



Combating Air Pollution

Evaluation of the steering tax on volatile organic compounds (VOC)

Key facts

Volatile organic compounds (VOC) are applied as solvents in numerous areas and can be found in various products such as paints and varnishes, detergents and cosmetics. They are emitted during production, processing and use of such products. VOC emissions, together with those of nitrogen oxide, are responsible for excessive accumulation of ozone at ground level (summer smog). In Switzerland, the main political instruments to limit and reduce these emissions are the Ordinance on Air Pollution Control of 1986, the restrictive regulations on exhaust emissions for light-weight vehicles up to 3.5 tons of 1987, and the steering tax on VOC of the year 2000.

Air quality has improved over the past few years. However, in the summer months the ozone levels recorded in Switzerland still exceed the national standards regularly. On the other hand, some private sector stakeholders are critical towards the VOC tax because of the administrative costs involved.

The Swiss Federal Audit Office has conducted a study on the effectiveness of the steering tax on VOC in order to get a closer idea of its impact and the costs involved for authorities and companies by its implementation, and also to identify possible risks involved in the fund flow of a tax collected by customs and transferred to the population through health insurance schemes (net receipts in 2006 : approximately CHF 127 million).

Positive outcomes of the efforts at reducing VOC : putting the results into perspective

In European comparison, Switzerland stands in the forefront when it comes to reducing VOC. According to the Federal Office for the Environment, it was a combination of measures – primarily the regulations on exhaust emissions, the Ordinance on Air Pollution Control and the VOC tax – which enabled emissions to be considerably reduced in the transport, industry, trade and agricultural sectors between 1990 and 2004, when they dropped from 294,000 to 102,300 tons.

The positive outcomes of the Swiss reduction policies pursued by the Federal Office for the Environment need to be put into perspective though. On one hand, it should not be interpreted solely with regard to Switzerland's policies. As an integral part of the European economic market, Switzerland is affected by European VOC regulations as well. On the other hand, the analysis conducted by the Swiss Federal Audit Office also reveals several methodological limits of the estimates of the Federal Office for the Environment. In addition, the statistics on steering tax revenues and imports of taxed VOC have not shown the tax to have a continuous positive effect to date.

VOC tax : one incentive among many for companies to take measures

The companies have taken numerous measures to reduce their emissions. They may pertain to stationary installations (end-of-pipe measures), the products, the introduction of new machines, a change in the production process, to recycling, etc.

A variety of factors have encouraged the companies to introduce reduction measures : the VOC tax, the Ordinance on Air Pollution Control, sectoral agreements, safety and health at the work place, improvements to the production process, customer demand, the company's environmental



commitment, or the cost and quality of alternative products. A company's choice is influenced by a combination of factors. Usually, there are at least two, maybe three reasons encouraging them to introduce reduction measures.

Main impacts of the VOC tax on companies

The impact of the VOC tax is not quantifiable. However, five main observations may be made :

1. The more expensive a product containing VOC, the weaker the impact of the VOC tax.
2. The impact of the VOC tax is greater on large-scale than on small-scale VOC users. The larger the quantity of VOC used, the greater the incentive to introduce reduction measures.
3. The incentive to substitute VOC-based for water-based products is, generally speaking, lower for companies owning a stationary installation equipped with a filter. It becomes even lower when producers and users of VOC are exempt from the tax (Art. 9 of the Ordinance on the Steering Tax on volatile organic compounds).
4. The incentive effect of the tax is significant in supporting the cantons in enforcing the regulations of the Ordinance on Air Pollution Control. Before 2001, the VOC tax motivated non-cooperative companies to readjust their stationary installations in order to avoid a higher tax.
5. An increase in companies' awareness and an impetus for innovations regarding alternative products and machines can be perceived. It is noteworthy though that this process began before introduction of the VOC tax.

