

Europe's renewable energy directive poised to harm global forests

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Europe's decision to promote the use of wood as a "renewable fuel" will likely greatly increase Europe's greenhouse gas emissions and cause severe harm to the world's forests, according to a new paper published in *Nature Communications*.

European officials on final language for a renewable [energy](#) directive earlier this summer that will almost double Europe's use of renewable energy by 2030. Against the advice of 800 scientists, the directive now treats wood as a low-carbon fuel, meaning that whole trees or large portions of trees can be cut down deliberately to burn. Such uses go beyond papermaking wastes and other wood wastes, which have long been used for [bioenergy](#), but not to this magnitude.

The paper, co-authored by eight scientists from the United States and Europe, estimates that this bioenergy provision in the Renewable Energy Directive will lead to vast new cutting of the world's forests. This is because additional wood equal to all of Europe's existing wood harvests will be needed just to supply 5 percent of Europe's energy.

The paper also estimates that using wood for energy will likely result in 10 to 15 percent in emissions from Europe's energy use by 2050. This could occur by turning a 5 percent decrease in emissions required under the directive using solar energy or wind energy into a 5 to 10 increase by using wood.

Europe's increased wood demand will require additional cutting in forests around the world, but the researchers explain the global impact is likely to be even greater by encouraging other countries to do the same. Already, tropical [forest](#) countries like Brazil and Indonesia have announced they, too, will try to reduce the effect of [climate change](#) by increasing their use of wood for bioenergy.

"Globally, if the world were to supply only an additional 2 percent of its energy from wood, it would need to double commercial wood harvests around the world with harsh effects on forests," said study lead author Tim Searchinger, researcher scholar at Princeton University's Woodrow Wilson School of Public and International Affairs.

Although wood is renewable, cutting down and burning wood for energy increases carbon in the atmosphere for decades to hundreds of years depending on a number of factors, the researchers explained. Bioenergy use in this form takes carbon that would otherwise remain stored in a forest and puts it into the atmosphere. Because of various inefficiencies in both the harvesting and burning process, the result is that far more carbon is emitted up smokestacks and into the air per kilowatt hour of electricity or heat than burning fossil fuels, the authors explained.

While regrowing trees can eventually reabsorb the carbon, they do so slowly and, for years, may not absorb more carbon than the original forests would have continued to absorb. This results in long periods of time before bioenergy pays off the "carbon debt" of burning wood compared to fossil fuels.

The paper also explains why the European directive's sustainability conditions would have little consequence. Even if trees are cut down "sustainably," that does not make the wood carbon free or low carbon because of added carbon in the atmosphere for such long periods of time.

The directive also misapplies accounting rules for bioenergy originally created for the U.N. Framework Convention Climate Change (UNFCCC). Under the rules of that treaty, countries that burn wood for energy can ignore emissions, but countries where the trees were chopped must count the carbon lost from the forest. Although this rule allows countries switching from coal to wood to ignore true emissions figures, it balances out global accounting, which is the sole purpose of those rules, and does not make bioenergy carbon free.

The system does not work for national energy laws, which will be required by the directive. If power plants have strong incentives to switch from coal to carbon-neutral wood, they will burn wood regardless

of any real environmental consequences. Even if countries supplying the wood report emissions through UNFCCC, those emissions are not the power plants' problem.

Finally, the paper highlights how the policy undermines years of efforts to save trees by recycling used paper instead of burning it for energy. Also, as the prices companies are required to pay for emitting [carbon](#) dioxide increase over time, the incorrect accounting of forest biomass Europe has adopted will make it more profitable to cut down trees to burn.

The paper's warning that the use of wood will likely increase global warming for decades to centuries was also expressed by the European Academies Science Advisory Council in a commentary released June 15, 2018.

"Compared with the vast majority of what counts as 'bioenergy by harvesting wood,' solar and wind have large advantages in land use efficiency and lower costs. The focus on [wood](#) is not only counter-productive for climate change but unnecessary," said Dan Kammen, University of California, Berkeley.

The paper, "Europe's renewable energy directive poised to harm global forests," first appeared online Sept. 12 in *Nature Communications*.

Provided by Princeton University

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