

[2015-10-22-climatecentral-wood-burning-may-play-big-role-in-epa-s-new-rules](#)

As the world tries to shift away from fossil fuels, the energy industry is turning to what seems to be an endless supply of renewable energy: wood. In England and across Europe, wood has become the renewable of choice, with forests — many of them in the U.S. — being razed to help feed surging demand. But as this five-month Climate Central investigation reveals, renewable energy doesn't necessarily mean clean energy. Burning trees as fuel in power plants is heating the atmosphere more quickly than coal.

Climate Central reporter John Upton traveled to England and through the U.S. Southeast to investigate both ends of the global trade in wood pellets, interviewing scientists, politicians, policy makers, activists, workers and industry leaders. Europe has long been viewed as the wellspring of climate action. But the loophole that's promoting wood burning is so overlooked, he discovered, that it's unlikely to even be raised during global climate treaty negotiations in Paris this December.

By [John Upton](#)

Oct. 22, 2015

DESCHUTES COUNTY, ORE. - More than 100 feet beneath the crowns of arrow-straight pines, the forest floor around Peter Caligiuri was overgrown. He pointed at clumps of trees taller than him, but so thin he could have wrapped his hands around their trunks. Before the era of modern firefighting, regular brush fires thinned out woodlands like these. Now, with smaller wildfires kept at bay, small trees can flourish, fueling fiercer blazes when forest fires inevitably arrive.

“The understory would have been occupied by a lot more native vegetation; diverse vegetation,” said Caligiuri, a Nature Conservancy forest ecologist working with other groups and the federal government to restore forests around Bend — mostly by thinning them out. “What we're seeing here in central Oregon is emblematic of a lot of the problems we're seeing across the Intermountain West.”

Instead of leaving them to burn in forest fires, Oregon officials want these skinny pines and other trees cut down and burned in power plants. Wood is an increasingly [popular source of energy](#) in Europe, where it's richly subsidized. But wood energy can accelerate climate change. Living trees absorb carbon dioxide from the atmosphere, and burning dead ones releases more carbon dioxide than coal.

Oregon officials say burning waste wood and forest thinnings from its large logging industry and forestlands would protect the climate, while improving the natural environment. But their ambitions go beyond that. The governor's office wants to know whether the last coal plant in the state could be converted to run on wood — a substantially riskier proposition for the atmosphere.

The U.S. Environmental Protection Agency is about to make critical decisions about this kind of energy as it cracks down on power plant pollution. Its decisions will affect how a fuel known as biomass — wood and other organic material burned for energy — can be used by the states to meet new pollution rules. In doing so, the agency will walk a fine line between promoting the use of wood energy that could accelerate deforestation and global warming, and defining the limited sources of wood fuel that could help ease those problems.

The European Union makes no such distinction. Through a loophole in its clean energy regulations, all wood energy is treated as if it releases no carbon dioxide. That accounting trick is allowing European national governments and their energy sectors to pump tens of millions of tons of greenhouse gases into

the air every year — without accounting for it. That helps them keep that pollution off their books, but not out of the atmosphere.



Burning wood only helps the climate in special circumstances, like when waste is used for energy instead of being burned off in a field, or when trees are planted on barren land to eventually produce fuel.

The EPA will decide which types of wood energy can count as clean energy on a state-by-state basis. By letting states propose their own rules, the federal government risks allowing Oregon, Virginia and other states with large forestry industries to downplay the climate impacts of wood energy as they devise their plans to reduce climate-warming pollution.

