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The Invisible Environment Fact Sheet Series

The Clean Air Act and Cooling Appliances

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History and Current State of the Clean Air Act

The air we breathe has always been taken for granted. We don't see it, we can't touch it, and unless we are a specialist, we can't really measure it or work with it. Yet, it is one of the most abused resources we have. With the increased use of automobiles, the heavy release of sulfur dioxide, nitrous oxides, and other harmful pollutants released into the atmosphere as a result of energy generation, air pollution has finally become one of the top concerns among scientists, physicians, politicians, and society in general.

There is a lot to educate ourselves on when it comes to air pollution. First and foremost, it can make you sick. Burning eyes, sore throats, and shortness of breath are some of the minor symptoms that result from pollutants in the air. Along a more serious note, some chemicals that have been found in our air can cause cancer, birth defects, brain damage, and lung damage. Even worse, accidental releases of some pollutants may even cause death. Air pollution also harms the environment as well as damages property and can even make flying a plane hazardous in some areas where visibility is reduced as a result.

The first official act by Congress was the Air Pollution Control Act of 1955. This basically stated that research and technical assistance was to be provided relating to air pollution control. The government provided \$5 million for five years to the Public Health Service to work on this research. Not much happened besides growing awareness. Throughout the 1960s, the act was amended and research continued. Standards for auto emissions were developed in 1965. Finally, in 1970, Congress rewrote the entire act

and highlighted specific areas of interest, moving them to the forefront of the research timeline. Ambient air quality standards, performance standards, lower auto emissions, and even noise pollution in larger cities were all recognized as major issues that had to be tackled immediately. It also allowed private citizens to take legal action against any organization, government, or corporation that was in violation of any of these standards. Criticized as being overly ambitious, the Clean Air Act went through another major overhaul in 1990, and, with the exception of some changes in 1997, that is where we stand today.

In 1990, Congress recognized that many of the programs established within the Clean Air Act had fallen dormant, and once again, it needed to be completely rewritten. With this rewrite, the government empowered individual state governments to dictate the best course of action for their individual areas. The EPA sets certain air pollutant limits and the individual states can pose tighter restrictions if they feel it is necessary, but cannot go below what the EPA has set. The only revisions that have been made to the act since 1990 was in 1997 when the EPA reviewed smog levels around the country and developed a program that focuses on controlling regional haze caused largely by particulate matter.

Your Home Cooling Appliances

Ozone-depleting gases such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) are commonly used as refrigerants in air conditioners, dehumidifiers, freezers, and refrigerators. They cause little harm when contained in appliances,

but scientists fear that they may contribute to the growing depletion of the earth's ozone layer when released into the atmosphere. The ozone layer blocks many of the sun's ultraviolet rays. "Holes" in the ozone layer are blamed for increased incidence of skin cancer and eye problems such as cataracts.

In an effort to control the release of refrigerant gases, Section 608 of the Clean Air Act addresses the problem of recycling the gases contained in home appliances such as freezers, refrigerators, and air conditioning units. The process used to recover the refrigerant gases varies depending on the type of appliance. Usually, a special metal recovery tank with a vacuum hose is used to remove the gases from the appliance. When full, the tank is taken to a centralized collection point and eventually transported to a reclaimer who processes the used refrigerant to near-virgin quality or a minimum of 99.5 percent purity prior to being available for resale. The sale of product less than the required minimum is illegal and can only be returned to the system from which it was recovered or sent for destruction. Ninety-five percent of the gases are separated, rebled, and used as reclaimed refrigerant. The other 5 percent is water and oil. Many waste haulers and scrap metal recyclers are hesitant to accept appliances with refrigerants. Those who do accept the appliances are likely to charge a fee for removing the refrigerant (usually \$15 to \$60).

In the long run, recapturing refrigerant gases should help prevent increased destruction of the earth's ozone layer. As rules for more programs are developed, disposal of appliances with refrigerant gases should become

much easier. Until that happens, citizens should contact their local waste hauler, recycler, or appliance store for information on disposal programs in their area. For more information on the Clean Air Act, contact the Stratospheric Ozone Protection Bureau of the U.S. Environmental Protection Agency at 1-800-296-1996.

One more step in reducing the amount of fossil fuels released into the atmosphere was taken in January 2006. Air conditioners are one of the most used appliances to cool our households. As we all know however, they are expensive to buy and run, and they released some of the more harmful gases into the atmosphere. Starting January 23, 2006, the Department of Energy released new standards that all new air conditioners must follow. The SEER rating (Seasonal Energy Efficiency Rating) is to be bumped up to a minimum of 13 from the previous standard of 10. This alone increases their energy efficiency by 30 percent. Not only will this new rating system save consumers money, but it will also reduce the amount of fossil fuels released into the environment and will limit air pollution. The construction of 39 400-megawatt power plants has been avoided by adopting the SEER 13 standard, which has reduced smog forming nitrous oxides (NO_x) emissions by up to 85,000 metric tons and cut greenhouse gas emissions (the gases responsible for global warming) by up to 33 million metric tons. Power plants release huge amounts of greenhouse gases and the pollutants that cause smog, soot, and acid rain. At a time when many areas throughout this nation are struggling to improve their air quality and public health, the differences in avoided emissions have been significant.

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