Clean Air Washington

The Clean Air Washington Act of 1991 sets a comprehensive new course toward cleaner air throughout the state.

Wood Stove and Fireplace Smoke Control

The problem

Nearly half of Washington's households have wood burning devices. This reflects the rapid growth in the use of wood stoves, pellet stoves, fireplace inserts and fireplaces over the past 15 years.

About 12 percent of Washington's air pollution comes from these sources of wood smoke. Woodburning devices are the number one source of combustion particulate emissions (soot and other tiny particles). The problem is especially severe because wood heat is used only half the year.

Wood smoke is a neighborhood pollution problem. Here's why:

- The winter heating season is a time of frequent periods of air stagnation and inversion. As a result, wood smoke is trapped close to the ground in residential areas.
- Up to 88 percent of the wintertime particulate pollution in residential neighborhoods statewide is from wood smoke.
- During periods of heavy wood heat use, air pollution in many residential areas exceeds the federal health standard for particulate pollution.
- Recent studies show that residents of homes heated with wood have increased respiratory problems and decreased lung function. Smoke particles also invade neighboring homes.
- New research shows declines in children's lung function in homes with wood stoves and in neighborhoods with high levels of wood smoke pollution.
- Wood stove use is highest during times when people are at home and in their neighborhoods, thus increasing the number of people exposed to this pollution.

Wood heat is the most polluting mode of home heating. Newer, certified stoves pollute less than older models, but only 15 percent of the wood stoves in use in Washington are certified.

The current program

- **Wood fuel must have a moisture content of no more than 20 percent.** Wood that is split then dried for at least a year usually meets this requirement.
- **Prohibited materials.** Garbage, treated or painted wood, particle board, plastics, rubber, waste petroleum products, animal carcasses, asphalt products, paints, chemicals, or any substance which normally emits dense smoke or obnoxious odors may not be burned in a wood stove or fireplace.
- **Smoke density is restricted.** The maximum smoke plume opacity is 20 percent (if you can see any smoke from your chimney it is probably greater than 20 percent). Exception is made for stoking and starting time.

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- **$30 fee on the sale of new wood stoves.** This supports wood stove education and enforcement programs.
- **Ban on the installation of new or used uncertified stoves.**
- **Requires non-wood heat sources** in new or substantially remodeled construction in urban growth areas or nonattainment areas for particulates after July 1, 1992.
- **Sets conditions** under which a local air pollution control authority or Ecology may prohibit the use of uncertified stoves. The conditions require the U.S. Environmental Protection Agency to find and show in writing that an area fails to meet federal air quality standards.

Only Washington State level certified stoves may be sold at retail. Stack emissions of certified new models are limited to:

- 4.5 grams of particulates per hour for non-catalytic models.
- 2.5 grams per hour for catalytic models.
- Stoves with at least a 35-to-1 air/fuel ratio (almost all are pellet stoves) do not require certification to be sold in Washington.

Local burn bans are called when wood smoke pollution is measured at unsafe levels. This is a two-stage plan:

- ***Stage 1:*** The use of all uncertified wood heating devices is prohibited when pollution approaches unhealthful levels (an average of 75 micrograms of fine particulates per cubic meter of air over 24 hours, or an average of 8 parts per million of carbon monoxide over eight hours).
- ***Stage 2:*** All wood heating is prohibited when pollution reaches a higher threshold (a 24-hour average of 105 micrograms of fine particulates per cubic meter of air).

Homes with no other source of adequate heat are exempt from these bans.

Changes to come under Clean Air Washington

- **Sets tighter emission standards** for new fireplaces built and sold in Washington:
  - Fireplaces must meet certification standards comparable to the 1990 wood stove standards by 1997. Fireplaces not meeting these standards may not be sold in Washington after 1996. The State Building Code Council will devise fireplace construction and testing standards to meet this emission requirement.

For more information

Ecology has prepared fact sheets on each major element of Clean Air Washington. Any or all of these are available from the Washington State Department of Ecology, PO Box 47600, Olympia, WA 98504-7600.

If you have special accommodation needs or require this document in alternative format, please call Judy Beitel at (360) 407-6878 (voice) or (360) 407-6006 (TDD only).