



Conventional Biomass Incineration is Not the Answer

Conventional biomass incineration is an irresponsible means of generating electricity.

Conventional biomass incinerators are heavy carbon emitters relative to their size, major sources of criteria pollutants and extremely noneconomic.



Climate Change

Nationally, conventional biomass incinerators produce three times more CO₂ per megawatt hour than natural gas and one-and-a-half times more CO₂ than coal¹. While biomass incineration is technically renewable, it is renewable on a decades-long timeframe. Once an incinerator burns a tree, it will take an entire lifespan (60 or more years) of a new tree to sequester the burned tree's CO₂.

To have any chance at combating climate change, humans must stop emitting carbon now. The planet cannot afford to wait 50 to 100 years for an energy to be truly renewable and non-polluting.

Current California policy requires utilities to purchase capacity from biomass incinerators. Policies like these displace renewables like wind and solar, further contributing to climate change.

Public Health

Conventional biomass incinerators do place emission controls on forest slash that may otherwise have been burned in open piles. However, these facilities concentrate criteria pollutants in predominately disadvantaged communities.

In the San Joaquin Valley, there are five biomass incinerators in operation. All five are among the top 30 emitters (on a list of 5,000) of fine particulate matter (PM 2.5) in the San Joaquin Valley². PM 2.5 emissions are so fine that they pass through human tissue. PM 2.5 leads to chronic heart and lung disease and exacerbates their symptoms.

These facilities are located in very close proximity to neighborhoods which are among the most disadvantaged on CalEnviroScreen. One incinerator, Rio Bravo Fresno, is half a mile from an elementary school.

1. Emission Factors for Greenhouse Gas Inventories. Rep. Washington D.C.: United States Environmental Protection Agency, 2015. Web. https://www.epa.gov/sites/production/files/2015-07/documents/emission-factors_2014.pdf.

2. 2015 criteria pollutant data accessed through ARB Facility Search Engine. <https://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php>.

Noneconomic

Biomass incinerators are incredibly expensive to operate. Thus, the power they produce is very costly.

In prepared testimony for the California Public Utilities Commission, California's major investor owned utilities stated that the price per megawatt hour purchased from a bioMAT (3 to 5 MW) facility is \$199.72³.

Facilities on BioRAM contracts (large-scale, existing facilities) which are required to burn dead trees from high hazard zones, sell their energy at a confidential rate. However, if these facilities cannot meet their high hazard zone requirements, they must accept a substantial price drop to \$89 per megawatt⁴.

Utilities in California pay an average of \$40 per megawatt for clean renewable energy. Biomass incineration costs the California ratepayer as much as five times the average.

Means Do Not Justify the Ends

Proponents of biomass incineration cite the emissions reductions relative to pile burning and forest fires.

Once an area has been thinned, removed and piled, if left to decompose, the CO₂ emissions are nearly the same as if the pile is burned in an incinerator⁵. These emissions from decomposition are released over decades rather than all at once in an incinerator.

Proponents of biomass incineration often compare emissions from biomass incinerators to those of forest fire or prescribed burns. This is an apples to oranges comparison. Fire is a natural and essential component of forest ecosystems. Removing trees for emission reductions in the event of a forest fire ignores the ecological benefits associated with fire.

Additionally, if large-diameter trees are removed and incinerated, the resulting emissions would be higher than in a forest fire when the outside may char, but the majority of the tree remains intact. In a biomass incinerator, the entire tree is burned and converted to CO₂.

The Bottom Line

Biomass incineration is a non-economic means of producing energy that creates health and climate threatening air pollution.

3. Power Charge Indifference Adjustment

<http://docs.cpuc.ca.gov/PublishedDocs/SupDoc/R1706026/1267/212643556.pdf>.

4. Bioenergy Renewable Auction Mechanism (BioRAM) Request for Offers

https://www.pge.com/includes/docs/pdfs/b2b/wholesaleelectricssuppliersolicitation/BioRAM/BioRAM_Protocol_final.pdf.

5. Booth, Mary. Not carbon neutral: Assessing the net emissions impact of residues burned for bioenergy. Environ. Res. Lett. 13 (2018).

For more information, contact Daniel Barad

(916) 557-1103 • Daniel.Barad@sierraclub.org

www.sierraclubcalifornia.org