

The Power of Wood

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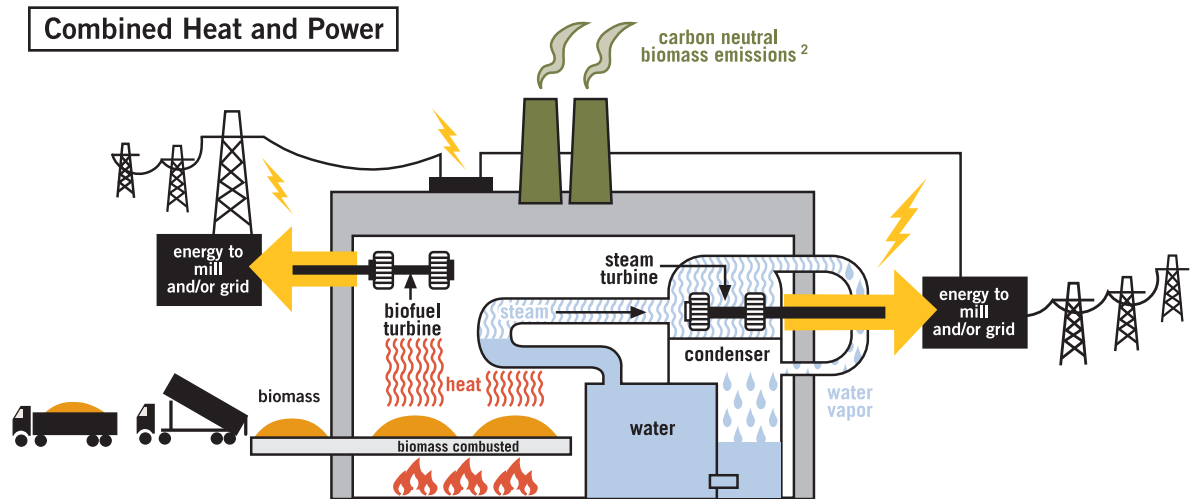


The most familiar form of renewable energy is from the wind and sun. Biomass is another form of renewable energy that has numerous advantages in the fight against global warming.

Biomass has been used by humans to produce energy and heat for centuries. Today, fossil fuels like coal and natural gas have replaced biomass energy as a primary fuel source, making North America the highest fossil-fuel, carbon dioxide-emitting region of the world—1.82 billion tons of carbon in 2004.¹

How Biofuel Energy Works

Wood waste from forestry and manufacturing operations is collected and sent to power plants where it is efficiently burned to power a turbine to produce electricity. Additionally, the steam that is a byproduct of the initial generation can be utilized to power a second turbine to generate even more electricity, a process called combined heat and power (CHP). The energy produced by wood waste has been used by forest products companies for years to power their mills. Excess power can be delivered to the electric power grid.



As the world begins to take action against climate change, **biomass energy has the power** to reduce greenhouse gases, increase forest health, reduce the risk of wildfires and boost the local economy.

¹ Marland, G., T.A. Boden, and J.J. Andres, "2007 Global, Regional, and National CO₂ Emissions." In Trends: A compendium of Data on Global Change. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, U.S. Department of Energy, Oak Ridge, Tenn. U.S.A.

² Biomass emissions are carbon neutral since the carbon in the biomass was sequestered recently by comparison to fossil fuels and would be released to the atmosphere through natural processes if the biomass was left in the forest.

Biofuels in the Future

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Biofuels are transportation fuels like ethanol and biodiesel that are made from biomass materials.

- **Reduced dependence on imported fossil fuel.** Every ton of biomass burned to generate electricity avoids .04 tons of CO₂ emissions from a natural gas fired power plant.
- **Renewable energy.** Trees are being replanted in private forests and more can be replanted in public forests, creating more potential biomass.
- **Reduction in wildfires.** Clearing out overgrown brush and debris reduces potential fuel for wildfires, and decreases the intensity and severity of fires while generating biomass energy.
- **Employment and economic development.** Biomass use creates green jobs, yields tax benefits and creates more economic activity for rural economies.
- **Local grid support.** Biomass power plants can provide electricity to help meet local power needs during periods of high demand.
- **New markets for small trees.** Increased demand for biofuel will help encourage thinning overstocked stands to produce energy, while keeping forests healthy and ensuring that they continue to sequester and store carbon dioxide.

The Intergovernmental Panel on Climate Change and The Climate Registry recognize the fact that biomass emissions are carbon neutral. Research is clear that biomass emissions do not contribute to additional greenhouse gases to the atmosphere.³



*Unlike biofuels produced from corn, which produce 1.2 gallons of biofuel for every gallon of fossil fuel, cellulosic ethanol derived from wood waste can produce between two and 36 gallons for every gallon of fossil fuel used.*⁴

³ National Council for Air and Stream Improvement, Inc. (NCASI), 2004. An Analysis of the Methods Used to Address the Carbon Cycle in Wood and Paper Product LCA Studies. Special Report No. 04-03. Research Triangle Park, NC: National Council for Air and Stream Improvement, Inc.

⁴ <http://ngm.nationalgeographic.com/2007/10/biofuels/biofuels-interactive>

biofuel
benefits