

DOCKETED	
Docket Number:	23-SB-100
Project Title:	SB 100 Joint Agency Report
TN #:	254483
Document Title:	Julia Levin - BAC Comments on Land Use in SB 100 Report
Description:	N/A
Filer:	System
Organization:	Julia Levin
Submitter Role:	Public
Submission Date:	2/15/2024 1:07:47 PM
Docketed Date:	2/15/2024

*Comment Received From: Julia Levin
Submitted On: 2/15/2024
Docket Number: 23-SB-100*

BAC Comments on Land Use in SB 100 Report

Additional submitted attachment is included below.



February 15, 2024

Ms. Aleecia Gutierrez, Director
Energy Assessments Division
California Energy Commission
Sacramento, CA 95814

Re: Comments on Land Use in the SB 100 Report

Dear Ms. Gutierrez:

I am writing on behalf of the Bioenergy Association of California (BAC) to comment on the February 1 workshop presentations on land use for the SB 100 report. BAC strongly supports the CEC's focus on land use issues in the 2025 SB 100 report. Natural and Working Lands (NWL) are critical to achieving California's climate and clean energy goals, but the CEC and CPUC presentations at the workshop largely ignored the single largest threat to NWL, which is catastrophic wildfire, and opportunities to reduce that threat through SB 100. BAC urges the CEC to make wildfire reduction a central focus of the NWL section of the SB 100 report as it is essential to reduce carbon emissions from NWL, maintain California's largest carbon sink, protect public health and safety, and reduce ratepayer impacts from catastrophic fires.

BAC represents over 100 public and private sector members that are converting organic waste to energy to meet California's climate and clean energy goals. BAC's public sector members include cities and counties, Tribes, air quality and environmental agencies, solid waste and wastewater agencies, community and environmental groups, research institutions, a publicly owned utility, and others. BAC's private sector members include energy and technology firms, project developers, investors, an investor owned utility, agricultural and food processing companies, waste haulers, and others.

BAC submits the following general comments on NWL in the SB 100 report and then provides answers to the specific questions raised in the CEC's February 1 presentation.

1. NWL are essential to meet California's climate goals.

California's 2022 *Climate Change Scoping Plan* made clear that NWL are essential to meeting California's climate goals. Dr. Adam Moreno from CARB underscored this in

his presentation on February 1. California cannot achieve carbon neutrality, as required by state law, without maintaining and augmenting carbon sequestration on NWL. This is because NWL represent the largest carbon sinks in California and also provide significant opportunities for clean energy development and additional carbon sequestration. On the other hand, wildfires and land use changes are significant and growing sources of carbon emissions. In recent years, catastrophic wildfires are among the largest sources of carbon emissions statewide (although not currently included in the GHG inventory), in some years matching or exceeding the carbon emissions from the transportation or electricity sectors.

California's forest agencies have been sounding the alarm for years about the potential for wildfire emissions to dwarf the carbon reductions we've achieved across other sectors of the economy. In 2020, wildfire emissions were so enormous that they exceeded all of the carbon reductions achieved in California in the previous two decades, including reductions from the RPS, LCFS and other programs.¹

Limiting the NWL focus of the SB 100 report solely to modeling of land use changes for solar and wind development does not adequately address either the opportunities or the threats that NWL pose for meeting California's climate and clean energy goals.

2. Forests Are California's Biggest and Most Threatened Carbon Sink

The California Environmental Protection Agency (CalEPA) and Natural Resources Agency (CNRA) have stated that "reducing carbon losses from forests, particularly the extensive carbon losses that occur during and after extreme wildfires, is essential to meeting the state's long-term climate goals."² That is because California's forests are by far the largest carbon sink in the state, sequestering more than 2 billion tons of carbon. California's National Forests alone, which represent about half of California's forested lands, sequester more than 1.5 billion metric tons of carbon.³ They are also the most threatened carbon sink due to the increasing frequency and severity of wildfires.

California wildfires have been increasing for decades, but in the past several years, the number and size of catastrophic wildfires has increased exponentially. In 2020 alone, California lost 4 million acres to wildfire. That is more than 10 percent of California's total forest lands lost in a single year. Those wildfires released a combined total of 112 million metric tons of carbon emissions.⁴ And the trend is only getting worse as the graph below from the Office of Environmental Health Hazard Assessment (OEHHA) shows.

