

Air pollution abatement policy in Switzerland

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In Switzerland - like in other countries - air pollution has markedly increased since the fifties. Damages to buildings, acidified lakes, forest dieback and adverse effects on human health show, that air pollution is too high and must be reduced.

The only way to reduce air pollution is to limit the emission at its source, that means to establish and enforce emission limitations.

According to the Swiss federal law on the protection of the environment, all emissions have to be reduced to a practically achievable level even if negative effects are not, or not yet, occurring. Proven air pollution control technology which is economically feasible must be applied to reduce emissions. This is a fundamental principle of that law.

The following examples show how this legal principle is applied in practice. The objective of this presentation is neither to speak about concepts and ideas, nor to tell what ought to be done, but rather to show what has been done in our country and what has been regulated in a legally binding form.

Measures have been taken in each of the three main categories of emission sources:

- industry,
- heating installations,
- motor vehicles.

Industry

For industrial emission sources a new ordinance on air pollution control (Luftreinhalte-Verordnung, LRV) has been established, which is in force since March 1st, 1986. This ordinance is rather advanced and contains stringent emission limits for industrial plants and installations. The emission limits of this ordinance are widely harmonized with the corresponding values of the new regulations of the Federal Republic of Germany (TA-Luft), although there are also some differences due to different situations in the two countries. The Swiss ordinance on air pollution control contains, with regard to industry emissions, the following main elements:

- Generally applicable emission limits are set for about 150 air pollutants.
- Specific emission standards are given for about 40 special types of plants and installations.
- Plants and installations which emit air pollutants have to be inspected every 3 years.
- The issued emission standards hold for new as well as for old plants, i.e. old plants must be retrofitted.
- Normally, retrofitting of old plants has to be completed within 5 years.

Heating installations

Beyond regulating industrial emissions, the Swiss ordinance on air pollution control contains also progressive regulations for heating installations. The main points in this field are:

- Emission standards are set
 - . depending on the combustibles used (i.e. oil, coal, wood, gas) and
 - . for all sizes of installations (ranging from domestic heatings up to power plants).
- Heating installations have to be inspected every 2 years.
- Domestic oil heating equipment has to undergo a type approval test regarding emissions.
- Large oil and coal fired plants with a thermal power exceeding 100 MW have to be equipped with a flue gas desulphurization.
- Retrofitting of old installations has normally to be completed within 5 years.
- Limits are set for sulphur content in fuels.

According to the Swiss ordinance on air pollution control, the sulphur content of gas oil for domestic heatings must not exceed 0.2 percent (by weight) after July 1st, 1987. This value holds not only for heavily polluted areas, but for the whole country. With this regulation, Switzerland probably has the most advanced regulation in the world.

For heavy fuel oil, the maximum sulphur content is limited to 1.5 percent with effect from July 1st, 1986, and to 1.0 percent from July 1st, 1991.

The development of the Swiss legal sulphur limits for gas oil and heavy fuel oil are shown in figures 1 and 2 respectively.

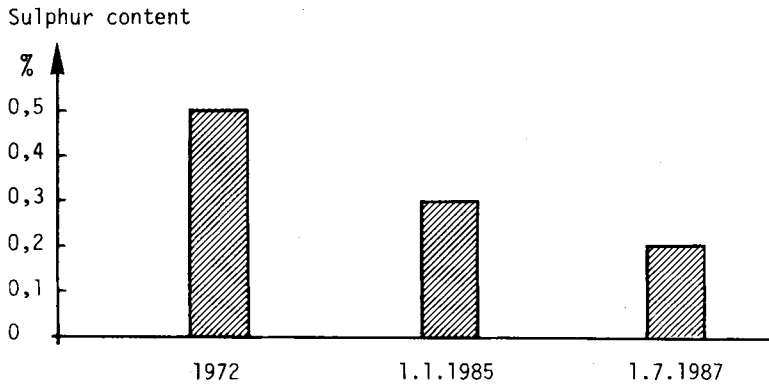


Fig. 1: Maximum admissible sulphur content for gas oil

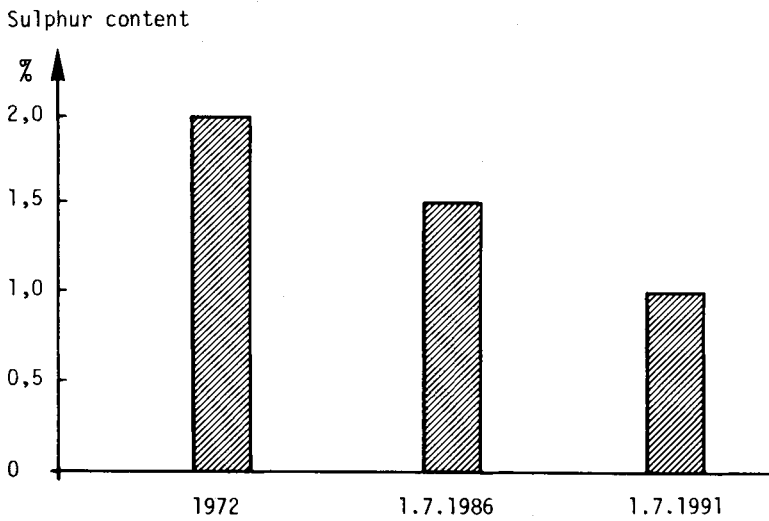


Fig. 2: Maximum admissible sulphur content for heavy fuel oil

Motor vehicles

For this important source of air pollution there exist a number of regulations which aim to reduce the emission of air pollutants. The main elements are:

