

Western Forestry Leadership Coalition Issue Brief



Biomass Air Issues 4/23/08

Much attention has been placed on the utilization of woody biomass for energy purposes to help solve our collective western forest health problems. This issue brief offers some lessons learned from a Fuels for Schools and Beyond example dealing with woody biomass air emissions hurdles.

Background on the Issue:

In the Fall of 2006 the EPA established new rules for PM_{2.5} (particulate matter smaller than 2.5 microns) based on research indicating that at a certain level PM_{2.5} causes a major risk to human health, especially small children, the elderly and cardiopulmonary impaired individuals.

A year later, in the Fall of 2007, the EPA modeled the air emissions to better characterize and understand the impacts on ambient air quality and the impacts at ground level (public health). Stack testing was commissioned via the Fuels for Schools and Beyond (FFSB) program for the Darby School Complex in Darby, MT in 2005. The EPA used these results and then crunched their numbers in a dispersion modeling program. The Complex is heated with a biomass heating system and is part of the FFSB program. The US Forest Service, primary funders of the project, along with the Montana State Forestry were made aware of the EPA modeling in December, 2007 and requested a copy of the results, which were not provided until mid-February, 2008.

About the Darby Project: The Darby School Complex in Darby, Montana is home to a new form of heat that is touted as a prototype for others to follow. Much of the wood chip fuel for Darby is from restoration thinning and hazardous fuel reduction in the wildland urban interface. Engineered to tie into the existing heating system, the new biomass burner in Darby replaced two steam-operated boilers and one hot water boiler which ran at 265 HP, which will save the community \$100,000+ during the '07-'08 heating season.



Stack from the Darby School Complex. A frigid day in February; all that can be seen is a small trail of steam.

Results of EPA Modeling: The EPA's first round of results indicated local ambient levels of PM_{2.5} to be above the desired threshold. This was brought to the attention of the USFS whom then requested a copy of the results. The results contradicted previous modeling done by the MT DEQ staff modeling of numerous other projects in MT. Upon analyzing these new results a significant mistake in the modeling was found. In mid-February of 2008, the USFS discovered that the EPA had modeled the *wrong stack height*, 30' instead of 50'. **The results with the correct stack height show no problem for PM_{2.5}; the children at the school are not and were never at risk.** Unfortunately, the original, flawed results have been communicated to a substantial number of personnel within EPA from the across the country. Bad news is hard to retract even if it is incorrect.

Key Findings/Messages:

1. This is a multi-layered issue that requires attention at all layers based on the development of strong professional and partner relationships.
2. These combustion systems can be part of the solution to air quality issues by providing much cleaner alternatives to open burning and reducing emissions from wildfires when they do come through areas that have been thinned or treated.
3. EPA has many different divisions including solid waste management, energy efficiency and renewable energy, greenhouse gas emissions; which may result in conflicting objectives within EPA related to wood-to-energy.
4. Regional level organizations such as WESTAR and NESCAUM are coalitions of states in the west and northeast that deal with air resources.

Actions/Recommendations:

1. At the national level, the USFS is working with EPA to gain a better understanding and dialogue pertaining to this topic. Key players for the USFS include: Marcia Patton-Mallory, Pete Lahm, Ed Gee, Steve Yaddof, Julie Tucker, Ann Acheson, and David Atkins, the FFSB program manager.
2. At the state and regional level, Regional Foresters, Coop Forestry, State Foresters and their staffs can strengthen their working relationships with state air regulators and regional EPA offices. The state-level is where the rubber meets the road!
3. State and Federal Alliances: Currently, Yaddof and Atkins are working together to develop a national alliance or coalition of private sector interests, NGOs and government entities around wood heat. One primary topic would be air quality.
4. Develop a cost-effective control technology that can efficiently remove PM2.5 from wood boiler exhaust streams. One option is to have the EPA and USFS identify a representative from each organization to work on a solution to this problem, pursue grant funding and partnerships within the industry, (WESTAR, NESCAUM, etc.) to make this happen within 24-36 months. Options for involvement include the USFS's Forest Products Lab in Madison, WI, and the Technology and Development Centers at San Dimas, CA and Missoula, MT.

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