¹ Jerrett, et al, *Up in smoke: California's greenhouse gas reductions could be wiped out by 2020 wildfires*," published in *Environmental Pollution* 310 (2022) 119888.

² *California Forest Carbon Plan*, adopted by CalEPA, CNRA, and CalFire in 2017, at page 2.

³ <https://www.fs.usda.gov/detail/r5/landmanagement/?cid=fseprd565502>.

⁴ <https://ww2.arb.ca.gov/resources/documents/frequently-asked-questions-wildfire-emissions>.

Statewide annual acres burned, 1950-2021

This graph shows the number of acres (in millions) burned by wildfires in California each year.

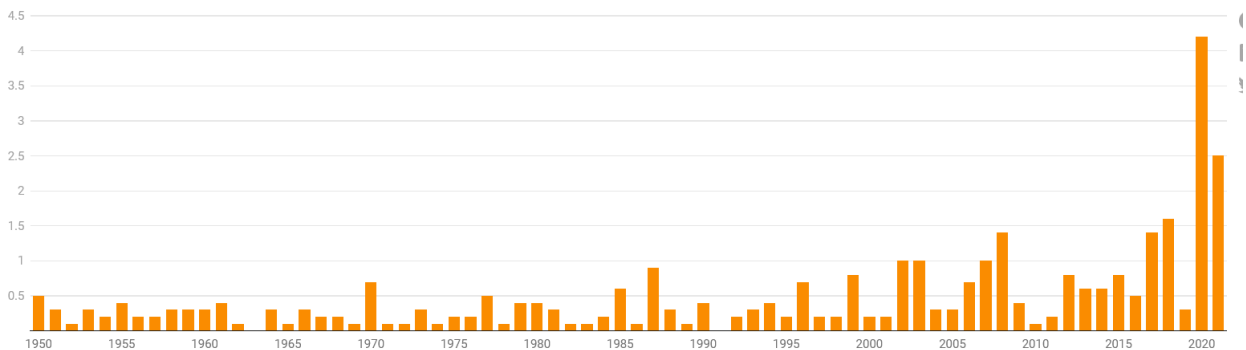


Chart: OEHHA Climate Change Indicators 2022 • Source: CAL FIRE • Get the data • Embed • Download image • Created with Datawrapper

Wildfires don't just release carbon. They are now one of the biggest and most dangerous sources of air pollution. As OEHHA states, "Wildfires threaten public health and safety, property, infrastructure, and ecosystems. Wildfire smoke contains hazardous constituents that can severely impact air quality and human health, both locally and downwind."⁵ According to a recent study by Stanford, wildfires now cause half of California's particulate matter pollution and the 2020 fire season alone will cause thousands of premature deaths from the wildfire smoke.⁶

3. Electricity Is the Largest Cause of Catastrophic Wildfires in California.

According to CalFire, the electricity sector is the largest cause of large wildfires in California, causing half of the 20 largest fires of all time.⁷ Electricity infrastructure has also caused some of the deadliest fires in California's history, including the 2018 Camp Fire that killed 85 people, the 2017 Tubbs Fire that killed 22 people and the 2017 Mendocino Fire that killed 9 people.⁸ All of these catastrophic fires were caused by power lines, substations, service vehicles, or other electricity sector operations and infrastructure.

Given the direct causal link between electricity infrastructure and large wildfires, the NWL section of the SB 100 report should address the connection between electricity infrastructure and wildfires and recommend energy sector strategies for mitigating

⁵ <https://oehha.ca.gov/climate-change/epic-2022/impacts-vegetation-and-wildlife/wildfires>.

⁶ Stanford Woods Institute for the Environment, *Health Impacts of Wildfire Smoke*, available at: <https://woods.stanford.edu/stanford-wildfire-research/health-impacts-wildfire>.

⁷ CalFire, "Top 20 Most Destructive California Wildfires," updated October 24, 2022.

