

**Summary of Stakeholder Comments on the Residential Wood Control Analysis
Technical Support Document (TM#3)**

Prepared September 18, 2006, Responded September 26, 2006

The Residential Wood Control Analysis Technical Support Document was emailed to the MANE-VU Technical Support Committee on August 25th and the replies were due by September 22nd. Four stakeholders commented on the document and their comments are summarized here. Comments were received from the following groups: the Delaware Department of Natural Resources and Environmental Control via Jack Sipple, the Connecticut Department of Environmental Protection via Dave Wackter, the MANE-VU Technical Support Committee, and the Mid-Atlantic Regional Air Management Association via Angela Crenshaw.

General Comments

MARAMA noted that nowhere in the document are the various types of devices explained. MARAMA requested that OMNI include a list and descriptions of the various types of devices mentioned in the document.

Descriptions of the various devices used in Task 5 have been sent to MARMA and will be included in Section 1 of the final draft of Task 5.

MARAMA was also concerned about the way emissions from vent free devices were handled. In the case of vent free devices the exhaust is released into the room and not outside. This makes the efficiency of these devices very high because the emissions are not vented outside into the environment, but stay inside. OMNI stated that these devices should be used for aesthetic purposes and not primary or secondary heating due to their negative impacts on indoor air and other damage to home and health they may cause.

OMNI did not say that vent free devices should be used only for aesthetic purposes. Vent free devices are primarily meant for aesthetic use and secondary heating, but not for primary heating.

Jack Sipple of Delaware wondered why vent free devices are even listed as an option. Should they be excluded from the control analysis?

There is a market for vent-free devices, which means they are being purchased and used in households. On the order of two hundred thousand vent-free devices are sold annually in the U.S. Vent-free devices can be, and are being, used for secondary heating, and as such they should be included in the pollution reduction cost benefit analysis. While there is concern and debate about indoor air quality and moisture, there have been credible reports concluding that if used prudently these problems are minimal. It is well outside the scope of this project to enter into that debate and to make judgments onto the appropriateness of their use for that reason. OMNI did address this issue in the report by acknowledging that there is concern about indoor air quality and moisture. It also

should be noted that one of the pollution reduction scenarios included in OMNI's report is for the aesthetic use of fireplaces, which clearly covers the normal usage of vent-free appliances.

Jack Sipple of Delaware also stated that administrative costs that go along with implementing these strategies should be included in the analysis.

Determining the administrative costs for regulatory agencies is beyond the scope of work. Individual agencies are best suited for estimating their own administrative costs, which will vary from agency to agency depending on their organizational structure. OMNI was also verbally directed by MARAMA to focus the limited resources available on a technical cost benefit analysis for households rather than a RACM analysis for the purpose of supplying information so that each regulatory agency could develop their own RACM for residential wood combustion. A RACM analysis is where administrative costs would best be included. However, even most RACM analyses with which OMNI has worked do not include administrative costs.

Dave Wackter of Connecticut stated that it is difficult to compare pollutant emission between different appliances. Wackter requested that emissions of pollutants from each appliance (i.e., in grams per BTU) be included in the analysis.

This has been done, but we chose not to mix English and metric units (which is not considered acceptable for technical literature), so it is reported as grams per million Joules rather than grams per BTU. Please see the rows of the cost benefit tables in Sections 3 and 4 titled "pollutant (g/input MJ)", where pollutant is either PM, VOC, CO, NO_x, or SO₂. These rows show the emissions for each appliance in grams / input MJ, and to find the g/Btu simply divide the g/input MJ by 947.817 Btu/MJ.

The Technical Support Committee suggested that a clear definition of efficiency be included in the document.

A concise definition of efficiency will be included in the final document following the appliance descriptions in Section 1. There are different standards and methods used to measure efficiency, but in general efficiency is the percentage of available heat that is put into the home divided by the available heat content of the fuel. With the exception of some modern "condensing" gas furnaces, it is assumed that water leaves the stack in the vapor phase, and thus the energy associated with state change of any water, either in the fuel or created by combustion, is not available for heating. The vast majority of the available heat that is not used for heating the room during combustion is exhausted out of the stack with the heated stack gases, water vapor, and particles created from combustion. A small amount of unutilized energy is associated with the incomplete combustion of fuel, which also reduces efficiency. Therefore, the more available heat that is kept in the room during combustion and the more complete the combustion, the higher the efficiency of the device, and visa versa.