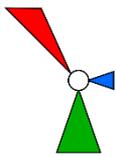


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<564/c>	<p>tolerable noise levels for all types of new equipment and machinery. The initial objective of the noise control programme was to reduce environmental noise everywhere to below 75 dB(A), a level at which there is a risk of hearing damage (Cherfas, 1980). 8.7 Problems Develop with the State Implementation Plans The 1970 Act required the EPA to prescribe NAAQSs which were not to be exceeded in any region more than one day per year, or during more than a limited period within that day (table 8.1). Primary or public health standards were aimed at protecting the most susceptible part of the population from adverse effects, with an adequate margin of safety being included, while the more stringent secondary standards were aimed at protecting public welfare, such as damage to vegetation, wildlife, materials, and so on. In 1971 the EPA promulgated NAAQSs for six 'criteria' pollutants, and the strict legislative timetable required states to submit implementation plans which would achieve primary standards for each pollutant by 1975, or, if the deadline was extended as the EPA was authorized to do, by 1977. Once primary standards were attained, the state was expected to attain the secondary standards 'within a reasonable time'. In contrast with the technological fixation which had previously dominated the control strategies of many states, the EPA stressed that the state implementation plan (SIP) should consider incorporating transportation controls to reduce the distance travelled by all vehicles, new and old alike. Suggestions included the promotion of mass transit systems, parking restrictions, staggered working hours, commuter taxes, and even petrol rationing. Land-use controls should also be examined. Economic incentives or disincentives such as pollutant emission charges or taxes should receive more attention than they had received previously. During emergency periods or times of air pollution episode potential, consideration should be given to temporarily closing polluting plants or requiring fuel switching to be adopted by larger industry. Having devised the SIP, the state had to present monitoring and modelling data indicating that its control programme would bring about the attainment of the primary NAAQSs. The models employed to develop the control programme vary from the simple 'proportional' or 'rollback' model which assumes, for example, that a region with sulphur dioxide levels twice the NAAQS will attain the standard if total sulphur dioxide emission in the region is halved, to more complex diffusion or dispersion models. Dispersion models predict ambient concentrations of pollutants from emission inventories of pollution sources, meteorological conditions, and topographical considerations (refer to section 7.2). Given the strict timetable for submission of the SIP and attainment of NAAQSs, it was not surprising that some states would face enormous difficulties, not least</p>
 <p>Key: Footprint ConEn1 Footprint ConEn2 Footprint ConEn3</p>	<p>the state of California</p> <p>. The seemingly impossible 1975 (or 1977 if extended as allowed under the Act) goal for attainment of the photochemical oxidant standard is highlighted by data for Los Angeles. In 1970 the Los Angeles County exceeded the California standard for oxidant (0.10 ppm) on 241 days of the year. Under the 1970 legislation, the</p>

country was required by 1975 (or 1977) to exceed the more demanding federal standard (0.08 ppm) on no more than one day per year! **Los Angeles** Air Pollution Control District believed that the **state** programme could, with no interference, achieve marked improvement in the level of photochemical smog by 1980, and that by 1990 the atmosphere would meet the ambient air quality standard (Krier and Ursin, 1977). Others were less optimistic, pointing out that population and industrial growth would offset the improvements being made. **California's** **SIP** was rejected by the EPA because it did not provide for attainment of the photochemical oxidant standard for **Los Angeles**. Following legal suits by citizens' organizations, the EPA reluctantly set out to devise an alternative plan. It increasingly realized that no technical measures could assure compliance by the extended 1977 deadline, and that since an adequate mass transit system could not be developed in time, only petrol rationing would lead to attainment. Petrol rationing of over 80 per cent during the smog season from May to October was suggested! Seemingly valid claims by the **Los Angeles County** that such a proposal was economically and politically unrealistic contributed to undermining the EPA's demands for maintaining strict attainment deadlines. Progress by **states** towards developing an acceptable SIP was further hampered by the Arab oil embargo of 1973. Several strategies were available to **states** to bring stationary sources into compliance with air quality standards. Land-use planning may be used to regulate the number and size of polluting sources within **any given area**; low-sulphur fuels may be employed; continuous control equipment may be installed (for example, flue gas desulphurization systems); or intermittent control systems may be used, such as switching to low-sulphur fuels during unfavourable meteorological conditions. Given these choices, **many states** opted to control sulphur dioxide emissions by regulating the maximum sulphur content of the fuel allowed to be burned. However, domestic supplies of low-sulphur oil were inadequate to meet the potential demand and the oil embargo of 1973 dramatically highlighted this problem. The increasing price of low-sulphur oil and the reluctance to rely upon imported oil in the future brought a growing demand by industry and by some politicians for the adjustment of the 1970 Act requirements in the light of economic and energy realities as well as technological practicability (Lundqvist, 1980). Subsequently, the Energy Supply and Environmental Co-ordination Act of