
UNFINISHED BUSINESS

Bill No: SB 88
Author: Caballero (D), et al.
Amended: 9/2/25 in Assembly
Vote: 21

SENATE ENVIRONMENTAL QUALITY COMMITTEE: 8-0, 3/19/25
AYES: Blakespear, Valladares, Dahle, Gonzalez, Hurtado, Menjivar, Padilla,
Pérez

SENATE NATURAL RES. & WATER COMMITTEE: 6-0, 4/22/25
AYES: Limón, Seyarto, Allen, Grove, Laird, Stern
NO VOTE RECORDED: Hurtado

SENATE APPROPRIATIONS COMMITTEE: 5-0, 5/23/25
AYES: Caballero, Seyarto, Cabaldon, Grayson, Richardson
NO VOTE RECORDED: Dahle, Wahab

SENATE FLOOR: 37-0, 6/2/25
AYES: Allen, Alvarado-Gil, Archuleta, Arreguín, Ashby, Becker, Blakespear,
Cabaldon, Caballero, Cervantes, Choi, Cortese, Dahle, Durazo, Gonzalez,
Grayson, Grove, Jones, Laird, Limón, McGuire, McNerney, Menjivar, Niello,
Ochoa Bogh, Padilla, Pérez, Richardson, Rubio, Seyarto, Smallwood-Cuevas,
Stern, Strickland, Umberg, Valladares, Weber Pierson, Wiener
NO VOTE RECORDED: Hurtado, Reyes, Wahab

ASSEMBLY FLOOR: 59-0, 9/9/25 – Roll call not available.

SUBJECT: Air resources: carbon emissions: biomass

SOURCE: Placer County Air Pollution Control District
Sacramento Metropolitan Air Quality Management District

DIGEST: This bill requires the California Air Resources Board (CARB) to
publish an assessment of the life-cycle emissions from alternative uses of forest

and agricultural biomass residues and develop a strategy to support beneficial carbon removal products; directs the Department of Forestry and Fire Protection (CAL FIRE) to require state-funded forest health projects to include a forest biomass resource disposal component, as specified; and, directs the California Energy Commission (CEC) to include the value proposition of using agricultural biomass resources and forest biomass resources for low- and negative-carbon liquid and gaseous fuels in certain reports.

Assembly Amendments of 9/2/25 reduce CARB's responsibilities from adopting certain standards and including certain elements in the next Scoping Plan update to instead publish specified information on its website.

ANALYSIS:

Existing law:

- 1) Under the California Global Warming Solutions Act of 2006 (Health and Safety Code (HSC) §38500 et seq.):
 - a) Establishes the California Air Resources Board (CARB) as the state agency responsible for monitoring and regulating sources emitting greenhouse gases (GHGs).
 - b) Requires CARB to approve a statewide GHG emissions limit equivalent to the statewide GHG emissions level in 1990 to be achieved by 2020 (AB 32, 2006) and to ensure that statewide GHG emissions are reduced to at least 40% below the 1990 level by 2030 (SB 32, 2016).
- 2) States it is the policy of the state that the protection and management of natural and working lands (NWL) is an important strategy in meeting the state's GHG emissions reduction goals, and the protection and management of those lands can result in the removal of carbon from the atmosphere and the sequestration of carbon in, above, and below the ground. (Public Resources Code (PRC) §9001 et seq.)
- 3) Under AB 1757 (C. Garcia, Chapter 341, Statutes of 2022) (HSC §38561.5):
 - a) Directs California Natural Resources Agency (CNRA) to, in collaboration with CARB and others, to determine an ambitious range of targets for natural carbon sequestration and for nature-based climate solutions that reduce GHG emissions for 2030, 2038, and 2045 ("Targets"), which will be integrated into the AB/SB 32 Scoping Plan Updates.

- 4) Directs CARB to, by January 1, 2025, develop standard methods for state agencies to consistently track GHG emissions and reductions, carbon sequestration, and, where feasible and in consultation with CNRA and CDFA, additional benefits from NWLs over time.
- 5) Under SB 901 (Dodd, Chapter 626, Statutes of 2018), requires CARB in consultation with CalFire to, by December 31, 2020, develop:
 - a) A standardized system for quantifying the direct carbon emissions and decay from fuel reduction activities for purposes of meeting the accounting requirements for Greenhouse Gas Reduction Fund (GGRF) expenditures;
 - b) A historic baseline of greenhouse gas emissions from California's natural fire regime reflecting conditions before modern fire suppression; and
 - c) A report that assesses GHG emissions associated with wildfire and forest management activities. (HSC § 38535)

This bill:

- 1) Requires CARB to:
 - a) On or before January 1, 2028, publish on its website an assessment of the life-cycle emissions from alternative uses of forest and agricultural biomass residues that take into account wildfire management actions.
 - b) On or before January 1, 2029, publish on its website a comprehensive strategy to support beneficial carbon removal products, including, but not limited to, biochar, that are generated from agricultural or forest biomass resources.
- 2) Requires CAL FIRE to require, to the extent feasible, all state-funded forest health projects to include an appropriate forest biomass resource disposal component that includes a scientifically based, verifiable method to determine the amount of biomass to be physically removed and the amount to be burned by prescribed burn.
- 3) Requires the CEC to include the value proposition of using agricultural biomass resources and forest biomass resources for low- and negative-carbon liquid and gaseous fuels, including hydrogen, from noncombustion conversion technology methods and other emerging and innovative approaches in relevant reports and other agency-sponsored documentation.

Background

What is biomass? Biomass consists of organic residues from plants and animals obtained from harvesting and processing agricultural and forestry crops. Waste biomass is widely available across California, with an estimated 56 million bone dry tons per year available from trash, agricultural waste, sewage and manure, logging, and fire prevention activities in 2045. Today, this biomass returns its carbon to the atmosphere when it decays or burns in prescribed fires or wildfires, or it is burned to produce energy at a power plant.

