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EUR/ICP/CEH 079B(S)
8169B
ORIGINAL: ENGLISH

SUMMARY REPORT

Workshop on Air Quality Guidelines for Air Pollution Control Strategies in Western and Northern Europe

Château de la Muette, Paris
2-5 July 1991



1992

EUR/HFA target 21

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ABSTRACT

This, the third in a series of workshops held to follow up the publication of Air quality guidelines for Europe (AQG) in 1987, concentrated on the implementation of air pollution control strategies in western and northern European countries. Four subgroups addressed the issues of the AQG and national air pollution control strategies; the definition, identification and potential use of air quality indicators; priority hazardous pollutants for the year 2000; and the need for a revision of the AQG. The recommendations cover the need to reduce emissions, the full use of available experience in abatement measures, selection of substances for a revision of the AQG, the promotion and facilitation of information exchange, and suggestions for the coverage of a future updated edition of the AQG.

TARGET 21

AIR QUALITY

By the year 2000, air quality in all countries should be improved to a point at which recognized air pollutants do not pose a threat to public health.

Index:

AIR POLLUTION - prevent/control
AIR QUALITY
(4) OECD
(4) CEC
EUR

The WHO Regional Office for Europe organized the workshop in collaboration with the Environment Directorate of the Organisation for Economic Co-operation and Development (OECD) and with the support of the Commission of the European Communities. There were 26 participants from 12 western and northern European countries, a delegate from Western Australia, a WHO panel of eight experts previously involved in the Air Quality Guidelines project, OECD staff and a consultant from the US Environmental Protection Agency.

Since the publication of Air quality guidelines for Europe in 1987, follow-up workshops have been organized in different sectors of the WHO European Region to encourage and assist Member States in using these public health oriented guidelines for the implementation at national level of strategies for the control of air pollution. This third workshop concentrated on such issues in the western and northern European countries and made attempts also to define air quality indicators and priority hazardous air pollutants and respective control strategies for the next decade.

Following initial discussions in plenary session, four subgroups were formed as follows.

Subgroup 1 on air quality guidelines (AQG) and national air pollution control strategies. This included an assessment of how the AQG were being used in control policies, the need for further guidance on links with emission controls, and recommendations on the handling and presentation of monitoring data.

Subgroup 2 on the definition, identification and potential use of air quality indicators. Discussion covered the various bases that might be considered, including the use of a single pollutant as an indicator of a complex mixture, measurements of body burden or outcome variables (health, ecological or environmental) and indices based on several pollutants.

Subgroup 3 on priority hazardous pollutants for the year 2000. The question of how far pollutants already covered by the AQG coincided with those considered to be important during the coming decade was discussed, along with procedures for establishing priorities for other pollutants.

Subgroup 4 on the need for a revision of the AQG book. This subgroup was convened to receive the reports from the three other subgroups and to make recommendations for revision of any of the AQG material.

A fifth subgroup reviewed, consolidated and drafted conclusions and recommendations on the basis of reports submitted by the other four subgroups. This draft was then submitted to the Workshop in its final plenary session for discussion and approval.

Conclusions

1. The AQG have provided a valuable, uniform basis for governments in extending or modifying national standards and guidelines and in the development of strategies for the control of air pollution, contributing to maintaining and improving the health of their populations.

2. The AQG have led to greatly increased public and government concern over both common urban air pollutants and less widely distributed ones from specific industrial sources. The importance of this stimulus can be measured in terms of action taken to reduce levels of air pollution.
3. Many factors determine which air pollution control strategies are appropriate and feasible in any one country or locality. If standards are to be based on the AQG, there is in any case a need to consider them in relation to the statistical distribution of monitoring values.
4. The AQG cover health and to some extent also ecological effects. Control strategies may need to take account of either or both sets of criteria, depending on the circumstances in individual countries or localities.
5. Problems continue to be encountered in evaluating risks from exposure to carcinogens. In the light of recent developments in the understanding of carcinogenesis, the possibility of putting forward guideline values rather than risk estimates requires further consideration.
6. The AQG have been used as a data source together with dispersion modelling in determining criteria for emissions from single sources. There have also been applications in urban planning when considering the impact of multiple sources, including domestic, industrial and traffic emissions. In some regions, attention still needs to be paid to strategies for controlling single sources but, generally, the most widespread remaining problem relates to controlling emissions from traffic.
7. The AQG are expressed in terms of averaging periods that are effect-based, but monitoring data are constrained by measurement procedures and needs for other purposes. Efforts are needed to reconcile these different aspects, if possible, to avoid misinterpretation.
8. To improve the effectiveness of strategies to protect the health of the public, further guidance is needed on ways of determining the exposure of population groups to prevailing levels of air pollution.
9. New, important data, generated on health effects (e.g. carcinogenicity, mutagenicity, immunotoxicity, reproductive toxicity, neurotoxicity) requires the reconsideration of existing AQG values. Depending on the type of health effect, different approaches may be required for assessing the inherent risks.
10. The risk evaluations forming the basis for the present AQG were performed five years or more ago, and several considerations now point to the need for updating and extending the AQG volume. One consideration relates to new findings on health and ecotoxic effects that may substantially alter the bases and values for some AQG pollutants.
11. Evaluation of traditional types of air pollution problem and/or emerging air pollution issues of widespread concern to many European countries requires considering adding other air pollutants to the AQG.
12. A need exists for improved and expanded mechanisms by which OECD countries and WHO Member States can gain access to and share information on the health and ecological effects of high priority air pollutants, as well as pertinent associated emissions, ambient air, and population exposure data and trends.

