

January 2022

## International Council of Forest and Paper Associations – Policy Statement

### Carbon Neutrality of Biomass

In many parts of the world, bioenergy and forest products are expected to play a significant role in the substitution of fossil fuels and fossil fuel-based products over the next decade.

The forest products industry plays an important role in contributing to the production of renewable energy and reducing dependence on fossil fuels by using renewable biomass to produce much of the energy required for its operations.

As forests grow, CO<sub>2</sub> is removed from the atmosphere via photosynthesis. This CO<sub>2</sub> 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. Renewable biomass sources like sustainably managed forests act as a “carbon recycler” by absorbing and releasing existing CO<sub>2</sub> in the atmosphere and also storing large amounts of carbon throughout its existence.

The net impact of these processes is that CO<sub>2</sub> flows in and out of forests and through the forest products industry by both biomass combustion and carbon storage in products. Overall, the flow of forest CO<sub>2</sub> is better than carbon neutral when forests are sustainably managed. The carbon neutrality of forest biomass is a scientifically supported fact.<sup>1</sup>

The carbon neutrality of biomass harvested from sustainably managed forests has been recognized repeatedly by an abundance of studies, national legislation, and international policy, and carbon credit methodologies and projects including the science-based guidance of the Intergovernmental Panel on Climate Change (IPCC)<sup>2</sup> and the reporting protocols of the United Nations Framework Convention on Climate Change (UNFCCC). However, as 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. CO<sub>2</sub> released from the combustion of woody 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 at country level;

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<sup>1</sup> Miner, R., et al. *Forest Carbon Accounting Considerations in U.S. Bioenergy Policy*. Journal of Forestry: pp. 591-606. November 2014.

<sup>2</sup> Intergovernmental Panel on Climate Change (IPCC). *Renewable energy sources and climate change mitigation*. Special report prepared by Working Group III of the Intergovernmental Panel on Climate Change, Edenhofer, O., R. Pichs-Madruga, Y. Sokona, K. Seyboth, P. Matschoss, S. Kadner, T. Zwickel, et al. (eds.). Cambridge University Press, Cambridge, UK. 2012.

2. In the case of the use of biomass from afforestation of non-forested land or in the case of reforestation<sup>3</sup>, the CO<sub>2</sub> released from bio-energy production is also carbon neutral. In this case, by definition, the CO<sub>2</sub> has been previously absorbed from the atmosphere by the planted trees. Thus, when such trees are harvested or thinned and used for energy generation or other purposes, the released CO<sub>2</sub> will not represent a net addition of carbon to the atmosphere.

3. The concepts of ‘carbon debt’<sup>4</sup> and ‘payback time’<sup>5</sup> address the concern that an abrupt increase of bioenergy produced from forest biomass leads to emissions in the atmosphere, which can only be absorbed in longer timeframes. When such biomass comes from non-dedicated sources, ICFPA members encourage governments to address this concern by accounting emissions due to bioenergy policies in the land-use sector in line with international accounting rules, including tree growth that precedes harvesting (ie. IPCC criteria).

4. Assigning bioenergy production a zero value at the point of combustion in the energy system while accounting for emissions or removals in the land-use sector is in accordance with the rules agreed at the level of the IPCC. This 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 critical to the development of a well-functioning circular bioeconomy.

ICFPA members agree that understanding the right concepts, especially those already agreed by the international scientific community within the IPCC and the UNFCCC, is critical to the sustainability of the global forest and paper industry, while avoiding inappropriate double counting.

Carbon neutral wood biomass plays a central role in reducing or stabilizing the concentration of greenhouse gases in the atmosphere, either through emission reductions, removals or the maintenance of carbon stocks, and avoidance of emissions by substituting for higher-emitting materials depending on the potential of each company or country. This is one of the key solutions to achieve net-zero carbon targets.

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<sup>3</sup> According to FAO, “**Reforestation** is the re-establishment of forest formations after a temporary condition with less than 10% canopy cover due to human-induced or natural perturbations.”

<sup>4</sup> Carbon debt is the temporal imbalance between carbon emissions and carbon sequestration when using forest biomass for energy.

<sup>5</sup> 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.