Where can biomass go? There are a number of options available to make use of biomass resources, rather than treating them strictly as a waste stream to be disposed of.

- a) *Combustion.* Today, most biomass used for energy in the state is combusted. “Biomass power plant” is the general term for waste-to-energy power plants that burn organic material, including wood waste. According to the CEC, in 2020, biomass electric facilities produced 5,628 gigawatt-hours, or roughly 3% of the state’s in-state electricity generation portfolio. The CEC notes there are just under 90 operating biomass power plants in California, with an installed capacity of about 1,259 MW, a capacity that has largely remained unchanged since 2001, per the CEC *Energy Almanac* data.
- b) *Non-combustion thermochemical processes.* There are two main approaches to converting woody biomass into usable fuels: gasification and pyrolysis. Gasification is the conversion of biomass feedstocks to gaseous fuel, while pyrolysis is the thermal decomposition of biomass in the absence of oxygen (that prevents combustion) to produce liquid fuels. These gas and liquid fuels can be used in conventional equipment (for example, boilers, engines, and turbines) or advanced equipment (such as fuel cells) for the generation of heat and electricity.
- c) *Biochar.* The leftover, high-carbon material that remains after thermochemical conversion in an oxygen-limited environment is called biochar. When applied to soil, biochar could potentially aid in retaining moisture and nutrients, while improving soil quality and potentially sequestering carbon from the atmosphere. A recent special report of the Intergovernmental Panel on Climate Change¹ has included biochar as one of the top six negative emission technologies in terms of achievable scale.

¹ Rogelj J, Shindell D, Jiang K, Fifita S and Al E, Mitigation pathways compatible with 1.5°C of sustainable development, in *Global Warming of 1.5°C. an IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change*, Vol. 163. (2018).

However, care must be taken in biochar's production and application to ensure the stored carbon is not quickly released back into the atmosphere.

These are all relatively nascent pathways, and as a result, best practices and emissions profiles are yet to be established for the different technologies. If these end uses of "waste" biomass can be made to be sufficiently appealing (either through incentives or other policies), the logic follows that they can help drive the market towards the dramatic increase in management activities necessary to achieve the AB 1757 goals.

Comments

Purpose of Bill. According to the author, "SB 88 takes critical steps to identify and reduce the harmful air pollution caused by wildfires and open-air burning of forest and agricultural waste in California. By requiring California Air Resources Board, CalFire, and the California Energy Commission to track and quantify harmful pollution emissions, establish emissions baselines, and promote the beneficial use of clean biomass conversion, the bill will mitigate wildfire risks, reduce air pollution and greenhouse gas emissions, and encourage sustainable alternatives to open air burning. This measure will help California meet its climate goals, clean the air pollution, reduce healthcare costs related to dirty air, and accelerate the transition to carbon-negative solutions, ensuring a healthier and more sustainable future."

Balancing California's fire deficit, but at what cost? The concept of "fire deficit" refers to an accumulation of unburned fuel in forests, which increases the likelihood of catastrophic fires. Reducing California's fire deficit is critical: more catastrophic wildfires mean more loss of life, property, and cherished natural resources. The GHG and criteria air pollutant emissions from wildfires have a disproportionately negative effect on marginalized communities, where people have fewer resources for avoiding smoke and less access to adequate health care.

Ultimately, there are a number of overlapping (and potentially conflicting) big-picture priorities the state must juggle here. Reducing our fire deficit is essential to reduce catastrophic wildfire risk. Minimizing smoke exposure is essential to reduce inequitable air pollution exposure. Maximizing beneficial uses of forest and agricultural biomass is essential to avoid an over-accumulation of waste that can act as fuel for fires and a source of methane through decomposition. Charting a path to solve all of these problems at once requires a mix of innovation, deliberation, and good data.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: No

According to the Assembly Appropriations Committee:

- Ongoing costs of an unknown amount, likely under \$1 million annually, for CARB to implement this bill (Cost of Implementation Account).
- CEC estimates ongoing annual costs of up to \$201,000 (Energy Resources Program Account) for one position to conduct biomass analysis and modeling. CEC describes the scope of the analysis required this the bill as unclear and notes potential redundancies with work already underway to implement SB 1075 (Skinner), Chapter 363, Statutes of 2022.
- Administrative costs of an unknown amount, likely minor and absorbable, for CAL FIRE to implement this bill. However, requiring all state-funded forest health projects to include a forest biomass resource disposal component, even to the extent feasible, could increase project costs, which could reduce the overall number of projects funded with existing grant funding.

SUPPORT: (Verified 9/9/2025)

Placer County Air Pollution Control District (co-source)
Sacramento Metropolitan Air Quality Management District (co-source)
Agricultural Council of California
Agricultural Energy Consumers Association
Almond Alliance of California
American Pistachio Growers
Association of California Water Agencies
Bioenergy Association of California
Breathe California Sacramento Region
California Air Pollution Control Officers Association
California Association of Winegrape Growers
California Biomass Energy Alliance
California Citrus Mutual
California Farm Bureau Federation
California Fresh Fruit Association
County of Fresno
El Dorado County Water Agency
Nisei Farmers League
Northern Sierra Air Quality Management District
Northern Sierra Aqmd

Northern Sonoma County Air Pollution Control District
Pioneer Community Energy
Placer County Water Agency
Swana California Chapters Legislative Task Force
The Cleaner Air Partnership
Western Growers Association

OPPOSITION: (Verified 9/9/2025)

Center for Biological Diversity

Prepared by: Heather Walters / E.Q. / (916) 651-4108
9/9/25 14:45:36

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