

Reproduced with permission from Forest Unlimited

The Burning Question

What's really carbon neutral in California when considering forest extraction activities, wildfires, biomass burning, and the climate?



Drone photo, August, 2024: commercial logging described as a “Restoration Project,” (Yosemite NP and Stanislaus NF). The chip piles in the background will be transported to a biomass energy facility. Photo credit: Juan Mejia.

These days, trees and other natural wood are increasingly being extracted from forests to be used as sources of energy and fuels – in attempts to replace fossil fuel-based products (coal, gas, aviation fuel). The new wood-based products are defined as “clean,” “carbon neutral,” and “renewable,” although a closer look reveals that bioenergy products are [unclean, as carbon-emitting as coal or natural gas – or more](#) – and largely non-renewable¹. Using wood from forests as source material for bioenergy results in massive emissions from smokestacks and transportation, leading to [health and safety risks to communities](#) near and far, and decimating forests². The emissions, including greenhouse gases (GHGs), are not being counted and worsen the climate crisis.

Emissions from Burning Biomass

¹ https://www.biologicaldiversity.org/campaigns/debunking_the_biomass_myth/pdfs/Forest-Bioenergy-Briefing-Book-March-2021.pdf

² <https://insideclimatenews.org/news/25102022/weed-california-mill-fire-mount-shasta/>

Biomass energy uses the heat from wood incineration to power steam turbines, and ironically releases more carbon emissions per megawatt of energy generated than burning the coal it is replacing. Biofuels are created when high heat drives the conversion of wood into “fractions” including oil. The processes, including [pyrolysis and gasification](#), are far from clean³. Another product emerging from processing wood is [biochar, which is also not free of emissions and is the subject of debate](#)⁴. In order to deal with the emissions, industries are proposing to pump the carbon dioxide underground, a process called “carbon capture and storage” (CCS), which is potentially dangerous, has resulted in serious accidents and injuries, and comes with no guarantee that the carbon dioxide will remain underground. The efficacy of CCS has been [questioned by the Intergovernmental Panel on Climate Change](#) (IPCC) and others⁵.

Below photo, July 2024. Logging the largest trees before the 2021 Antelope Fire, Shasta National Forest. After the largest trees were removed, the area burned intensely. Photo credit: Maya Khosla



Burning from Wildfires vs. Burning Biomass

California is a leader in the race to replace fossil fuels with bioenergy (to “achieve carbon

³ <https://www.sciencedirect.com/science/article/abs/pii/S0269749117349072?via%3Dihub>

⁴ <https://www.biofuelwatch.org.uk/wp-content/uploads/biochar-briefing-2020.pdf>

⁵ https://www.ipcc.ch/site/assets/uploads/2018/03/srccs_wholereport-1.pdf

neutrality by 2045”), but the state is ignoring the carbon emissions arising from logging. Dr. John Talberth recently wrote about the “[Gaping Hole in California’s Climate Action Framework: Big Timber](#)”.⁶ Other recent studies, [including one presented in Congress](#) by Dr. Beverly Law, show that logging emissions are 5-10 times more than wildfire emissions⁷. One study focusing on logging across the United States showed that [85% of carbon emissions from US forests were caused by timber harvesting](#)⁸. Yet California continues to offer millions of dollars in subsidies to industrial sectors expanding in every possible direction bioenergy offers, even hydrogen fuel derived from wood, another false solution.

A fundamental flaw has undermined efforts for significant carbon reductions and sped up the surge of new bioenergy developments. Forests grow back, so the carbon lost from tree removals and [from soils](#)⁹ may be [recaptured over the course of time](#)¹⁰. This reality gives industries a chance to ignore the immediate emissions arising from logging, to assume that carbon recapture years later is adequate. The fact that forests take decades or even centuries to grow back ([if they are allowed to grow and not cut down](#)), is ignored in the calculations¹¹. Removing trees releases carbon, and removes their ability to store and sequester (draw down) carbon in the future. Mature and old growth trees sequester far more carbon than young saplings that may be planted (generally after herbicide applications), to “replace” the older trees. In essence, the false notion of carbon neutrality achieved by treating trees and other natural forest wood as “forest waste” is a major loophole that benefits polluting industries.

Dr. Searchinger and colleagues first identified this major loophole over a decade ago. Their [2009 paper](#)¹² pointed out that the [Kyoto Protocol](#)¹³, an international agreement calling for industrialized nations to limit and reduce greenhouse gas emissions (GHGs)ⁱ, created a “far-reaching but fixable flaw,” an opportunity to ignore carbon emissions – whether they come from fast-growing crops or from “the clearing of long-established forests.” Searchinger and others recently [expressed concerns about natural forests worldwide being converted to wood plantations for bioenergy products](#)¹⁴.

