

Getting Renewables Right: Biomass

Safeguards unlock the potential of biomass while protecting the environment



Renewable biomass can either be part of the solution to global warming or part of the problem. If sourced responsibly, biomass from forests, crops, and waste streams can have low carbon footprints while protecting sensitive ecosystems and benefitting local economies.



Biomass: Not All Energy Is Created Equal

Without appropriate safeguards and full lifecycle greenhouse gas emissions analyses, biomass development can undermine our efforts to reduce dangerous heat-trapping pollution. Depending on where materials are sourced and how they are produced, biomass can serve as a low-emissions energy source or it may increase carbon pollution. This applies to both direct emissions caused by clearing carbon-rich forests for feedstock as well as indirect effects on land use caused when forests are cleared and replaced with biomass crops dedicated to energy production.

Additionally, where and how biomass is sourced and produced directly affects ecosystem health, landscapes, habitats and communities. Safeguarding sensitive wildlands from becoming feedstock for biomass protects countless species threatened by climate change, as well as communities dependent upon the clean air and water these places provide.



Isn't Biomass Carbon Neutral?

Some argue that bioenergy is “carbon neutral” because carbon dioxide released during the burning of materials would have been released eventually through natural dieback and decay. However, these arguments ignore the fact that the carbon in woody biomass could have been stored in a non-harmful form for hundreds of years. In fact, there is three times as much carbon stored in our lands than in the atmosphere and we rely on our forests and grasslands to continue to sequester carbon as part of the nation’s plans to stabilize the climate. Releasing the carbon stored in these lands into the atmosphere is not a neutral act. Similarly, it can take centuries to sequester as much carbon dioxide back into a forest ecosystem as would be released by logging and burning existing trees.

What is biomass?

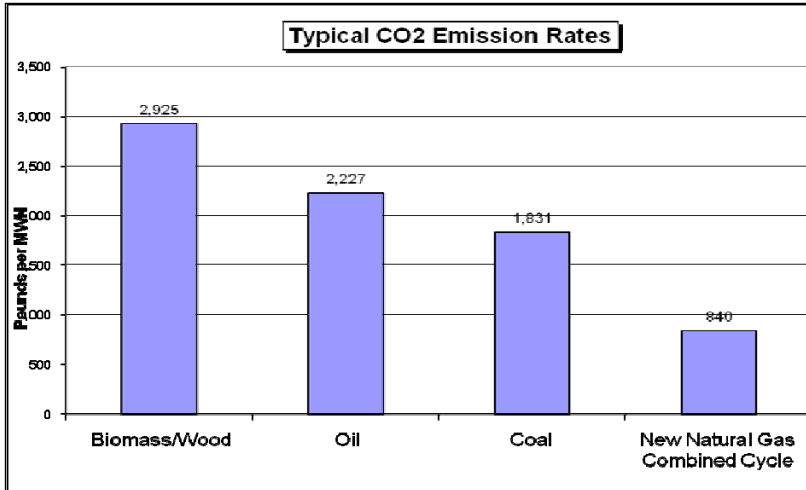
Biomass refers to plants and plant-derived material that can provide renewable energy for our future. Varying pieces of legislation, however, have defined renewable biomass differently in terms of qualifying feedstocks, exclusions, and sustainability requirements.

A responsible definition of biomass is critical. Without proper safeguards, biomass development can contribute to, instead of combat, the climate crisis.

Biomass claims of carbon neutrality often overlook the fossil fuels needed to harvest and burn the material, as well as ignore the carbon lost when land is converted from a natural forest to an energy plantation. If greenhouse gas emissions from harvesting biomass are not considered in a cap-and-trade system, the only way to minimize potential impacts of biomass energy on the atmosphere and environment is through the regulations governing the harvest.

Burning biomass does not always support our climate goals and could even increase overall greenhouse gas emissions.

Woody biomass emits 20-30 percent more carbon dioxide than coal when burned for electricity.