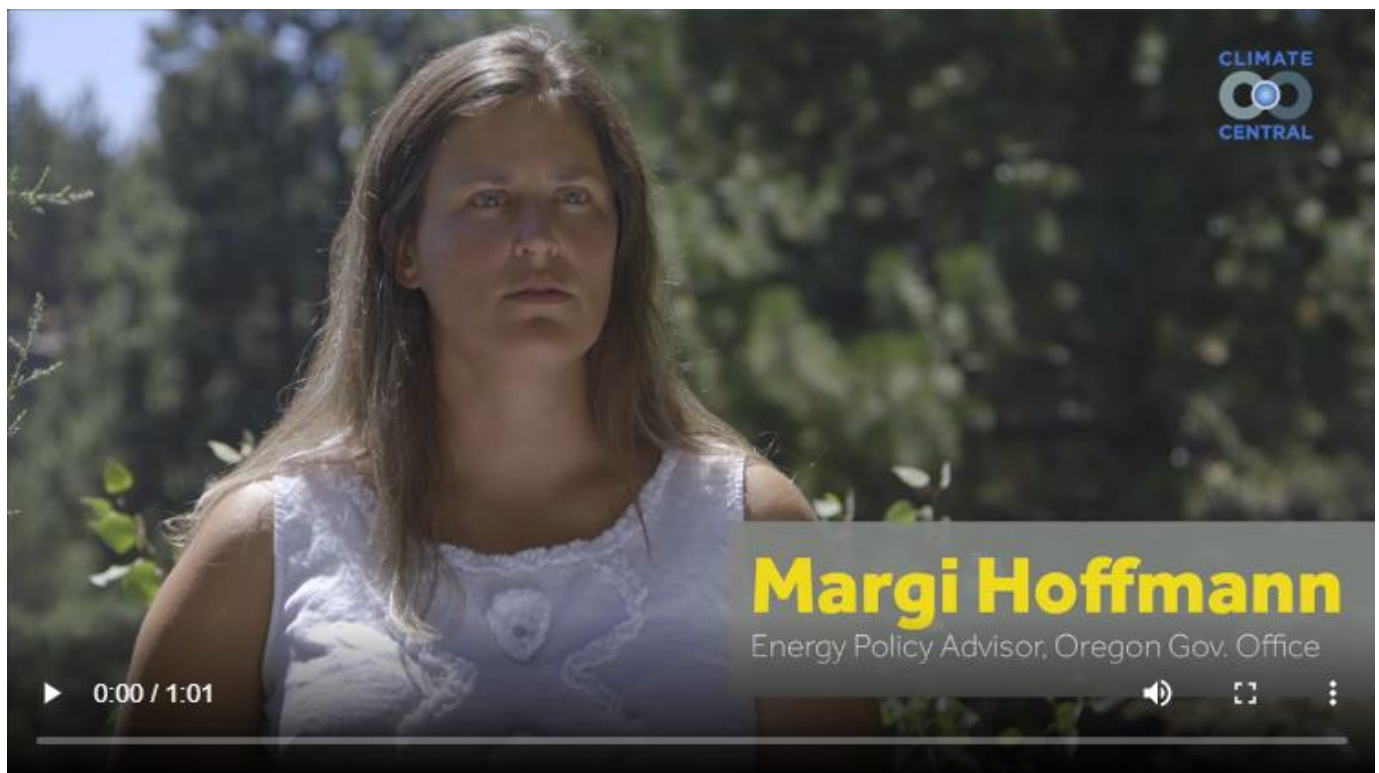
The Clean Power Plan — 1,560 pages of electricity rules finalized in August by the EPA — represents an unprecedented effort by the U.S. government to start forcing states to control climate pollution from their power industries. Most states already allow wood burning to count as renewable energy generation. The EPA will allow states to propose increasing their use of wood energy to help meet the new greenhouse gas reduction rules.

Wood energy is considered renewable because trees can regrow. But it's not a clean energy source like wind turbines or solar panels, which convert energy from the environment to electricity. Wood is a fuel, meaning it must be burned to produce electricity, which releases pollution. Analysis of European data suggests that converting a modern coal plant to run on wood pellets increases carbon dioxide pollution by 15 to 20 percent. And for power plants in Europe and parts of Asia that are burning wood pellets (many of which are being produced in the U.S. — all for export) for electricity, carbon pollution can be even greater, because fuels are needed to produce and transport the pellets.

If the EPA is too lenient when it rules on plans submitted by Oregon and the other states, that could threaten not only the climate, but [America's forests](#).

