

# BIOMASS ENERGY IS POLLUTING: BIOMASS POWER PLANT POLLUTION HARMS VULNERABLE COMMUNITIES, WORSENING ENVIRONMENTAL INJUSTICE

*Biomass power plants are a significant source of air pollutants, harming the vulnerable communities where biomass facilities are located and worsening environmental injustice.*

## **Biomass power plants emit large amounts of air pollutants that harm public health.**

Biomass power plants emit toxic air pollutants, including particulate matter (PM), nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), lead, mercury, and other hazardous air pollutants that harm public health.<sup>1</sup> Biomass power plant pollution can exceed that of coal-fired power plants even when the best available control technology is used.<sup>2</sup>

In California, biomass power plants are among the worst emitters of particulate matter and NOx.<sup>3</sup> Fine particulate matter (PM 2.5)—which can get deep into the lungs and even enter the bloodstream—is linked to serious health problems including heart disease, premature death, stroke, and aggravated asthma.<sup>4</sup> In the San Joaquin Valley air district, two biomass plants—Mount Poso Cogeneration Company and Rio Bravo Fresno—were the 11<sup>th</sup> and 13<sup>th</sup> biggest stationary source of fine particulate matter (PM 2.5) in 2017 out of 153 sources. In the Sacramento Valley air district, 7 out of the 10 worst PM 2.5 polluters were biomass plants.<sup>5</sup>

Biomass power plants also emit hazardous air pollutants, including hydrochloric acid, dioxins, benzene, formaldehyde, arsenic, chromium, cadmium, lead, and mercury.<sup>6</sup> In 2017 Humboldt Redwood Company's Scotia biomass cogeneration facility reported emitting a whopping 11,574 pounds of the carcinogen benzene and 12,364 pounds of the toxin formaldehyde.<sup>7</sup>

## **California's biomass plants are often located in vulnerable communities already overburdened with pollution, worsening environmental injustice.**

Many of California's biomass power plants are concentrated in vulnerable communities already suffering from high pollution burdens, worsening environmental injustice. The San Joaquin Valley is one of the nation's most polluted air basins. Currently, Bakersfield, Fresno-Madera-Hanford, and Visalia are the top three most polluted cities for year-round particulate pollution levels *in the country*.<sup>8</sup> In the San Joaquin Valley, 4 of 5 active biomass plants and 4 of 5 idle biomass plants are located in disadvantaged communities.<sup>9</sup> Most of these communities are within the ninetieth percentile for air pollution burden, and some are in the top percentile. For example, the 25 MW Rio Bravo biomass plant in Fresno is located less than a half-mile from the Malaga Elementary School, Malaga Community Park, and surrounding homes, in a majority Hispanic neighborhood with a pollution burden score of 100.<sup>10</sup>

## **California's biomass plants have repeated air pollution violations.**

California's biomass power plants are guilty of repeated air quality violations.<sup>11</sup> In 2016 the now idle Blue Lake Power plant, located near Blue Lake Rancheria Indian Tribal lands, was cited and fined for multiple air pollution violations.<sup>12</sup> Tribal members, especially children and the elderly, reported severe health harms from the air pollution from the plant.<sup>13</sup> Merced Power and Ampersand Chowchilla Biomass in the San Joaquin Valley have been levied large fines for the excess emission of nitrogen oxides and fine particulate matter.<sup>14</sup>

## **Biomass power plants produce continuous air pollution.**

The air pollution from biomass power plants can be continuous, heavily impacting nearby communities and degrading the entire air basin around the clock and throughout the year with the incineration of woody biomass from throughout the region. In comparison, leaving woody materials in the forest to decompose naturally cycles carbon and nutrients and helps increase forest growth, aiding in future carbon sequestration. Even when cut materials are pile-burned in the forest, the burning occurs for a limited period of time and dispersed through the forest, in contrast to biomass plants which emit pollution continuously in or near particular communities.

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Last updated: March 2021.



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<sup>1</sup> Partnership for Policy Integrity, Air pollution from biomass energy (updated April 2011), <https://www.pfpi.net/wp-content/uploads/2011/04/PFPI-air-pollution-and-biomass-April-2011.pdf>

<sup>2</sup> Partnership for Policy Integrity, Air pollution from biomass energy (updated April 2011), <https://www.pfpi.net/wp-content/uploads/2011/04/PFPI-air-pollution-and-biomass-April-2011.pdf>

<sup>3</sup> For example, Roseburg Forest Products ranked as the 21<sup>st</sup> biggest stationary source of fine particulate matter out of 591 sources state-wide in 2017, according to facility-level emissions data from the California Air Resources Board Pollution Mapping Tool, [https://ww3.arb.ca.gov/ei/tools/pollution\\_map/pollution\\_map.htm](https://ww3.arb.ca.gov/ei/tools/pollution_map/pollution_map.htm)

<sup>4</sup> U.S. Environmental Protection Agency, Health and Environmental Effects of Particulate Matter, <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>

<sup>5</sup> Based on facility-level emissions data in each air district from the California Air Resources Board Pollution Mapping Tool, [https://ww3.arb.ca.gov/ei/tools/pollution\\_map/pollution\\_map.htm](https://ww3.arb.ca.gov/ei/tools/pollution_map/pollution_map.htm)

<sup>6</sup> Partnership for Policy Integrity, Air pollution from biomass energy (updated April 2011), <https://www.pfpi.net/wp-content/uploads/2011/04/PFPI-air-pollution-and-biomass-April-2011.pdf>

<sup>7</sup> Based on facility-level emissions data from the California Air Resources Board Pollution Mapping Tool, [https://ww3.arb.ca.gov/ei/tools/pollution\\_map/pollution\\_map.htm](https://ww3.arb.ca.gov/ei/tools/pollution_map/pollution_map.htm)

<sup>8</sup> American Lung Association, State of the Air 2020: Most Polluted Cities, <http://www.stateoftheair.org/city-rankings/most-polluted-cities.html>

<sup>9</sup> Four active biomass plants (Rio Bravo Fresno, DTE Stockton, Merced Power, and Ampersand Chowchilla) and four idle biomass plants (Community Recycling Madera Power, Covanta Mendota, Dinuba Energy, and Covanta Delano) are in census tracts designated as disadvantaged under SB 535, <https://oehha.ca.gov/calenviroscreen/sb535>

<sup>10</sup> Data from CalEnviroScreen 3.0. <https://oehha.ca.gov/calenviroscreen>.

<sup>11</sup> Based on the EPA Enforcement and Compliance History Online Database, <https://echo.epa.gov/>, and other public records.

<sup>12</sup> EPA Enforcement and Compliance History Online Database, <https://echo.epa.gov/enforcement-case-report?id=09-2014-0502>

<sup>13</sup> Blue Lake Rancheria, Environmental Programs, <https://bluelakerancheria-nsn.gov/about/departments/environmental-programs-2/>; Blue Lake Power Under Fire From Residents, Tribe Over Alleged Pollution Violations, Clean Power Exchange (Nov. 29, 2016), <https://cleanpowerexchange.org/blue-lake-power-under-fire-from-residents-tribe-over-alleged-pollution-violations/>

<sup>14</sup> Green, Ronnie, "Green" Biomass Isn't Always So Clean, Center for Public Integrity (April 26, 2011, updated May 19, 2014), <https://publicintegrity.org/environment/green-biomass-isnt-always-so-clean/>