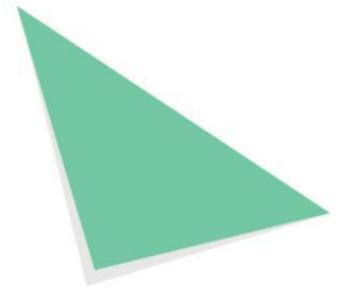


Two Sides Facts



THE MYTH: MAKING PAPER CONSUMES A LOT OF ENERGY.

THE FACT: YES, BUT MOST OF IT IS RENEWABLE ENERGY.

Like all major manufacturing, papermaking is an energy-intensive endeavor. The most recent data from the U.S. Department of Energy, Energy Information Agency show that the paper industry is the country's third-largest industrial user of energy. However, nearly two-thirds of the energy used by U.S. pulp and paper mills is self-generated using renewable, carbon-neutral biomass in high-efficiency combined heat and power (CHP) systems. In fact, the U.S. paper and forest products industry produces and uses more renewable energy than all other industrial sectors combined.

- “The forest products industry is a leader in the production of renewable energy, with more than 65% of the on-site energy needed to produce paper products derived from carbon-neutral biomass.”¹
- The print and paper industry accounts for only 1% of global carbon dioxide emissions.²
- “We have used biomass energy – the energy from plants and plant-derived materials – since people began burning wood to cook food and keep warm, and wood is still the largest biomass energy resource today. Biomass can be used for power production that would otherwise require fossil fuels. In such scenarios, biomass can provide an array of benefits, including the potential to greatly reduce greenhouse gas emissions [that contribute to global climate change]”.³
- “The forest products industry is the largest producer of renewable biomass energy in the United States, generating 77% of the nation’s industrial biomass energy. Additionally, the renewable energy generated by the forest products industry exceeds all of the nation’s solar, wind and geothermal energy generation combined.”⁴
- “Virtually all U.S. pulp and paper mills that generate electricity on-site do so using combined heat and power technology, sometimes called cogeneration,⁵ [which recycles exhaust steam for use as manufacturing process heat or space heating]. Combined heat and power (CHP) systems are highly efficient (up to 75% efficiency compared to 45% for traditional fossil-fuel powered systems) and have lower emissions than separate heat and power generation.”⁶
- “Since 1990, U.S. pulp and paper mill [fossil fuel-generated] purchased energy use per ton of production has been reduced by 25.3% [pulp] and 14.5% [paper] since 2000.”⁷
- “There is a vital difference between energy production from fossil fuels and from biomass. Burning fossil fuels releases carbon dioxide that has been locked up for millions of years [introducing “new” carbon to the atmosphere]. By contrast, burning biomass simply returns to the atmosphere the carbon dioxide that was absorbed as the trees grew and there is no net release of carbon dioxide if the cycle of growth and harvest is sustained.”⁸
- “It is the new carbon from fossil fuels that is primarily responsible for the increases in atmospheric carbon dioxide that have occurred in the last 100 years.”⁹





- “Yes, biomass is carbon neutral and the concept is quite simple. The term carbon neutral contrasts the carbon found in biomass, which is recycled to the atmosphere, to carbon in fossil fuels, which undergoes a one-way transfer to the atmosphere from underground geologic reserves. Carbon neutrality is an inherent property of biomass reflecting the fact that the carbon residing inside it was only recently removed from the atmosphere, so returning it to the atmosphere has no net effect on atmospheric carbon dioxide.”¹⁰
- “Biomass fuels contain carbon that was recently removed from the atmosphere, and this inherent property exists whether or not trees are regrown. Therefore, all biomass is carbon neutral. The overall benefits of biomass fuels depend on how efficiently we use it to displace fossil fuels. The benefits are reduced if biomass is used faster than it is regrown since this shrinks future supplies of carbon-neutral fuel and can reduce the amounts of carbon sequestered in the forest. Fortunately, it is widely understood that using biomass faster than it’s replaced is neither responsible nor sustainable. Sustainable forest management practices, which are strongly supported by the paper industry, not only ensure growth of fiber to meet future needs, they also ensure attention to environmental and biodiversity objectives for the ecosystems in which we operate.”¹¹
- “The Intergovernmental Panel on Climate Change (IPCC) estimates that forest biomass-derived energy could reduce global emissions by between 400 million and 4.4 billion tonnes of CO₂ equivalent per year, a goal that the forest products industry can help society to reach through its forest biotechnology research and forest biomass infrastructure. IPCC has stated that “In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.” The analysis contained in the present report gives strong support to IPCC’s assertion that sustainable management of production forests represents an important mitigation option over the long term.”¹²
- “The biomass emissions from papermaking are part of the natural carbon balance and do not add to atmospheric concentrations of carbon dioxide, unlike emissions from fossil fuel. The forests that provide that biomass support key climate change mitigation technologies and practices currently commercially available including, afforestation; reforestation; forest management; reduced deforestation; harvested wood product management; use of forestry products for bioenergy to replace fossil fuel use; tree species improvement to increase biomass productivity and carbon sequestration; improved remote sensing technologies for analysis of vegetation/soil carbon sequestration potential and mapping land-use change.”¹³
- “At a global level, the greenhouse gas emissions from the forest products industry value chain are largely offset by sequestration in forests and forest products.”¹⁴
- “The carbon removed from the forest by the paper and forest products industry represents only about 0.5% of the carbon that is recycled between the forest and the atmosphere annually, and less than 0.03% of the carbon stored in the world’s forests.”¹⁵



¹ [American Forest and Paper Association \(AF&PA\), 2012](#)

² [World Resources Institute \(WRI\), 2005](#)

³ [U.S. Department of Energy, 2013](#)

⁴ [ibid AF&PA](#)

⁵ [ibid, AF&PA](#)

⁶ [U.S. EPA, 2008](#)

⁷ [ibid, AF&PA](#)

⁸ [International Energy Agency \(IEA\) Bioenergy Task 38, 2002](#)

⁹ [Intergovernmental Panel on Climate Change, 2007](#)

¹⁰ [Miner, R.\(NCASI\), March 2007](#)

¹¹ [ibid, Miner, R., NCASI](#)

¹² [Food and Agriculture Organization of the United Nations, 2010](#)

¹³ [International Panel on Climate Change \(IPCC\), 2006](#)

¹⁴ [World Business Council for Sustainable Development \(WBCSD\) and NCASI, 2007](#)

¹⁵ [ibid, WBCSD and NCASI](#)