Many of the wood pellets being burned for electricity in Europe were made from trees chopped down in the U.S., including from sensitive wetlands in the Southeast. Allowing this practice to grow could compound the threat that it poses to some of the world’s most heavily logged areas.

The EPA has already hinted that Oregon’s hopes for burning waste wood and forest thinnings could count toward pollution reductions under the Clean Power Plan. That’s based on advice from a [panel of scientists](#) it has convened. But it could be more than a year before states learn whether industrial levels of wood burning are deemed acceptable — and, if so, how.



“We would like to see bioenergy play a significant role in our efforts to reduce carbon emissions,” said Margi Hoffman, Oregon Gov. Kate Brown’s energy advisor. “We would like to see smaller-scale projects listed as carbon neutral,” she said — while acknowledging that biomass energy projects “of a certain size and scale” don’t meet that definition.

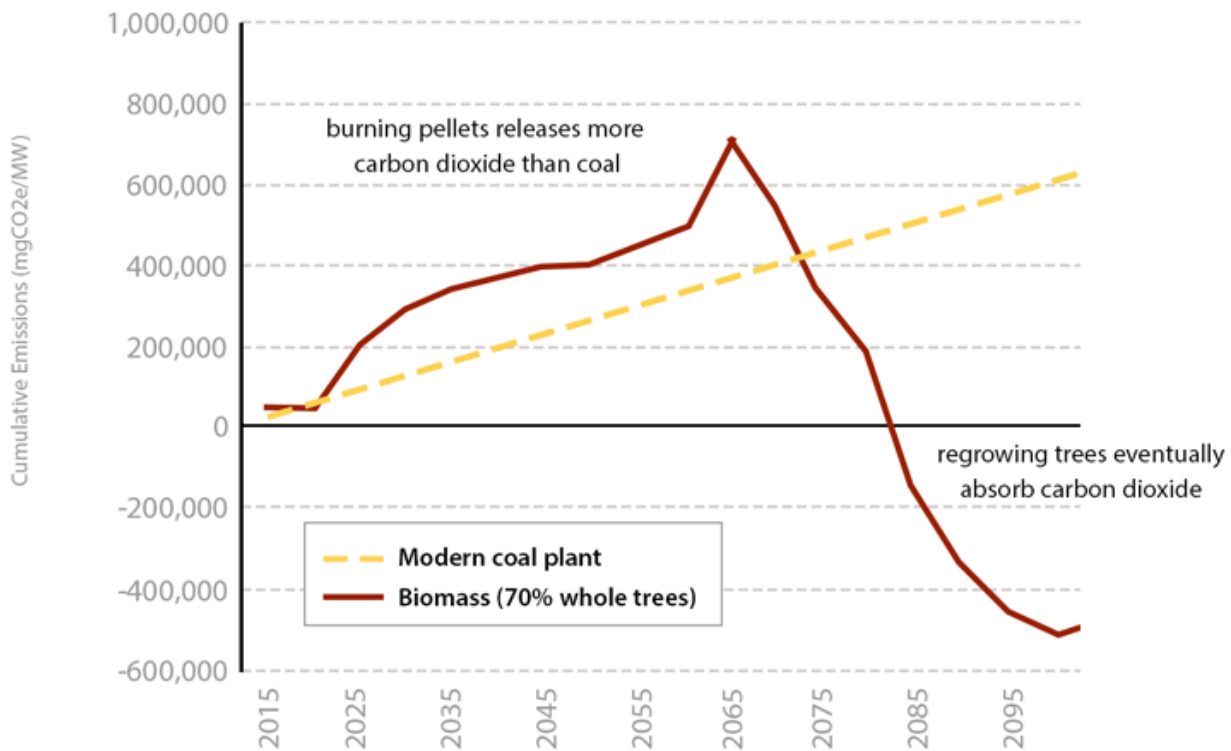
Fears ahead of the upcoming EPA ruling are rooted in more than 20 years of climate research that warns wood energy can’t be used at large industrial scales without harming the climate. Seas have risen more than a half a foot since the beginning of the Industrial Revolution. Climate change is making heat waves hotter and causing heavier downpours. Pollution from wood energy compounds those problems.

