

CONTROLLING INDUSTRIAL AIR POLLUTION EMISSIONS IN DEVELOPING ECONOMIES

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ABSTRACT

Actually reducing the levels of air pollution in cities seems to be difficult. Emissions from industry are reasonably well controlled, although this could change with deregulation. Because motor vehicles are the major culprits, it will be necessary to make some hard decisions about restricting their use. Inner city living should be encouraged to slow the continuing growth of our cities and associated road building. Utilizing public transport needs to be encouraged. New rules limiting diesel exhaust emissions seems to have bright future in controlling the air pollution. The future holds good for non-polluting renewable source of energy to solve the problem of air pollution. This paper attempts to highlight the impact of air pollution on health hazards of the living organisms. This paper also discusses various initiatives taken by US- Environmental Protection Agency (EPA) in controlling air pollution throughout the world.

INTRODUCTION

The air we breathe can be contaminated with pollutants from factories, vehicles, power plants, and many other sources. These pollutants have long been a major concern because of the harmful effects they sometimes have on people's health and the environment. Their impact depends on many factors, including the quantity of air pollution to which people are exposed, the duration of the exposures, and the potency of the pollutants. The effects of air pollutants can be minor and reversible - such as eye irritation or debilitating - such as aggravation of asthma and even fatal causing cancer.

Prime Sources of air pollution in developing countries

There are two major sources of air pollution - vehicular emissions and industrial emissions. However, these are mainly concentrated in the cities. In addition to these usual sources of fuel, spent or used rubber wheels of vehicles are also burnt, which emit black carbon and toxic gases. These are hazardous for health. Emissions caused by these sorts of practices sometime smother the process of natural rate of purification of the local atmosphere-giving rise to severe episodes of local air pollution. Per capita energy consumption is increasing with time, which affects the air quality indirectly.

Rapid urbanization is an indispensable part of the process of economic development and its rate can be indicated by the large population growth in urban areas. With increased urbanization, the number of vehicles is also increasing rapidly and contributing to more and more air pollution. In the urban areas ambient air quality is dependent on many factors like air movement, traffic volume, congestion, emissions from motor vehicles, and suspended dust particles. Various other activities related to the externally high population density also result in severe air and other forms of pollution.

Indoor Air pollution also equally dangerous

The U.S. Environmental Protection Agency (EPA) claims that indoor air can be as much as 50 times more polluted than outdoor air. We spend approximately 80% of our lives indoors, half of that in our own homes. Studies have proven that indoor air contains chemicals, gases and odors as well as particles such as mold spores, pollen and dust mites etc. This can cause symptoms such as asthma, allergies, and a host of respiratory and general health difficulties. More recent studies by the American Heart Association have linked air pollutants to cardiovascular disease and even cancer and diabetes. Further studies have linked indoor air quality with children's learning disabilities as well as to the loss of significant productivity in the work place.

Controlling air pollution: the maximum achievable control technology (MACT) standards approach

The Clean Air Act directed EPA to use a *technology-based* and *performance-based* approach to significantly reduce emissions of air toxics from major sources of air pollution, followed by a *risk-based* approach to address any remaining, or residual, risks. Under the *technology-based* approach, EPA develops standards for controlling the routine emissions of air toxics from each major type of facility within an industry group. EPA was assigned to set net emission standards for hazardous air pollutants (NESHAPs) within listed source category and to sharply reduce the emissions of 189 hazardous air pollutants listed in 1990 Clean Air Act and hence these standards came into forms of maximum achievable control technology (MACT) standards. These are based on emissions levels that are already being achieved by the better-controlled and lower-emitting sources in an industry. This approach assures citizens nationwide that each major source of toxic air pollution will be required to employ effective measures to limit its emissions. The MACT standards is-

sued by EPA over the past 10 years have proven extremely successful. Once fully implemented, these standards will cut emissions of toxic air pollutants by nearly 1.5 million tons per year. Thus, *technology-based* approach clearly produced real, measurable reductions. In the second phase, EPA applies a *risk-based* approach to assess how these *technology-based* emissions limits are reducing health and environmental risks.

