

**Comment to ceqa-sp11:
Proper Accounting of Biogenic CO₂ Emissions**



ABOUT GAIA

The Global Alliance for Incinerator Alternatives (GAIA) is an alliance of more than 660 community groups and non-governmental organizations in 90 countries whose ultimate vision is a just, toxic-free world without incineration. We actively oppose incinerators, landfills, and other end-of-pipe interventions, in favor of clean production and the creation of energy and materials-efficient economies where all products are reused, remanufactured, repaired or recycled. As such, GAIA spends a considerable amount of time helping local, state and federal governments and agencies, and other stakeholders understand the dynamics between waste, climate emissions and strategies that serve to reduce both.

RECOMMENDATION

ARB must ensure that all emissions from combustion, including biogenic CO₂, are measured and counted towards emissions limits. Imposing costs on emissions of fossil CO₂ emissions without imposing similar costs on biogenic CO₂ emissions would result in a number of extremely serious distortions, including increased deforestation, conversion of food crops to fuel crops, and increased overall CO₂ emissions. Industry's arguments to omit the counting of biogenic CO₂ are without scientific merit and should be rejected.

BACKGROUND

Carbon dioxide (CO₂) is often divided into two types: "biogenic" and "fossil". Biogenic refers to CO₂ which results from the combustion of biomass, including trees, plants, peat, wood, paper, food waste and other materials which were recently alive. Fossil CO₂ derives from the combustion of fossil fuels such as oil, coal and natural gas as well as plastic (which is made primarily from oil or natural gas). The distinction between biogenic and fossil CO₂ rests solely on their origin – all CO₂ in the atmosphere behaves identically; in particular, the radiative forcing due to CO₂ does not depend on whether it is of fossil or biogenic origin.

Industry has argued that biogenic CO₂ emissions do not add to overall atmospheric concentrations of CO₂ and therefore should not be controlled in the same way as fossil CO₂ emissions. The arguments are various, but all are fallacious.

Argument #1: Biogenic CO₂ is part of the natural carbon cycle.

Reality: Human activity, including deforestation, burning biomass, and farming, has resulted in a significant release of biogenic CO₂ into the atmosphere. Tackling climate change requires reducing these emissions as much as emissions of fossil CO₂.

Argument #2: Biogenic CO₂ will be released into the atmosphere anyway as organic material decomposes, so burning the organic matter does not result in a net increase in atmospheric CO₂.

Reality: The fate of biogenic carbon in organic matter varies greatly depending on the type of matter and how it is handled. Some materials will decompose rapidly and release CO₂ to the atmosphere; others decompose slowly; and wood can store carbon indefinitely. Composting can actually lock some

carbon into soil, building up the organic content of soil. Only combustion releases virtually all carbon in organic matter instantaneously, however.

Argument #3: Biogenic CO₂ will be absorbed by growing plant matter, so releasing it into the atmosphere will not result in additional atmospheric CO₂.

Reality: This argument assumes that increasing CO₂ emissions (for example, by burning biomass) will automatically result in an increase in CO₂ uptake; however, no such correlation exists. Indeed, there is some evidence that activities which increase biogenic CO₂ emissions (such as harvesting wood for energy or failing to return organic matter to soil) also reduce the land's natural ability to remove CO₂ from the atmosphere.

Argument #4: The Intergovernmental Panel on Climate Change (IPCC) has stated that biogenic CO₂ emissions need not be counted.

Reality: The full quote is: "The CO₂ emissions from combustion of biomass materials (e.g., paper, food, and wood waste) contained in the waste are biogenic emissions and should not be included in national total emission estimates. However, if incineration of waste is used for energy purposes, both fossil and biogenic CO₂ emissions should be estimated. Only fossil CO₂ should be included in national emissions under Energy Sector while biogenic CO₂ should be reported as an information item also in the Energy Sector. Moreover, if combustion, or any other factor, is causing long term decline in the total carbon embodied in living biomass (e.g., forests), this net release should be evident in the calculation of CO₂ emissions described in the Agriculture, Forestry and Other Land Use (AFOLU) Volume of the 2006 Guidelines." As the last sentence makes clear, excluding biogenic CO₂ emissions only makes sense if these emissions are accounted for elsewhere. This is to prevent double counting in national total emissions estimates. On a project-by-project basis, however, there is no reason not to count biogenic emissions.

CONSEQUENCES

The consequences of enacting an emissions control regime for fossil CO₂ without controlling biogenic CO₂ emissions would be negative and potentially severe. A carbon price that excludes biogenic emissions would create a financial incentive for firms to switch from fossil fuels to burning biomass. If carried out on a large scale, this would further aggravate current levels of deforestation. It would also incentivize the burning of dirty biomass, such as treated lumber, which is a significant source of various toxic pollutants including heavy metals, persistent organic pollutants, and particulates. Analyses of such partial emissions regimes indicate that they could lead to complete deforestation within a few decades.

Similarly, liquid biofuels would replace fossil fuels, placing greater pressure on existing farmland to produce both food and fuel. This would lead to price increases for food, greater demand for synthetic fertilizer (which is a significant source of greenhouse gas emissions) and the further depletion of soil carbon.

Such a rule would also have implications for waste management. Approximately 30-50% of the carbon in municipal waste is biogenic in origin; if these emissions are not tallied against emissions limits, it will create an undue incentive to incinerate waste, which will undercut the state of California's established goals of reducing waste disposal by 50%.

The exemption of biogenic CO₂ would also undermine the primary goal of a carbon price, which is to drive investment towards truly clean technologies. Biomass combustion is a well-established, relatively cheap technology, compared with newer forms of energy such as solar, wind, and tidal. These would be starved of investment if firms believed they could meet regulatory goals by burning biomass.

Finally, since biomass is a relatively inefficient fuel – it produces more CO₂ per kilowatt-hour than coal – increased burning of biomass would also lead to an overall increase in atmospheric CO₂, thus completely upending the goal of any climate policy.

CONCLUSION

A scientifically rigorous emissions control mechanism will require that all CO₂ from combustion, whether biogenic or fossil in origin, count towards emissions limits. There is no scientific basis for exempting biogenic CO₂ from the emissions control regime. Moreover, such a loophole would be large enough to completely defeat the purpose of climate legislation, as well as create other untoward effects.

SOURCES

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