

Workgroup Recommendations and Other Potential Control Measures
Homes and Restaurants Workgroup

HR011 – Require Owners of Wood Burning Fireplaces to Change-over to Natural Gas Fireplaces and Allow Only Natural Gas Fireplaces in New Construction

Description

Wood burning fireplaces are different from wood or pellet stoves in that they are primarily used for aesthetic purposes only and do not provide an appreciable source of heat for a home. **This white paper only pertains to fireplaces and fireplace inserts.**

Wood burning fireplaces emit much higher amounts of particulate than natural gas or propane fireplaces. The current USEPA standard for fireplace inserts is 7.5 grams of particulates / hour, while natural gas or propane fueled fireplaces produce no appreciable quantities of particulates.

The Department could offset growth of particulate emissions from fireplaces by requiring that only gas fireplaces be allowed in all new construction or could lower existing levels of particulates by requiring all persons wishing to change-out their wood burning fireplaces to convert to natural gas or propane. In either case, other measures, like new lower standards for wood burning fireplaces and wood stoves, would still be needed to lower existing emissions from wood burning activities.

Implementation

New Jersey could require only natural gas or propane fireplaces in new construction, rather than wood burning fireplaces, in all areas where natural gas supply is available. This may need to be done through Legislation, rather than regulation, as the State's Air Pollution Control Act excludes regulation of one or two family residences. In areas where natural gas pipelines do not exist, an outdoor propane or liquified natural gas tank could provide the flames for the fireplace aesthetics.

Options for implementation include:

- Any new homes or new construction would be prohibited from installing a wood burning fireplace if natural gas is available in an area, or
- All new homes or new construction would be prohibited from installing a wood burning fireplace regardless of natural gas availability, or
- Only new developments over a certain size (5 or 10 units) or in certain areas (i.e., non-attainment area counties) would be required to comply with the above.
- Also, homeowners changing out their wood burning fireplaces in non-attainment counties could be required to convert to natural gas if natural gas supply is available in the area. Or, if natural gas supply is not available in the

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non-attainment county, be required to use an outdoor propane or liquified natural gas tank for fuel supply.

It is recommended that Legislation be sought to require that only natural gas fireplaces be allowed in all new construction in any area where natural gas supply is available. And, if natural gas supply is not available in a non-attainment county, anyone wishing to add a new fireplace, or to replace their old wood burning fireplace, would have to use propane or liquified natural gas as the fuel. Wood burning fireplaces would still be allowed in any area that does not have natural gas supply already available and is not in an area (or county) in non-attainment of the PM air quality standard. This will ensure that the air quality in our non-attainment counties does not get any worse than existing levels. It will also reduce the transport of particulate emissions to other areas.

Homeowners wishing to change-out their wood burning fireplaces in all areas not attaining the PM standard would be required to use liquified natural gas or propane as their fuel. This will lower existing particulate levels in these counties.

Cost

There is no appreciable cost difference between a natural gas and wood burning fireplace. It would be more expensive for the installation of a liquified natural gas or propane fireplace as additional piping is needed to supply the gaseous fuel.

Cost will vary depending on the circumstances and how this measure will be implemented. If only natural gas fireplaces are allowed in areas already supplied by natural gas, then builders choosing to design homes with fireplaces may have to heat the new homes with natural gas, rather than with another fuel. This will avoid the cost of building duplicate heating supply systems (e.g., running supply lines for the natural gas fireplaces and installing home heating oil tanks for the furnaces). Extra, but minimal, cost in these circumstances may result as additional work would be needed to connect the natural gas fireplace to its supply where no additional hook-up would be needed to install a wood-burning fireplace.

To offset costs, a program providing rebates or offsets of costs from natural gas suppliers should be investigated. One South Jersey supplier already offers a rebate for changing over to natural gas but the two largest North Jersey suppliers (JCP&L and PSE&G) do not.

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Also, the measure for new construction would not affect a builder if they were not planning to install a fireplace for aesthetic value in the first place. New homes with fireplaces are expected only in the high-end housing market so this requirement would not add appreciably to the cost of the new home. Some homeowners and builders may opt not to install a fireplace rather than worry about installing the gas supply to the home.

Effectiveness

The measure for new construction will not lower existing particulate emissions from fireplaces or wood stoves but it will offset growth in particulate emissions from new construction.

Requiring wood burning fireplaces to be replaced with gas burning fireplaces will be a slow process. It is thought that change-out of fireplaces is very slow with less than 1% of the fireplaces in existence changed-out each year. It would take a very long time to change-out all eligible fireplaces in an area unless other incentives such as a rebate program from natural gas suppliers is offered.

This program would need to be cross-referenced in the State's building codes so as to ensure inspection at the time of building or replacement.

Pros

- Ensures that growth from this segment of the PM inventory does not increase in non-attainment areas.
- Some people may readily accept the idea of using propane and natural gas, especially if a rebate from the natural gas supplier is offered. Benefits to the homeowners include fewer odors in their home, less ash and waste disposal, simpler starting and stopping of the fireplace, and a decreased need to purchase and maintain a supply of wood.
- Creates more rapid turnover of fireplaces to lower particulate levels.

Cons

- Does not ensure that the dirtiest units are removed as participation depends upon a person's desire to change-out their fireplaces.
- Legislation would be needed.
- May encounter public resistance as some people may not wish to convert because they may have a ready supply of wood, may like the aroma of wood burning, may not

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wish to purchase natural gas or propane, or have other personal reasons for keeping a wood stove in their home.

- Some consider the supply of wood to be a renewable resource, and slowing the burning of wood creates an added dependence on fossil fuels.
- Some people may delay changing out their fireplaces as they would not want to have a propane tank on their property.
- Outdoor propane tanks could lack aesthetic appeal.

Related White Papers

- HR002 – Set More Stringent Standards for Wood Stoves And Fireplace Inserts
- HR004 – Wood Stoves and Fireplace Inserts Change-out Programs