

CO₂ emissions from biomass combustion

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An article in the current issue of *Global Change Biology Bioenergy* proposes a new method to account for CO₂ emissions from biomass combustion in bioenergy systems.

CO₂ emissions resulting from bioenergy production have traditionally been excluded from most emission inventories and environmental impact studies because bioenergy is carbon- and climate- neutral as long as CO₂ emissions from biofuel combustion are sequestered by growing biomass. Its climate impact has not therefore been considered.

Cherubini and coauthors propose that CO₂ emissions from biomass combustion for bioenergy should no longer be excluded from Life Cycle Assessment studies or be assumed to have the same global warming potential as anthropogenic CO₂ emissions. [Carbon dioxide](#) is emitted when biomass is burnt and the sequestration in the new vegetation can be spread for up to several decades in the case of slow-growing biomass, like forests.

The authors believe that the global warming potential of CO₂ emissions from bioenergy production depends on the interactions with the full [carbon cycle](#) and its sinks, the oceans and the terrestrial biosphere, which work on different time scales. Most significant is the formulation of Impulse Response Functions to predict atmospheric decay of CO₂ emissions from biomass combustion and the adoption of an index to estimate the contribution of those emissions to global warming.

According to Dr. Francesco Cherubini, Postdoctoral Fellow at the

Norwegian University of Science and Technology (NTNU), "This work reduces the inaccuracy of CO₂ accounting in environmental impact studies, and is a first step towards the development of an accurate and standardized procedure for quantifying the effective [climate impact](#) of CO₂ emissions from biomass [combustion](#)."

More information: www.gcbbioenergy.org/

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