Progress made by EPA in reducing toxic air pollution

As on August 2000, EPA has issued 45 air toxics MACT standards under Section 112 of the Clean Air Act Amendments. These standards affect 82 categories of major industrial sources, such as chemical plants, oil refineries, aerospace manufacturers, and steel mills, as well as eight categories of smaller sources, such as dry cleaners, commercial sterilizers, secondary lead smelters, and chromium electroplating facilities. These standards reduce emissions of over 100 different air toxics. When fully implemented, all of these standards will reduce air toxics emissions by about 1.5 million tons per year- almost 15 times the reductions achieved prior to 1990. These summaries describe the sources for which final rules have been issued as of August 2000, the types of pollutants the sources emit, and how EPA's rules are reducing their emissions. EPA has developed air toxics standards that achieve the required reductions in air pollution while providing regulated communities with as much flexibility as possible in deciding how to comply with the standards, e.g., under a flexible regulation, industries reduce their emissions by redesigning their processes, capturing and recycling emissions, changing work practices, or installing any of a variety of control technologies. Flexibility helps industries to minimize the cost of compliance and encourages pollution prevention. To provide flexibility, EPA permits every effort to develop standards that are based on performance measures rather than specific control devices and that allow for equivalent alternative control measures.

Environmental protection agency act controlling air pollution in Ireland

For the Integrated Pollution Prevention Control (IPPC) EPA grants licensing of large or complex industries with significant polluting potential. The EPA is responsible for monitoring emissions from large or complex industries with significant polluting potential and dealing with any infringements of the terms of the license. The local authorities play an integral role in preventing and combating air pollution. This includes:

1. Assessing compliance with the relevant legislation
2. Conducting research into the causes, extent and prevention of air pollution
3. Dealing with complaints with regard to air pollution
4. Enforcing the ban on the marketing, distribution and sale of banned fuel
5. Establishing educational programmes about pollution and its prevention
6. Licensing certain categories of industry
7. Monitoring of air emissions in the area
8. Supporting in research related to air pollution.

Penalties under the air pollution act

Local authorities have the power to enforce penalties for infringement of the Air Pollution Act (1987). Anyone who is found to be in breach of the provisions of the Act is guilty of an offence and can face the following:

For a summary conviction in the district court

A fine not exceeding 1,270 euro (as well as a fine not exceeding 127 euro for every day on which the offence is continued) or imprisonment for any term not exceeding six months.

On conviction or indictment in the district court

A fine not exceeding 12,700 euro (as well as a fine not exceeding 1,270 euro for every day on which the offence is continued) or imprisonment for any term not exceeding two years.

A local authority can serve a notice to anyone it decides is breaking the law under the Air Pollution Act. This notice will specify what corrective measures must be taken to prevent air pollution and give a time limit for these measures to be taken. While local authorities are only responsible for enforcing the Air Pollution Act in their own area, they can prosecute premises that are polluting this area, even if the pollution is coming from a source outside of their jurisdiction.

DISCUSSION

Air is more important than water because without water, a person can survive for days, but without air no one can survive more than a couple of minutes. Air pollution is one of a variety of man-made environmental disasters that are currently taking place all over the world. Air pollution may exist in the atmosphere as gases, liquid drops, or solid particles. Recently, air pollution has received priority among environmental issues in Asia, as well as in others parts of the world. Exposure to air pollution is the main environmental threat to human health in many towns and cities. Particulate emission is mainly responsible for increased death rate and respiratory problems for the urban population. The ambient atmospheric condition has progressively deteriorated due to the unprecedented growth in the numbers of motor vehicles and continuous housing and industrial activities. Industries are mainly concentrated in major urban areas and the air pollution problems are more acute in these areas. Apart from unplanned industrial development in these areas, the severity of the pollution has increased mainly due to exhausts from two-stroke engine and diesel-run vehicles.

CONCLUSION

EPA Having bright future for reducing emissions of air pollution in developing countries

Presently, EPA is concentrating on reduction of emissions of toxic air pollutants on *technology-based* or MACT emission standards. In future, EPA plans to continue to work with industry, environmental groups, state, local

and tribal agencies and other interested groups to develop standards for the remaining source categories that will reduce air toxics emissions. To identify additional measures beyond the technology standards that may be needed to protect the public health and the environment from toxic air pollutants, EPA plans to use a more risk-based focus. EPA's future ongoing plans includes national air toxics assessment activities, residual risk standards, evaluation of the impacts of air toxics deposition, data-gathering on mercury emissions from coal-fired electric utilities, and implementation of an urban air toxics strategy. The need of the time is to apply all the above USEPA Maximum Achievable Control Technology (MACT) standards approach and technologies in developing economies.

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