Docket No. 19-SB-100**

Dear Ms. Weeks:

The Center for Biological Diversity (the Center) hereby submits these comments concerning the Draft 2021 SB 100 Joint Agency Report (Draft Report) prepared by the California Energy Commission (CEC), California Public Utilities Commission (CPUC) and California Air Resources Board (CARB).

The state policy under SB 100 is that “eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045 and 100 percent of electricity procured to serve all state agencies by December 31, 2045.” However, the increasing severity of the climate crisis is making clear that expedited timelines for climate action are essential. While the Draft Report does present scenarios that exceed the ambition prescribed by SB 100, it fails in centering and uplifting those that most align with keeping global warming below 1.5°C. The SB 100 Joint Agency Report should center scenarios that produce the greatest climate benefits, even if they call for more ambition than that derived from SB 100. This would serve as a guide for the state in improving its climate change mitigation efforts.

The Climate Crisis Demands Expedited Timelines for Substantive Action

To limit warming to 1.5°C, global CO₂ emissions must be cut in half by 2030—ten years from now—and reach near zero by 2050,¹ with faster reductions needed in the U.S.² A recent analysis found that, for the U.S. to do its fair share given historical emissions and capability, it should in effect reduce its CO₂ emissions by a total of 195 percent below 2005 levels by 2030, with at least

¹Intergovernmental Panel on Climate Change, Global warming of 1.5°C at 12-14, Figure 2.6, <https://www.ipcc.ch/sr15/> (2018).

²Climate Equity Reference Project, Climate Equity Reference Calculator, <https://calculator.climateequityreference.org/> (last visited Dec. 10, 2020).

70 percent of those emissions reductions achieved within the U.S. and the remainder through support to developing countries and their emissions reduction programs.³ Because California represents the largest share of the U.S. economy, it too has an outsized responsibility to reduce its emissions. As noted in the Draft Report, “A clean electricity grid can serve as a backbone to support the decarbonization of transportation, buildings, and some industries. Together with the electricity sector, these sectors account for 92 percent of the state’s GHG emissions.”⁴ Therefore, California also has a great responsibility to decarbonize its energy sector, but by 2030 or earlier as science and equity demand, rather than 2045. The Draft Report’s “Core Scenario” which still adheres to a 2045 deadline is simply out of sync with what is now required.

The Draft Report includes scenarios that accelerate the 100% clean energy target to 2030, 2035, and 2040, but makes a point to note that these scenarios should not be interpreted as within the intent or ability of the state.⁵ However, once again referencing the Draft Report, in 2020 Californians experienced historic climate change impacts with both record-breaking temperatures and horrific fires.⁶ So in California the climate has already worsened from when SB 100 was passed in 2018. With worsening climate conditions, the SB 100 target should be updated accordingly. That target should now be a just and equitable transition to 100% clean energy by 2030.

There is No Place for Fossil Fuels in a Carbon-Free Future

The Draft Report allows for fossil gas capacity to be retained to meet “reliability needs.” However, all phases of the gas lifecycle pose threats to our climate, health, and safety. The 2015 gas leak disaster at the Aliso Canyon gas storage facility here in California resulted in 109,000 metric tons of methane entering our atmosphere—the largest-known release of methane in U.S. history.⁷ Not only did the Aliso Canyon disaster exacerbate statewide greenhouse gas emissions and counter emissions reduction goals, it also harmed the public, producing in individuals acute effects such as dizziness, headaches, nausea, eye, nose and throat irritation, nose bleeds and likely long-term effects yet to be quantified. As evidenced by this disaster, the risks of keeping gas infrastructure in place far exceed any benefits.

Moreover, we must dispel the notion that fossil gas is a transition, bridge, or green energy source. While it is true that carbon dioxide emissions from a gas power plant at the smokestack are half those per unit of energy from coal, methane—a super-pollutant 87 times more powerful than CO₂ at warming the climate over a 20 year period—leaks during all phases of oil and gas production. If the methane leakage rate is greater than 2.4 percent of the gas produced, then the climate damage from the methane leakage cancels out any climate benefit that gas achieves over

³ U.S. Climate Action Network, The U.S. Climate Fair Share (2020), https://usfairshare.org/files/US_Climate_Fair_Share_Infographic.pdf

⁴ California Energy Commission et al., Draft 2021 SB 100 Joint Agency Report (“Draft Report”) (December 2020) at 14.

⁵ Draft Report at 16.

⁶ Draft Report at ii.

