

atmosphere. Smoke pollution from domestic, commercial, and industrial incinerators, boilers, and heating systems can be largely eliminated through improved fuel burning equipment and proper firing practices. Carbon monoxide and unburned hydrocarbons discharged from the gasoline-powered motor vehicles have been brought under partial control. In fact, through control devices or through process modification most sources of air pollution in the United States today can be brought under control.

None of this is to say that we can afford to be complacent about the presently available technology for controlling air pollution. There are some pollutants, like the nitrogen oxides, which today rarely, if ever, reach what are thought to be harmful levels in many regions of the country. We do not have adequate technology for controlling nitrogen oxides. There are some pollutants, like the sulfur oxides, which today almost constantly reach harmful levels in most of our metropolitan areas, and the increasing use of sulfur-bearing fuels for energy and other purposes will undoubtedly aggravate this problem in the years ahead. We have reached the prototype stage in one approach to controlling the sulfur oxides, but for the most part we can control sulfur pollution today only by using low-sulfur fuels. There are some sources of pollution, like the automobile, whose emissions we can today partially control, and the federally required national application of this control to new cars in the fall of next year will be a significant step in halting pollution from the motor vehicle. But the rapidly increasing number of automobiles will in the next two decades wipe out the gain from today's partial controls. Further, Mr. Chairman, we cannot be complacent about the attractiveness of much of the technology for controlling air pollution. Pollution controls generally do not increase the efficiency of industrial production or improve the quality of the product. In fact, since in our marketplace the focus is on minimizing costs and maximizing returns, present-day pollution controls, which add to costs and not to returns, are frequently considered an impediment by those who operate the sources of pollution. We can expect that this attitude will prevail as long as regulation of pollution varies from place to place, or until the technology of pollution control is developed to the point where control is not considered to be an economic impediment to industry.

In the testimony I have submitted for the record, I have included detailed discussion of the technology for control of the major sources of pollution with which we are concerned nationally. These are: motor vehicles; stationary combustion sources, with particular emphasis on the technology of sulfur removal from flue gas and fuels; petroleum refineries; steel mills; the chemical industry, both organic and inorganic and including the fertilizer manufacturing industry; foundries; and pulpmills. I will, therefore, skip over this portion of my testimony so as to use my remaining time to discuss with you the systems approach to air pollution control and, in broad terms to outline the extent of the Federal air pollution research and development program. This program is described in my written testimony in greater detail.

The air resource management or systems approach to air pollution control is most effective when coupled with a regional or what has