“Biomass energy is going to be part of a mix of new forms of energy that gets us off of fossil fuels,” said [William Schlesinger](#), president emeritus at the Cary Institute of Ecosystem Studies whose research frequently deals with climate change. Logging debris can safely be used for energy, he said, and fast-growing grass and some plantation trees will sometimes be “OK.”

But Schlesinger said cutting down old trees to fuel power plants — a scenario that’s already playing out in the Southeast, where many of Europe’s wood pellets are being produced — will exacerbate climate change, the very problem for which wood energy is often pitched as a solution. “There need to be some

rules and regulations put into place that trace the origin of biomass, so you can't go out and cut an old-growth forest and pelletize it and say, 'That's carbon neutral,'" he said.

Wood Pellets Emit More Carbon Than Coal



Credit: modelled emissions from NRDC

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While forest-rich Oregon sees environmental wonder in burning waste wood to provide electricity, Massachusetts sees the dangers of it. In 2012, following the [commissioning of a study](#) into the potential climate and forestry impacts of wood energy, Massachusetts [adopted rules](#) to limit its use.

The different rules in Oregon and Massachusetts reflect their economic, physical and political landscapes. The EPA is comfortable with that diversity. It will allow states to set their own rules under the Clean Power Plan. But it will wield a veto.

“It’s complicated,” said [Robert Sussman](#), an energy industry consultant and Yale Law School lecturer who was a senior advisor in the EPA from 2009 to 2013. “On the one hand, the EPA is saying that combustion of biomass could be carbon neutral under certain circumstances. But then it’s turning around and making the path for industry and the states complex.”

Under the Clean Power Plan, states that want to use wood energy to meet pollution targets must “adequately demonstrate” that the fuel they use — be it wood chips, wood pellets, mill waste, almond shells or trees killed by beetles, for example — will “appropriately control” increases of carbon dioxide in the atmosphere. Only wood-burning power plants built after 2012 will be considered eligible.

The EPA hasn't said how it will decide whether a proposal to burn wood for electricity would “appropriately control” rises in greenhouse gas pollution.

The EPA's panel of science advisors has agreed that some kinds of waste wood can be burned to produce electricity — and benefit the climate at the same time, said Joe Goffman, an EPA air official who helped draft the new rules.

“We've opened up the door for states to submit plans that include some kind of biomass component,” Goffman said. “If states include biomass as a component in their plans, they can essentially present the case as to why their approach is appropriate.”

Most states have standards in place that require utilities to include renewable energy in their electricity supplies. The standards tend to focus on promoting renewable energy — rather than reducing climate pollution — and wood energy is a renewable alternative under these rules. Under the EPA's new power plant rules, states will also need to start considering the climate effects of wood burning.

Massachusetts already does that out of concern for the climate and its forests, limiting the types of wood that can count as renewable fuel under its standards. Since 2012, its efficiency standards have been so high that a wood-burning power plant would also have to heat buildings to qualify.

In Virginia, which is home to a large forestry industry, the rules are looser. Dominion Resources used investment tax credits, available from the federal government, to help it switch three of its small coal plants in Virginia to run on wood chips. It's allowed to count that energy toward its state renewables requirements. Each of the converted plants produces about 50 megawatts of electricity — a typical size for a U.S. biomass plant, capable of powering thousands of homes. Virginia's power regulators [allowed the company](#) to pass on more than \$160 million in costs to its bill-paying customers.





*The EPA will decide how states like Oregon can burn trees to comply with new pollution rules. If its rulings are too lax, they could add to warming and threaten forests.
Photos by Rod Parmenter.*

Dominion Resources doesn't expect to convert its larger power plants to run on wood to help meet Clean Power Plan requirements. Without access to the hundreds of millions of dollars in subsidies that European governments provide for renewable energy — [virtually guaranteeing profits](#) for even the most expensive projects — large-scale wood burning might not be feasible for American power plants. “The cost of converting large pulverized coal units to biomass would be too high to consider,” company spokesman Dan Genest said.