⁷ California Air Resources Board, Determination of Total Methane Emissions from the Aliso Canyon Natural Gas Leak Incident (2016).

coal at the smokestack.⁸ Therefore, depending on the overall leakage rate, fossil gas provides little or no climate benefit over coal: in fact, fossil gas may even be worse. It is clear that fossil gas has no role in securing a 100% clean energy future. As with oil and coal, gas capacity must be phased out rapidly as part of a managed decline of fossil fuels and should be presented in the report as such.

Energy Sources Should Truly Be Zero-Carbon

The Core Scenario allows for energy sources that have not been proven to be carbon neutral, one of them being bioenergy. Bioenergy, or energy derived from biomass, is currently categorized as a “renewable” energy source, but in reality biomass energy has more in common with fossil fuels. Biomass power plants are California’s dirtiest electricity source—releasing more carbon at the smokestack than coal.⁹ Adding to these harms, cutting trees for biomass energy reduces the forest’s ability to sequester and store carbon.¹⁰ So biomass power is a double whammy for the climate: it emits more carbon at the smokestack and leaves less carbon stored in the forest. Therefore, bioenergy should not be included in any scenarios for reaching 100 percent clean energy within any timeframe.

The Draft Report does aptly include a “No Combustion” scenario that excludes all conventional combustion sources, including fossil and biomass based, and retires all in-state combustion resources by 2045. But as previously noted, this No Combustion scenario should proceed with 2030 as the deadline rather than 2045. The scenario also includes adding additional capacity in the form of hydrogen fuel cells, but the state should be cautious in placing future reliance on hydrogen. The Draft Report states that the hydrogen used would be “green” hydrogen¹¹ but given the production of green hydrogen is currently cost and energy intensive, it must be assured that hydrogen for fuel cells is not instead sourced from woody biomass or petroleum fuels, namely fossil gas. The Draft Report currently sanctions fossil gas for “reliability” concerns and today, 95 percent of hydrogen produced in the U.S. is made from fossil gas,¹² so one can see an unfortunate circumstance of relying on fossil gas to meet fuel cell needs. Hydrogen made from fossil gas or woody biomass is not zero-carbon and therefore should not be a part of any SB 100 scenarios.

Instead of shifting capacity to hydrogen fuel cells in a No Combustion scenario, more focus should instead be placed on expanding solar and battery storage capacity—with emphasis on distributed resources. According to one study, the combination of small- and utility-scale solar

⁸ Ren, X. et al., Methane emissions from the Marcellus Shale in southwestern Pennsylvania and northern West Virginia based on airborne measurements. 122 *J. Geophys. Res. Atmos.* 4639 (2017); Alvarez, Raymond et al., Greater focus needed on methane leakage from natural gas infrastructure, 109 *PNAS* 6435 (2012).

⁹ Searchinger, Timothy D. et al., Europe’s renewable energy directive poised to harm global forests, 9 *Nature Communications* 3741 (2018).

¹⁰ Moomaw, William R. et al., Intact forests in the United States: proforestation mitigates climate change and serves the greatest good, *Frontiers in Forests and Global Change*, doi: 10.3389/ffgc.2019.00027 (2019).

¹¹ Green hydrogen made by splitting water by electrolysis powered by solar and wind energy would be a zero-carbon resource.

¹²Office of Energy Efficiency & Renewable Energy, Hydrogen Production: Natural Gas Reforming, U.S. Department of Energy <https://www.energy.gov/eere/fuelcells/hydrogen-production-natural-gas-reforming> (Accessed December 11, 2020).

energy potential within the built environment could meet California’s energy consumptive demand three to five times over.¹³ Distributed solar is especially advantageous because it is comparable in efficiency, faster to bring online and less environmentally destructive than remote utility-scale solar plants. Particularly when paired with storage, distributed solar can provide resilience benefits to communities during heat waves and fires, helping them maintain power during climate-driven crises.¹⁴ Furthermore, because distributed solar energy can be locally produced, locally owned, and locally consumed, there is often less local opposition to its implementation, in large part due to the local economic benefits.¹⁵ While the Draft Report does include “customer solar” in its scenarios, its role could be expanded, as implied by the report itself in saying that the “role of demand-side resources should be further evaluated.”¹⁶

The Draft Report’s “Zero-Carbon Firm Resources” scenario leaves the door open for continued reliance on gas and other combustion-based fuels. This is largely based on the expectation of future advancements in carbon capture and storage technologies (CCS). However, placing stock in such speculative and risky technologies only creates perverse incentives to continue fossil fuel production and use, impeding the necessary phase-out of fossil fuels and the clean energy transition. It is important to no longer bolster the fossil fuel industry which is responsible for the bulk of the climate crisis. Implementation of SB 100 should only involve truly zero-carbon energy sources.

