

**Stationary Source Subcommittee Report to the
Air Toxics Advisory Committee (ATAC)
Recommendations for Air Toxic Reductions from Stationary Sources
Revision of June 19, 2007**

The Stationary Source Subcommittee was convened in January 2006 with the purpose of exploring short- and long-term reduction strategies for Hazardous Air Pollutants (HAPs) from stationary sources, focusing on ways to reduce the most risk for the least cost. Additionally, the full ATAC directed the subcommittee to limit its recommendations to low-cost or no-cost alternatives. The strategies employed by the Subcommittee included evaluating the potential effects of new and pending federal and state regulations on HAPs, and the potential for HAP reduction through energy conservation programs at stationary sources. This subcommittee, in conjunction with the Science Advisory Committee, also explored the impacts of the rising number of Outdoor Wood Boilers (OWB) on air quality. As ATAC has identified Acrolien as an air toxic of some concern in Maine, this subcommittee has compiled stack testing results and projected dates of other stack testing being conducted on many large wood-fired boilers throughout the state (Appendix A). Combined with analysis from the other subcommittees and recent ambient air testing, this will allow ATAC to better understand the impact of Acrolien on Maine's air quality. The results of our approach are further outlined below.

New and Pending Air Rules

This subcommittee has evaluated the potential reduction in air toxics that could be expected from pending regulation of industrial coatings, household products, industrial boilers, plywood manufacturing, waste-to-energy facilities, electric generating units, and other stationary combustion and non-combustion sources.

New rules that will require the reformulation of household products and industrial coatings will reduce emissions of some hazardous volatile organic compounds, many of which are carcinogens. However, in order for some of these products to maintain their effectiveness, alternative chemicals containing other (albeit less toxic) HAPs may need to be used in the new formulations; negating the overall HAP reduction. The Industrial Boiler MACT (Maximum Achievable Control Technology) and the Clean Air Mercury rule will result in improved facility HAP emission estimates yielding a more accurate state HAP inventory. However, due to the level of control currently applied at facilities affected by these rules, neither will achieve much in the way of HAP reductions. The plywood MACT may result in HAP reductions since both major facilities in this sector are planning upgrades to their process equipment and boilers to meet the requirements of the plywood MACT. This past spring, EPA requested that the emissions standards and the compliance dates in the Industrial Boiler MACT and the Plywood MACT be vacated. This was based on the premise that the process used to develop these MACTs as used to develop the recently vacated Brick MACT. On June 8th, the court issued an opinion to vacate the Industrial Boiler MACT rule in its entirety. The Boiler MACT will remain in effect until the court issues a mandate. In the meantime, the Plywood MACT has *not* been vacated and remains in place. EPA is still waiting to hear a decision from the court on this MACT and expects to hear back later this summer. New federal waste-to-energy regulations have been put in

place, but as Maine's regulations for these facilities were more stringent than the federal regulations, few changes need to be made.

As a result, the effect of new and pending regulation for these industrial sectors will provide some HAP reductions and better HAP emissions data due to increased monitoring and recordkeeping, but may have little impact on the overall HAP emission picture in the state.

Outdoor Wood Boilers

As sales of Outdoor Wood Boilers (OWBs) increased, so have the air quality complaints received by the DEP from Maine citizens. This subcommittee, in conjunction with the Science Advisory Subcommittee, researched the positions of other state and federal authorities as well as the American Lung Association and various manufacturers of OWBs. The subcommittees recommended an early action on OWBs, which the full ATAC subsequently approved. The position of the ATAC, that OWBs should be subject to immediate regulation to protect the health and welfare of Maine citizens, was forwarded to the Commissioner in December of 2006. The results of this research and the opinion of this subcommittee have been outlined in the attached Position Paper ([Hyperlink to Appendix B](#)) which also includes recommendations that should be included in an OWB rule. The Joint Standing Committee on Natural Resources received a copy of the position paper on May 8. The committee reviewed various bills pertaining to OWBs (LD 128-5/16 dead, LD 1551-5/16 dead, & LD 1824- 5/8 voted OTP with amendments).

Low Sulfur Heating Oil

The Mobil Source Subcommittee forwarded to this subcommittee an option of using low sulfur heating oil to reduce HAP emissions, specifically sulfuric acid and other HAPs in particulate form. However, a new state regulation mandating the use of low sulfur fuel oil for both on and off-road mobile applications will be implemented by 2013. The subcommittee did not reach consensus on a recommendation for the use of low sulfur heating fuel as a short-term strategy at stationary sources due to short-term cost implications however this option remains a viable long-term HAP reduction strategy for this sector.

