

CENTER FOR BIOLOGICAL DIVERSITY

CLIMATE LAW INSTITUTE

351 California St., Ste. 600 • San Francisco, CA 94104 • 415.436.9682 • www.BiologicalDiversity.org

Kraft Pulp Mills: Neglected Under the Clean Air Act December 2011

The United States is the world's largest consumer and producer of paper products.¹ This industry sector is also a significant source of greenhouse gases. Within manufacturing, the forest products industry was the third largest consumer of energy in 2006 (following the petroleum and chemical industries).² The pulp and paper industry emitted 57.7 MMT CO₂eq (million metric tons carbon dioxide equivalent) in 2004.³ Besides greenhouse gases, the pulp and paper industry releases a variety of other air pollutants that can harm human health and well-being. The harmful pollutants emitted during the kraft pulping process include, but are not limited to, particulate matter (PM), sulfur compounds, sulfur oxides, nitrogen oxides (NOx), and volatile organic compounds (VOCs).⁴

Kraft pulp mills “cook” wood chips down into a reduced form that can be used to make paper. The first step in paper manufacturing is “pulping.” This is the processing of wood chips to separate plant fibers, which are the raw material from which paper products are made, from lignin, a glue-like material in wood that binds the fibers together.⁵ Pulping can be completed mechanically, semi-chemically or chemically. The “kraft” method utilizes chemical pulping and is the most common in the United States, despite its low yields (40-55 percent).⁶ The kraft pulping process involves digesting wood chips in chemical solutions at high temperatures and in turn “recovering” the chemicals from the solution through a heating process. These steps produce heat, some of which is used to generate energy for the milling process. This energy-intensive process produces considerable amounts of greenhouse gas pollution⁷ and other pollutants. Yet, there are opportunities to reduce these emissions.⁸

Recognizing the need to control air pollution from this industry, the Environmental Protection Agency (EPA) created new source performance standards under authority of the Clean Air Act for kraft pulp mills in 1978.⁹ The EPA reviewed these standards once in 1986¹⁰ but has failed to update them for the last 25 years.

Under section 111(b) of the Clean Air Act, EPA must not only set pollution emission standards for each category of stationary sources that “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare,”¹¹ but also must review each such standard at least every 8 years¹² to ensure that new industry practices and technology are implemented across the board at all new plants to achieve the greatest possible pollution reductions achievable from these sources. Furthermore, under section 111(d) of the Clean Air Act, the EPA must promulgate “emission guidelines” providing information on health impacts, pollutant reductions, and technology options for reducing air pollution from existing stationary sources.¹³ The first, last, and only emission guidelines for kraft pulp mills were published in 1979.¹⁴

Decades have passed since the EPA last updated the performance standards and emissions guidelines for pulp mills. Since then, technology has continued to improve, as has our understanding of the health impacts of air pollutants, especially greenhouse gases. The result is that much greater reductions in air pollution could and should be achieved today than when these regulations were last reviewed. The EPA is required by law to protect the air we breathe and preserve a safe climate. In the case of kraft pulp mills, it has simply ignored its duties for a quarter century. The EPA must immediately review and revise the new source performance standards for new pulp mills and emission guidelines for existing pulp mills.

¹ A. Brown & Nilgun Atamturk, *Potential Impacts of and Climate Policies on the U.S. Pulp and Paper Industry*, 4 (Georgia Tech. Ivan Allen College, working Paper No. 40, 2008).

² EIA, 2006 Manufacturing Energy Consumption Survey, *available at* <http://www.eia.doe.gov/emeu/mecs/contents.html>.

³ U.S. EPA, AVAILABLE AND EMERGING TECHNOLOGIES FOR REDUCING GREENHOUSE GAS EMISSIONS FROM THE PULP AND PAPER INDUSTRY 7 (2010). This estimate excludes biomass-derived sources of CO₂, of which kraft pulp mills are a significant source.

⁴ World Bank Group, POLLUTION PREVENTION AND ABATEMENT HANDBOOK 396 (1998), *available at* [http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/gui_pulp_WB/\\$FILE/pulp_PPAH.pdf](http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/gui_pulp_WB/$FILE/pulp_PPAH.pdf)

⁵ Office of Compliance, U.S. Environmental Protection Agency, PROFILE OF THE PULP AND PAPER INDUSTRY 15 (2nd ed. 2002), *available at* <http://www.epa.gov/compliance/resources/publications/assistance/sectors/notebooks/pulppasn.pdf>.

⁶ N. Martin et al., OPPORTUNITIES TO IMPROVE ENERGY EFFICIENCY AND REDUCE GREENHOUSE GAS EMISSIONS IN THE U.S. PULP AND PAPER INDUSTRY 10 (July 2000), *available at* <http://www.energystar.gov/ia/business/industry/LBNL-46141.pdf>.

⁷ *Id.*

⁸ See US EPA, *supra* note 3.

⁹ 43 Fed. Reg. 7,568 (Feb. 23, 1978).

¹⁰ 51 Fed. Reg. 18,538 (May 20, 1986); *see also* 66 Fed. Reg. 3180 (Jan. 12, 2001) (setting limits for PM and as a surrogate for metal hazardous air pollutants under authority of 42 U.S.C. § 7412).

¹¹ 42 U.S.C. § 7411(b)(1)(A).

¹² 42 U.S.C. § 7407(d)(3)(E).

¹³ 42 U.S.C. § 7411(d); 40 C.F.R. § 60.22(b).

¹⁴ 44 Fed. Reg. 29,828 (May 22, 1979); *see also* 45 Fed. Reg. 67,146 (October 9, 1980) (corrections to the original guidelines).



For more information:

Vera Pardee, Senior Attorney, vpardee@biologicaldiversity.org or (415) 436-9682 ext. 317
www.BiologicalDiversity.org