



International Council of Forest and Paper Associations Carbon Neutrality of Biomass

Biomass energy is expected to play a significant role in the substitution of renewable energy sources for fossil fuels over the next decade, at least in some parts of the world. The forest products industry plays an important role in contributing to the production of renewable energy and reducing dependence on fossil fuel by using residuals and byproducts to produce much of the energy required for its operations. Because trees absorb CO₂ when they grow, the international carbon accounting principle accepts that biomass is carbon neutral when combusted for energy.

As forests grow, CO₂ is removed from the atmosphere via photosynthesis. This CO₂ is converted into organic carbon and stored in woody biomass. Trees release the stored carbon when they die, decay, or are combusted, completing the carbon cycle. The carbon in biomass will return to the atmosphere regardless of whether it is burned for energy, allowed to biodegrade, or lost in a forest fire. The net impact of these processes is that CO₂ flows in and out of forests and through the forest products industry by both biomass combustion and sequestration in products. Overall, the flow of forest CO₂ is carbon positive when forests are sustainably managed. The carbon neutrality of forest biomass is a scientifically supported fact.

The carbon neutrality of biomass harvested from sustainably managed forests has been recognized repeatedly by an abundance of studies, national legislation and international policy, including the guidance of the Intergovernmental Panel on Climate Change (IPCC) and the reporting protocols of the United Nations Framework Convention on Climate Change. However, some governments continue to introduce incentives and mandates to increase the use of renewable energy, concerns have been raised over the potential depletion of forest carbon stocks that may upset the carbon balance.

The ICFPA believes that:

1. CO₂ released from the combustion of wood biomass is part of the global carbon cycle and does not increase the amount of carbon in circulation in the biosphere when the growth of forest stocks is equal to or exceeds harvests;
2. In the case of afforestation of non-forested land or in the case of reforestation¹, the CO₂ released from the use of such woody biomass is also carbon neutral;
3. Theories on 'carbon debt'² and 'payback time'³ of biomass are based on an unrealistic assumption that trees are first burnt and then grow;

¹ According to IPCC, reforestation means "the establishment of trees on land that has been cleared of forest within the relatively recent past."

² Carbon debt is the temporal imbalance between carbon emissions and carbon sequestration when using forest biomass for energy.

³ Payback time is the number of years that it would take for carbon sequestration in a growing forest to offset the carbon emissions from the use of forest biomass for energy.

4. The concept of biomass carbon neutrality is central to the use of bio-based wood and paper products as a substitute for other materials that are fossil fuel intensive, and therefore to the development of a circular bioeconomy.

ICFPA members agree that preserving the concept of biomass carbon neutrality is critical to the sustainability and the economic well-being of the global forest and paper industry and society in general and plays a central role in reducing global CO₂ emissions, as well as increasing carbon stocks. ICFPA members further agree to promote the concept of biomass carbon neutrality with international organizations and national governments.