Energy Conservation

The subcommittee is exploring the HAP reduction potentials from energy conservation projects. A survey was conducted of several large industrial facilities in the state asking them to outline any energy conservation projects they have undertaken in recent years and the energy benefits (power, fuel, reduced waste) that they have seen as a result. Appendix C displays the results of this survey and the energy benefits the facilities have seen. The reduction in fuel and power usage has a direct and positive effect on the HAPs associated with fuel burning and power generation. In addition, the facilities have seen economic benefits from the reduced fuel and power consumption. The EPA has made this subcommittee aware of energy conservation seminars currently being conducted in other states. Similar seminars have been held in Maine for sources. Therefore, based on this information, the subcommittee makes the following recommendations.

1. The subcommittee recommends that the full ATAC's HAP reduction plan include the DEP promoting energy conservation efforts for all stationary sources, where it is practical and has a low cost or results in a net savings.
2. The subcommittee recommends that Maine DEP, EPA and others work together to help sources conserve energy by establishing a forum of interested stakeholders to determine the information and support most needed by the regulated community to get energy conservation projects implemented.

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Appendix A:
Acrolien Test Data

Acrolien Stack Testing

Facility	Date Tested or Scheduled	Test Method	Results ppm	Results lb/hr	Results lb/MMBtu
GP - Phillips, WI	Feb-05	-	-	0.144	4.00E-03
Domtar	Jun-06	CARB 430M	<2.07e-2	<2.33E-02	-
Boralex Stratton	Aug-06	CARB 430M	2.00E-04	4.00E-04	-
	Nov-06	CARB 430M	6.41E-04	1.03E-03	-
Boralex Livermore Falls	Aug-06	CARB 430M	9.00E-03	5.20E-03	-
	Nov-06	CARB 430M	2.46 E-7	2.16E-04	-
MERC	Aug-06	EPA-OO30	-	<1.61E-03	-
Greenville Steam	Dec-06	-	-	1.36E-02	6.02E-05
SAPPI Somerset	May-07				
Lincoln P&T	Jul-07				
Huber	Jun-07				
PERC	Sept-07				

Appendix B:
[Hyperlink to
Outdoor Wood Boiler
Position Paper](#)

Appendix C: Energy Conservation Survey

Effects of Energy Conservation Projects at Various Maine Industrial Facilities

<u>PROJECT</u>	<u>ENERGY SAVINGS</u>	<u>HAP REDUCTION</u>
<ul style="list-style-type: none"> • Installing raw water pump variable frequency drive and replacing 300 HP motors with 150 HP 	<ul style="list-style-type: none"> • Reduce electric usage by 1.6 million KWH/yr 	<ul style="list-style-type: none"> • See Below
<ul style="list-style-type: none"> • Optimization of recausticizing efficiency in recovery boiler 	<ul style="list-style-type: none"> • Reduction in steam usage and resulting savings of 207,000 gallons/yr residual oil 	<ul style="list-style-type: none"> • 1.9 Tons
<ul style="list-style-type: none"> • Replacing pumps in digesters to waterless packing 	<ul style="list-style-type: none"> • Reduces water use, and reduces residual oil use by 560,000 gallons/yr 	<ul style="list-style-type: none"> • 5.15 Tons
<ul style="list-style-type: none"> • Optimize energy recovery system in digesters by replacing flash liquor cooler 	<ul style="list-style-type: none"> • Reduces water use and reduced residual oil use by 686,000 gallons/yr 	<ul style="list-style-type: none"> • 6.31 Tons
<ul style="list-style-type: none"> • Upgrade boiler sootblower nozzles 	<ul style="list-style-type: none"> • Reduces steam usage resulting in savings of 441,000 gallons/yr residual oil 	<ul style="list-style-type: none"> • 4.06 Tons
<ul style="list-style-type: none"> • Decrease run times on refiner motors and install timers on agitators 	<ul style="list-style-type: none"> • Reduces electric usage saving 2.1 million KWH/yr 	<ul style="list-style-type: none"> • See Below
<ul style="list-style-type: none"> • Refiner upgrade to paper machine 	<ul style="list-style-type: none"> • Decreased electric usage by 0.9 million KWH/yr 	<ul style="list-style-type: none"> • See Below
<ul style="list-style-type: none"> • Upgrade pulp condensate recovery system 	<ul style="list-style-type: none"> • Reduces steam usage resulting in savings of 231,000 gallons/yr residual oil 	<ul style="list-style-type: none"> • 2.13 Tons
<ul style="list-style-type: none"> • Upgrade D2 Medium Consistency Pump 	<ul style="list-style-type: none"> • Reduces electric usage by 0.65 million KWH/yr and reduced steam use saves 319,200 gallons/yr residual oil 	<ul style="list-style-type: none"> • 3.0 Tons, See Below

- A total HAP reduction of 26.2 tons was achieved through reduced residual oil combustion.
- A total of 5.25 Million kWh/yr were saved from these energy conservation projects. The HAP reductions as a result of these savings will vary with boiler type, generator type, and fuel combusted.