Source: Clean Air Task Force, citing David Schoengold, MSB Energy Associates, Inc.¹

If carbon stores on the source forest are maintained or increased as a result of a biomass harvest, uptake of carbon by growing trees can balance these excess emissions. But many commercial forest operations fail to achieve that balance. Without proper safeguards, heavy cutting, or delayed regeneration, could lead to carbon deficits that take decades to make up.



Putting Biomass On The Right Track

Balancing the potential for biomass to serve as an engine for clean, sustainable economic growth against its potential to worsen carbon emissions hinges on two factors:

- *how “renewable biomass” is defined, and*
- *if biomass is subject to lifecycle greenhouse gas analyses.*

A responsible definition of renewable biomass would prevent the conversion of naturally regenerating forests on non-federal lands and safeguard the National Wilderness Preservation System, Wilderness Study Areas, Inventoried Roadless Areas, old growth stands, the National Landscape Conservation System, National Monuments, National Conservation Areas, Designated Primitive Areas, and Wild and Scenic River corridors--landscapes that hold special ecological, cultural and historic values. In the face of a warming world, our public lands play an important role in combating the disturbances brought on by climate change.

¹ Emission rates calculated by David Shoengold (MSB Energy Associates, Inc.) from EIA and EPA 2001 databases. The emission rates are representative of New England and the biomass, oil, and coal data is based on Pine Tree Power Plant, typical New England oil, and Brayton Point coal-fired plant, respectively.

Inventoried Roadless Areas, for example, provide clean drinking water to more than 60 million Americans and serve as critical, intact habitat to species struggling to cope with increased temperatures and drought. Our national forests' old growth stands also serve as a buffer against global warming by storing great quantities of carbon. Older forests provide habitat to several at-risk species and help retain significant plant and animal diversity as well as improve water quality by filtering pollutants before they reach streams.



Subjecting biomass to lifecycle greenhouse gas analyses is absolutely critical to ensuring we realize potential carbon pollution reductions. The Energy Independence and Security Act of 2007 (Public Law No: 110-140) stipulates that fuels from biomass must undergo a cradle-to-grave carbon footprint analysis, including so-called “indirect” effects—or the impacts caused as worldwide markets adjust to ramped up biomass harvesting. This impact on land use is a primary source of emissions associated with biofuels—which is exactly why special interests are fighting to keep the public in the dark by stripping indirect land use change analyses from most biofuel regulations.

Forests: Victim & Solution

Over fifteen percent of current U.S. CO₂ emissions are absorbed by our forests and other vegetation,¹ but we are in danger of losing that important buffer. Healthy wildlands also provide important natural services and contribute to local economies. For example, outdoor recreation alone contributes \$730 billion to our economy every year. Proper biomass safeguards ensure that biomass development does not lead to land use change and forest loss—protecting these carbon sinks and conserving working forestlands and unfragmented wildlands for all their public benefits.

Current land-use and forestry practices in the U.S. remove a net 884 million metric tons of CO₂ from the atmosphere each year—more than is emitted annually by the entire U.S. fleet of passenger cars. Protecting our forests is a particularly key component of addressing global warming since these ecosystems are capable of storing vast amounts of carbon for long periods of time.



Planet vs. Profit = False Choice

Those seeking to strip safeguards from biomass provisions tout a false choice between the environment and jobs. Don't be fooled, ***a responsible definition would allow for wide expansion of biomass development, bringing economic opportunity to communities across the country***—while protecting our nation's most important and sensitive ecosystems.

We can incentivize the production of plentiful bioenergy while preserving natural forests, native grasslands, critical wildlife habitat, and our most sensitive and cherished public lands. Without proper safeguards, biomass production can harm the climate, with economic and environmental downsides that rise dramatically as the footprint of projects increases. Support a strong definition that will create sustainable jobs and harness the full potential of biomass as a solution to climate change.

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