- Speed limits, which have been lowered for air pollution reasons to:
 - . 80 km/h on roads outside towns and villages;
 - . 120 km/h on motorways.
- Regular quality petrol must be unleaded.
- Tax reduction on unleaded petrol, which amounts to a price difference of about 5 percent compared to the leaded premium quality.
- Emission standards for motorcycles (ECE 40) and mopeds (ECE 47).
- Emission standards for trucks (ECE 24).
- Emission standards for passenger cars:
 - . Swiss standards 1982
 - . Swiss standards 1986
 - . US 81/83 standards in 1987
 - . yearly inspection and maintenance regarding exhaust gas emissions.

At the present time (May 1986), the emission standards for motorcycles, mopeds and trucks, which were valid so far in Switzerland, are under discussion. The experience has shown that these ECE standards do not give rise to an effective reduction of the exhaust gas emissions of these vehicles. The Swiss government therefore plans to establish new, both more effective and more stringent emission standards for these vehicle categories. A similar situation existed already in 1981 regarding passenger cars. At that time Switzerland had to denounce the ECE 15 regulation and to establish more stringent emission standards for passenger cars, due to environmental needs. As a further marked step, the US 1981/83 standards will be put into force in Switzerland in 1987. These

standards reflect today's state of the art in the field of air pollution abatement for passenger cars. A number of other countries have already introduced or intend to introduce these standards, e.g. USA, Canada, Sweden, Norway, Denmark, Austria and Liechtenstein. On the other hand, the Commission of the European Community proposes different and less advanced emission standards which should come into force in the years 1989, 1991 and 1993 respectively. Figure 3 shows a comparison of different emission standards for passenger cars.

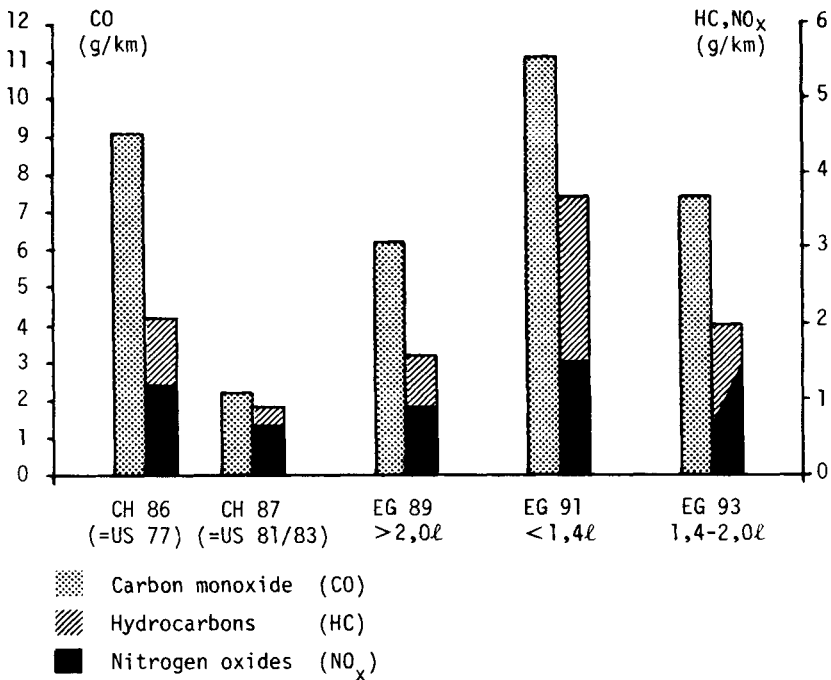


Fig. 3: Different exhaust gas emission standards for passenger cars

Outlook

Switzerland has already taken a number of remarkable decisions to abate air pollution. However, further measures are needed to achieve an air quality which is not unhealthy to man and his environment.

We will continue fighting air pollution as we did in the last years in our country, and we will continue to play an active role also at the international level. To solve transboundary air pollution problems, international cooperation is necessary. However: Seeking for internationally harmonized solutions must not lead to undue delays or undue weakening of necessary and feasible measures.

One of the main reasons for the urgency and severity of the measures taken in Switzerland is the preservation of our mountain forests. Their protective function against avalanches, landslides and floods is essential for survival in these regions. What can be done against too high air pollution and forest dieback must be done, preferably internationally harmonized, but in case of need at least on a national basis. Unfortunately, the experience shows, that international harmonization in the field of the environmental protection often leads to undue delays and weakening of such regulations. The story of the European exhaust gas limits for motor vehicles gives a recent example.

The protection of man and his environment needs not only common, but advanced and progressive measures. Switzerland has fixed such regulations in a compulsory form. Some other countries and international organisations have not yet advanced as far. We encourage them to follow the same course in setting stringent emission limits which Switzerland and others have proven to be realistic ones.