13. In addition to the major pollutants such as suspended particulate matter, SO₂, CO, NO₂ and O₃, ambient air pollution measurements are also needed for other pollutants (such as compounds responsible for global warming) to describe the state of the atmospheric environment.

14. Air quality indices are useful for presenting air pollution trends and for public reporting. Their principal disadvantage is that they may conceal significant trends in component pollutants.

15. If direct measures are not available, air pollution surrogate indicators such as data from emission inventories or production figures can be used to describe the condition of the environment.

Recommendations

1. All efforts should be made to reduce emissions of pollutants, whether or not existing air quality guidelines are met, and the need to protect uncontaminated areas should be emphasized.

2. Full use should be made of experience of abatement measures already successfully applied elsewhere in combating problems remaining in certain heavily polluted localities of the European Region.

3. The dialogue established during the course of the AQG project and the follow-up workshops between those involved in the health and environment fields should be maintained, with cooperation between WHO and OECD continuing in both of these areas.

4. Based on examination of newly available information, a selection should be made of substances or groups of substances for early addition to and revision of the AQG. More specifically, a working group of experts should be convened as soon as feasible to consider pertinent information such as new health or ecotoxicity data, to determine the list of pollutants of specific concern, and to prepare a plan for developing guidelines for the selected pollutants.

5. Appropriate international organizations such as WHO and OECD, with the help and contribution of the countries, should further promote and facilitate the exchange of air pollution information of widespread interest to European countries. In particular, efforts should be made (a) to expand or develop databases that include information on health and ecotoxic effects of air pollution, and on sources and emissions, (b) to widen distribution to existing and potential users, and (c) to facilitate access to such databases, taking into account any legal strictures.

6. WHO should give high priority to providing the necessary resources to support the continuous assessment of information relevant to the AQG and the establishment of an adequately funded formal review process.

7. More emphasis should be placed on the introductory remarks in the AQG volume, stressing that the guidelines do not automatically transcribe into regulatory standards.

8. A revised AQG volume should contain a new chapter concerned with assessment of cancer risks in exposed population groups.

9. Information on air quality should be linked to other relevant factors producing adverse effects on health, including pollen concentration and climatic extremes.
10. Strategies for air pollution control continue to be based largely on information relating to single pollutants, but mixtures are often more critical and the AQG should provide guidance.
11. Information on total exposure to pollutants or health effects, whether from differing indoor and outdoor exposures or from contributions from different media, should be brought together to assist in overall strategies to protect health.
12. The AQG should provide more elaborate guidance on the assessment of sensory effects of odorous substances.
13. It is important that in specifying AQG values for revised and additional pollutants, there should be clear statements on the nature of effects being considered and the magnitude of the protection factors applied.
14. Uniform ambient air quality indicators should be used to describe air pollution trends and comparisons of levels between cities, countries or regions, so as to judge the effectiveness of programmes and to assist in formulating policies, enforcing environmental standards, and guiding the conduct of scientific research.
15. Pollutant-specific air quality indicators, using mean and peak value statistics, should be developed to allow, if possible, comparisons with the AQG serving as reference values.
16. Air quality indicators and indices should be considered for future use for both public reporting and trend comparisons. An additional working group should be convened to examine the possibilities of creating such indicators and indices.
17. In any future revisions or extensions of the AQG, every effort should be made to include advice in a form suitable for adaptation into regulatory measures to serve and accommodate the needs of national executives. These people identify themselves as users of the AQG, and their perception of air pollution problems often differs from that of national experts concerned primarily with exposure characterization or health effects assessment.