Any Climate Action Must Include an Equitable and Just Transition to Clean Energy

The Draft Report rightly highlights the importance of advancing energy equity while supporting a clean energy economy, all while reaping the climate and public health benefits of a just transition. The report states that SB 100 should be implemented in the following ways for “disadvantaged communities” to overcome barriers to clean energy:¹⁷

- Keeping electricity affordable, with an emphasis on vulnerable populations and households that pay a disproportionately high share of their household income on energy.
- Reducing air pollution from local power plants, particularly in communities that experience a disproportionate amount of air pollution.
- Strengthening their ability to function during power outages and enjoy reliable energy in a changing climate.

¹³ Hernandez, R. et al., Efficient use of land to meet sustainable energy needs, Nature Climate Change, DOI: 10.1038/NCLIMATE2556 (2015).

¹⁴ National Renewable Energy Laboratory, Valuing the Resilience Provided by Solar and Battery Energy Storage Systems, <https://www.energy.gov/sites/prod/files/2018/03/f49/Valuing-Resilience.pdf> (2018); *see also* Tyson, M. and R. Nanavatty, Adapting to Fire: How Cities Can Enhance Resilience with Distributed Energy, Rocky Mountain Institute (2020), <https://rmi.org/adapting-to-fire-how-cities-can-enhance-resilience-with-distributed-energy/>.

¹⁵ Bowers, S. and Powers, B., Distributed renewable generation: Why it should be the centerpiece of U.S. energy policy, Post Carbon Institute (2012).

¹⁶ Draft Report at 108.

¹⁷ Draft Report at 37.

- Funding of training for high-quality jobs and careers in the growing clean-energy industry.

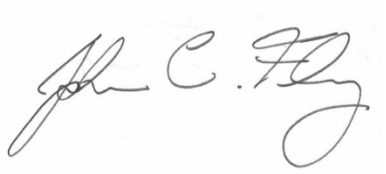
For two of these, keeping electricity affordable and strengthening the ability for under-resourced communities to enjoy reliable energy, California needs to undergo a re-envisioning of its energy distribution system. California needs to create a system where energy is not controlled by public and investor-owned utilities holding monopolies on power, but rather by communities that are free to advance distributed and community solar programs and hold utility regulators accountable: a decentralized system where energy access is treated as a right rather than a luxury. In line with this, California needs a system where energy is guaranteed especially in times of emergency, such as during the current COVID-19 pandemic. During such times, moratoria should be placed on the disconnection of essential utility services and late fees for all residential customers. These moratoria should last for the duration of the declared emergencies plus an additional buffer period of at least 6 months in order to allow families a chance to get back on their feet before risking service disconnection. Of course, the need for moratoria themselves would be greatly reduced if communities were empowered in providing for their own energy needs. Such a reimagining of California's energy system should be central to achieving SB 100 goals.

For the other two implementation measures, reducing air pollution from local power plants and funding of training for high-quality jobs, these are best addressed by moving the deadline for 100 percent clean energy to 2030. To begin addressing the legacy pollution inherent in low-income and communities of color, one of the greatest sources of that pollution, fossil fuel production and refining, should be removed expeditiously. Waiting until 2045 to eliminate fossil fuel pollution is an injustice to those communities who continue to bear the brunt of environmental degradation and health harms. Relatedly, by bringing the deadline to 2030 and implementing the right policies, individuals who currently work in the polluting fossil fuel industry could move more quickly to other work, including to high-quality jobs in clean energy with less pollution and better health outcomes. Ultimately, a just transition must be a quick transition that prioritizes environmental and public health over the waning fossil fuel industry. The equitable and just transition to clean energy must be a focus rather than an add-on to SB 100 implementation.

Climate Science Demands a 2030 Deadline for No-Combustion Energy

It is established science that to stay below 1.5°C warming and avoid the worst of climate change harms, emissions must reach near zero by 2050 globally and much earlier for the U.S. and California. There is simply no room for entertaining scenarios of delayed climate action when the climate crisis demands decisive steps be taken now. Thus, rather than centering the “Core Scenario” which calls for 100 percent clean energy much too late and allows for the continued use of carbon-emitting fossil gas and bioenergy, a scenario of 100 percent clean energy by 2030 and truly zero-carbon energy sources should be set as the standard. Gov. Newsom recently remarked that even 2045 is too late to reach carbon neutrality given the severity of the climate crisis: likewise, waiting until 2045 for 100 percent clean energy would be abhorrently past due.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John C. Fleming". The signature is fluid and cursive, with the first name "John" being the most prominent.

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