The EPA hasn't said how it will decide whether a proposal to burn wood for electricity would “appropriately control” rises in greenhouse gas pollution. Its rulings will be crucial — both in reducing real-world pollution and in setting an example to counter the destructive one being set by Europe. The agency has so far made two broad statements: it won't treat all wood burning as carbon neutral, but waste as fuel may be treated as such.

In a [memo signed](#) last year by senior EPA official Janet McCabe, the agency indicated that it “expects to recognize” the climate benefits of “waste-derived and certain forest-derived industrial byproduct feedstocks.” It also said it may approve state plans that include the burning of what it vaguely described as “sustainably derived agricultural and forest-derived feedstocks.”

Those ambiguous statements have triggered consternation among scientists and environmental groups. They wonder what “sustainably derived” will mean. Sustainability can refer to environmental practices that have “little-to-no bearing on the carbon implications of biomass use,” the Cary Institute's Schlesinger and dozens of other scientists wrote [in a letter](#) to McCabe.

For some wood fuels, the agency may require states follow a new system for measuring climate impacts.



“The EPA needs to set up a factor that they multiply by the smokestack emissions,” said Oregon State University forest ecology professor [Mark Harmon](#), a member of the science panel that’s advising the agency on wood energy’s climate effects. “What really counts? What really is being added to the atmosphere — or maybe taken out of the atmosphere, in some cases?”

Even when it helps the climate, wood energy isn’t all forest restoration and atmospheric rainbows. Like fossil fuels, wood energy is dirty energy. Burning wood releases pollution that creates haze and ozone, triggering emphysema and asthma attacks. That’s why some local air quality districts ban residents from using fireplaces on the smoggiest days. Waste wood may also have been treated with pesticides, paint and other poisons, which can be released as air pollution when burned.

Wood energy’s pollution, combined with its climate impacts and its potential to contribute to deforestation, has seeded deep opposition to it in the U.S.

When Oregon lawmakers were debating [a bill](#) that would eventually declare wood energy to be carbon neutral, the Sierra Club’s state chapter [testified in opposition](#). Scientifically, the legislation was “deeply flawed,” the group pointed out, warning it could accelerate climate change and sully the air.

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Power plant owners can take costly steps to reduce air pollution, but those that burn wood have fewer regulatory requirements than those burning fossil fuels. Among other differences, wood-burning power plants can release more than twice as much pollution as coal or gas plants before they’re affected by federal clean air rules.

“There are real public health impacts if you live next to one of these facilities, and the facility isn’t run really well,” said [Nathanael Greene](#), director of renewable energy policy at the Natural Resources Defense Council. The influential American nonprofit campaigns against the overuse of wood energy, such as in Europe.

The potential role wood energy could play under the Clean Power Plan won't become clear until the EPA begins assessing state plans, which are due next year. States could receive extensions for two years beyond that. Meanwhile, the agency is consulting with its panel of scientists and calling for public comment as it tries to hone its approach to regulating pollution from wood energy.

The NRDC says the EPA is correct to conclude that wood energy is not always carbon neutral. It says it will pressure the agency to be highly critical of state proposals to count electricity from waste wood as zero carbon under the Clean Power Plan.

“If you're going to say that it's zero carbon, it doesn't just have to control carbon a little bit — it's got to control it all the way down to being equal to wind power or solar power,” Greene said. “It's unclear from the final regulations how the EPA will determine if that standard has been met.”

By potentially deferring to the judgment of Oregon, Virginia and other states, the federal government risks allowing harmful types of wood energy to be counted as clean. Momentum toward tackling global warming is growing stronger around the world, led in part by the U.S., which is striving to be a leader on climate action. Any mistakes now by the EPA threaten to entrench the European approach and entice other countries to follow, undermining global efforts to tackle climate change.

Source: <https://reports.climatecentral.org/pulp-fiction/3/>