The Burning Question and the False Solution

California is facing a wildfire crisis, which has led to tragic losses of lives and homes. The crisis has also allowed for forest extraction projects far from homes, with few limits. Proven home

⁶ <https://www.sustainable-economy.org/a-gaping-hole-in-californias-climate-action-framework-big-timber>

⁷ <https://www.congress.gov/117/meeting/house/112540/witnesses/HHRG-117-II10-Wstate-LawB-20210429.pdf>

⁸ <https://cbmjournals.biomedcentral.com/articles/10.1186/s13021-016-0066-5>

⁹ https://ww2.arb.ca.gov/sites/default/files/classic/cc/inventory/pubs/sb901_biodiv_jmp_comments.pdf

¹⁰ <https://iopscience.iop.org/article/10.1088/1748-9326/aaac88>

¹¹ https://www.biologicaldiversity.org/campaigns/debunking_the_biomass_myth/pdfs/Forest-Bioenergy-Briefing-Book-March-2021.pdf

¹² <https://www.science.org/doi/10.1126/science.1178797>

¹³ https://unfccc.int/kyoto_protocol

¹⁴ <https://www.wri.org/research/global-land-squeeze-managing-growing-competition-land>

hardening and defensible space measures, including vegetation removal within 100 feet of homes, [saved 99% of the homes during the 2024 Bridge Fire in Southern California](#)¹⁵. But the wildfire crisis has created multiple opportunities to clear forests in large-scale “management” projects (described as “vegetation management,” “fuels reduction,” “thinning,” and even as “community resilience” projects) to supposedly reduce the risk of wildfire. Meanwhile, mapping and field data show that [fast, wind-driven wildfires are spreading quickly through these heavily managed forests](#), many of them tens of thousands of acres in size and located far from homes and communitiesⁱⁱ.¹⁶ Forest clearing activities tend to focus on the largest trees to make projects commercially viable. They deplete forests, dry out soil, and create conditions for faster, more dangerous wildfires. “Trying to figure out how to best manage this land becomes secondary to feeding this monster,” says [Gary Hughes of Biofuelswatch](#)¹⁷.

Forest management actions have been strongly defended by entities funded directly or indirectly by the timber industry. A recent meeting hosted by the California Air Resources Board featured a presentation calling for large scale forest removals to create “resistant forests,” showcasing a study that claims historic forests were dominated by widely spaced trees, and that current forests are “overcrowded” (essentially in need of even more logging). The authors based the idea on historic forest data. To discuss the “overcrowded forests,” that are supposedly in need of even more logging, [they used a small subset of the archival data, which shows low forest density](#)¹⁸, and left out the vast majority of [archival evidence showing that forests had variable and higher density](#)¹⁹.

¹⁵ <https://www.yahoo.com/news/opinion-california-community-helped-prevent-235430037.html>

¹⁶ <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.1492>

¹⁷ <https://www.biofuelwatch.org.uk/author/garyhughes-bfwgmail-com/>

¹⁸ <https://www.yahoo.com/news/uc-researchers-omit-key-evidence-203544768.html>

¹⁹ <https://esajournals.onlinelibrary.wiley.com/doi/pdfdirect/10.1002/ecs2.2325>



Wood chips and air pollution near a pellet processing facility in Calpella, Mendocino.
Photo credit: Juan Mejia.

Extraction Activities to Support More Burning

As part of the [unsupported push for more “carbon neutral” bioenergy](#), trees and natural forest wood are being converted into pellets that are shipped hundreds of miles overseas, where they are burned in energy generation facilities that previously relied on coal for power²⁰. A new non-profit, the Golden State Natural Resources (GSRN), proposes to create one million tons of wood pellets a year for export through the Port of Stockton. The proposed GSRN pellet project is being touted as a “forest resiliency initiative,” although the CEO of Rural County Representatives of California (RCRC), Patrick Blacklock, admitted that “[commercial viability](#)” is important²¹. The pellet plant would be largely automated, and offer few jobs, in extremely hazardous conditions. GSRN’s idea is to use [California’s national forests to create about one million tons of wood pellets](#) for export through the Port of Stockton²².

The forest clearing projects in California and other western states have attracted the attention of international energy giants like Drax. The company has depleted forests in Southeastern US,

²⁰

<https://www.pfpi.net/wp-content/uploads/2023/06/JointScopingCommentsonGSRNWoodPelletProject63023.pdf>

²¹ <https://theintercept.com/2024/09/30/drax-wood-pellet-energy-air-pollution/>

²² <https://www.desmog.com/2024/03/04/wood-pellet-giant-drax-targets-california-forests/>

[where it has been fined for multiple violations²³, and it has been cutting down old growth forests in British Columbia for pellets²⁴](#). In Washington State, the energy giant was [fined for violations even before the proposed pellet operations](#) began²⁵. Drax is now turning to the forests of California, working in a new partnership with GSNR. [Gloria Alonso Cruz](#) describes the plan to transport wood pellets through the Port of Stockton as “an environmental justice tragedy unfolding.”²⁶

Meanwhile, human health, wildlife, homes, habitat, and the climate, continue to experience the devastating impacts of large-scale removals, most of them unchecked.

Maya Khosla

Biologist and Writer

²³ <https://www.newsfromthestates.com/article/drax-receives-another-fine-air-pollution-violations-gloster>

²⁴ <https://www.princegeorgecitizen.com/local-news/old-growth-forests-still-being-logged-for-pellets-conservation-advocates-say-8426898>

²⁵ <https://www.columbian.com/news/2024/sep/19/drax-fined-for-starting-on-longview-biomass-fuel-plant-without-proper-permits/>

²⁶ <https://news.yahoo.com/news/environmental-tragedy-unfolding-50-miles-130000963.html>