⁸ CalFire, "Top 20 Deadliest California Wildfires," updated October 24, 2022.

wildfire, including the need for additional forest thinning around power infrastructure and ways to increase biomass conversion to energy to reduce wildfire and pile and burn of forest waste.

4. Converting Forest and Agricultural Waste to Energy Reduces Wildfire Emissions and Impacts, Including Ratepayer Impacts.

As California's wildfire crisis has grown, the State has issued numerous plans to reduce wildfire and restore healthy, fire resilient forests. All of those plans include recommendations to increase the conversion of forest biomass to energy. The *California Forest Carbon Plan*, adopted by CalEPA and the California Natural Resources Agency, recommends increasing forest biomass to energy to reduce emissions from wildfires and from pile and burn, finding that bioenergy cuts particulate matter, methane and carbon monoxide emissions 98 percent compared to open burning.⁹ According to CalEPA and CNRA, biomass energy is preferable to pile and burn from an air quality and a climate perspective as bioenergy reduces particulate matter, black carbon, methane and smog forming pollutants significantly, even when including the emissions from transport of the forest waste to a biomass facility.¹⁰ The agencies recommend increasing biomass energy to reduce climate and air pollution from burning forest waste, saying that doing so can help meet the RPS and LCFS goals. The *California Forest Carbon Plan* recommends specifically that California:

- Fully implement the BioMAT program, focused on new distributed generation bioenergy facilities,
- Continue public investment in new bioenergy facilities, and
- Continue R&D in biomass conversion to energy and fuels.

More recently, the Governor's Wildfire and Forest Health Task Force and the California Board of Forestry have developed recommendations for forest biomass utilization.¹¹ Both of those plans call for increased bioenergy from forest waste to reduce wildfires and pile and burn. These plans call for several measures to increase biomass conversion to power and fuels, including electricity and renewable hydrogen from forest biomass, to reduce climate and air pollution as well as threats to public safety and infrastructure.

Converting forest biomass to energy also protects ratepayers by reducing the risks of catastrophic wildfire, which has enormous ratepayer impacts. Wildfires cost ratepayers millions of dollars annually due to the direct costs of wildfires sparked by utility operations and the increasing use of Public Safety Power Shutoffs to reduce the risks of

⁹ *California Forest Carbon Plan*, adopted by CalEPA, CNRA, and CalFire in 2017, at page 135.

¹⁰ Id. at page 130.

¹¹ California Board of Forestry, Joint Institute for Wood Products Innovation, *Wood Utilization Plan*, adopted November 2020.

power infrastructure causing fires. Forest thinning and biomass utilization for energy production reduce wildfire impacts and therefore protect ratepayers from the enormous costs that electricity sparked wildfires can trigger.

The CEC should incorporate its sister agencies' recommendations to mitigate wildfires, restore forest health, and utilize waste biomass into the SB 100 report.

5. The CEC Should Recommend Ways to Accelerate Biomass Conversion to Energy to Reduce Wildfire Risks, Carbon Losses and Ratepayer Costs.

In addition to the recommendations adopted by the Governor's Task Force, CalEPA, CNRA, and the Board of Forestry, the CEC should develop more specific recommendations to increase bioenergy from forest and agricultural waste to reduce wildfires and open burning, and to help maintain or restore carbon in Natural and Working Lands. As Lawrence Livermore National Lab found, converting forest biomass to hydrogen or electricity are two of the biggest and most cost-effective opportunities to generate carbon negative emissions.¹²

The SB 100 report should propose specific measures to accelerate the conversion of both forest and agricultural waste to energy to reduce emissions and restore carbon sequestration on NWL. Instead, the CEC's presentation on slide 3 actually shows a reduction in biomass energy between now and 2045. This makes no sense given all the state plans that call for increased forest and agricultural biomass utilization, the need to reduce catastrophic wildfires, and the need for clean firm power. The CEC should, at a minimum, incorporate the biomass energy recommendations of the plans mentioned above and should recommend specific measures to achieve those recommendations.

6. Answers to Specific Questions Posed by CEC Presentation on February 1.

BAC's answer to the questions that the CEC posed at the February 1 workshop are below.

A. Land Use Related Challenges to SB 100 Implementation

There are several categories of land use change related to SB 100 implementation, including land needed for solar and wind development and lands lost – especially forest lands, as detailed above - to electricity sparked wildfires. The Air Board presentation highlighted the amount of land that would be required to meet SB 100 with solar and wind alone. According to the presentation by Dr. Adam Moreno, California would need 850 square miles of land to meet the requirements of SB 100 with solar and wind power

¹² Lawrence Livermore National Lab, "Getting to Neutral – Options for Negative Carbon Emissions in California," January 2020.

alone, plus another 120 square miles to provide solar power for electrolytic hydrogen production. This is an enormous amount of land and does not even include new transmission.

As part of the land use modeling for SB 100, the CEC should consider the relative land use needs for different SB 100 resources. In other words, what would the land use impacts be of equivalent amounts of bioenergy, geothermal, solar, wind, electrolytic and biogenic hydrogen production, etc. No land use analysis would be complete without an accurate comparison of the land area needed for different resources, including the land area needed for electrolytic hydrogen versus biogenic hydrogen. This analysis would be consistent with the ARB's 2022 Scoping Plan, which includes about a third of the hydrogen production in 2045 derived from biomass resources.¹³

As mentioned above, the CEC should also consider the impacts of the electricity sector on California's forested lands, including the acres lost to electricity caused wildfires, the loss of carbon from those fires, the costs to ratepayers of electricity caused wildfires, impacts on public health, and related issues.

B. Staff's Proposed Goals on Slides 10 and 19

The goals presented on slides 10 and 19 are very high level and so difficult to provide comment on whether they are adequate or not. For example, one of the goals listed on slide 19 is "Explore opportunities to reduce environmental and land use impacts." Without knowing which opportunities and which impacts this will include, it is impossible to know whether this goal is adequate or not. Another goal is "Identify land use implementation challenges to resource build deployment." If this goal is limited to assessing the land use needs for solar and wind, then it is definitely not adequate.

The goals of the CEC's land use analysis should incorporate recommendations from its sister agencies related to forest and agricultural biomass. The goals should also include at least the following:

- Opportunities to mitigate wildfires caused by the electricity sector, including forest and other vegetation removal
- Opportunities to use forest and agricultural biomass to generate electricity and renewable hydrogen.
- Comparison of land use needed for different resources, including a comparison between electrolytic and biogenic hydrogen.
- Opportunities to use the co-products of bioenergy production – both biochar and digestate – for soil restoration and carbon sequestration on Natural and Working Lands.

C. Resources Under Consideration

¹³ California Air Resources Board, 2022 Scoping Plan, AB 32 GHG Inventory Sectors Modeling Data Spreadsheet, <https://ww2.arb.ca.gov/sites/default/files/2022-11/2022-sp-PATHWAYS-data-E3.xlsx>

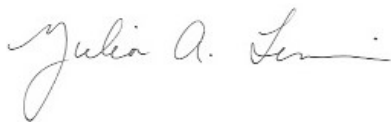
The resources listed on slides 12 and 16 do not mention the *California Forest Carbon Plan*, the recommendations of the Governor's Wildfire and Forest Health Task Force, the Board of Forestry's Wood Utilization Plan, nor the Natural and Working Lands strategy adopted as part of the *2022 Climate Change Scoping Plan*. In addition, resource considerations on NWL should include opportunities to reduce carbon emissions and to increase carbon sequestration, air quality and opportunities to reduce air and climate pollution from open burning of forest and agricultural waste, opportunities to generate combined heat and power or just thermal energy, and more.

D. Resource Mapping

Resource mapping should include data and analysis on the availability of organic waste resources that can be converted to electricity, hydrogen, and other clean fuels. According to the *California Short-Lived Climate Pollutant Reduction Strategy*¹⁴ and Lawrence Livermore National Lab's report on getting to carbon neutrality, California has enormous organic waste resources that can be converted to energy, long duration storage, and thermal power. These maps and inventories should be included in any resource mapping done for SB 100.

Thank you for your consideration of these comments.

Sincerely,

A handwritten signature in cursive script that reads "Julia A. Levin".

Julia A. Levin
Executive Director

¹⁴ California Air Resources Board, *California Short-Lived Climate Pollutant Reduction Strategy*, adopted 2017.