Stagnating impact of the VOC tax

The impact of the VOC tax currently tends towards stagnation. Many companies for which the tax was an incentive have now completed the implementation of the chosen measures. In other words, the impact of the tax will no longer be as significant in the future, even if there remains an overall potential for reductions. This potential is greater for small companies than for large ones.

In this context, it is noteworthy that the 2005 review of the « Strategy for Combating Air Pollution », conducted by the Federal Office for the Environment, stipulates that in order to reach the 2010 objective of a maximum VOC emission of 81,000 tons per annum, additional reduction policies must be implemented for industry and households.

Reliable collection and reimbursement procedures, but complex implementation and limited coordination

Despite the complex financial and information flows, the analysis conducted by the Swiss Federal Audit Office shows that the procedures are reliable.

As for the implementation of the VOC tax, the Federal Customs Administration depends on the support of the cantons. This cooperation is alright, still there remains a certain risk of duplication due to the annual analysis of the VOC balance sheets both by the cantons – in the form of a pre-examination – and by the Directorate General of Customs.

Standard VOC tax controls are carried out by customs officials at the border posts and by inspectors of the District Directorate of Customs in the companies. There is a risk strategy for border controls. Company controls are ordered if irregularities are disclosed during a border control or during the examination of the VOC balance sheets. Some deficiencies regarding collaboration in such company inspections were revealed. Contact between customs officials in charge of the



inspections and the cantonal authorities that are well acquainted with the companies is rare. Besides, the inspections are very detailed, although the sums involved may often be quite modest.

The cost-benefit ratio on the VOC tax is no longer appropriate

The costs involved in the VOC tax are high. In 2006, they amounted to an estimated 12.5 % of the net receipts obtained through the tax, or CHF 127 million :

- 9.3 % for the implementation in the companies ;
- 3.2 % for the enforcement by the Federal Customs Administration and the cantons.

It is possible that costs were overestimated by the companies returning the questionnaire sent out by the Swiss Federal Audit Office. Even so, they still remain high.

The costs are caused by the exceptions and special conditions provided in the Ordinance on the Steering Tax on VOC in order to increase acceptance in the business community. In addition, the VOC tax applies to several substances, thus complicating their processing and calculation, and furthermore these substances are volatile and thus difficult to analyse and measure. The tax is also subject to several examinations by the authorities (examination of balance sheets and reimbursement requests, company inspections).

While the total costs linked to the VOC tax are high, the impact of this tax on reducing VOC emissions tends to level off and will no longer remain as important in the future. Thus, the results brought forward by the Swiss Federal Audit Office show that the cost-benefit ratio on the VOC tax is no longer appropriate.

Potential for improvement : recommendations

The Swiss Confederation proved very innovative when introducing the steering tax on VOC. But while its impact throughout the first few years was positive, it now tends to level off. In view of the high enforcement costs and the efforts still to be made in order to achieve the objective as to the reduction of emissions, time has come for the Confederation to prepare a new package of measures with a better cost-benefit ratio.

1. The Federal Office for the Environment takes appropriate measures – in terms of cost effectiveness – to obtain the VOC emissions reduction objective. This will be achieved in two steps :
 1. Assessment of the impact, costs and feasibility of the various reduction measures under consideration ;
 2. Proposal of a package of measures for achieving the reduction objectives. This may even include replacement of the VOC tax if other measures prove to be more effective.
2. The Federal Office for the Environment increases monitoring of the cantons with regard to the compliance with the requirements of the Ordinance on Air Pollution Control by the companies.
3. The Federal Office for the Environment improves the standard of VOC emission measurement.



4. In order to reduce costs, the Federal Customs Administration is to simplify the enforcement procedures for the VOC tax with regard to :
 1. Examination of the VOC balance sheets : the Federal Customs Administration requires the cantons to indicate the sections examined and their assessment of the company's level of risk for each balance sheet sent to the Directorate General of Customs.
 2. Company inspections :
 - A. Encouraging a systematic exchange of information between customs officials and the cantonal authorities ;
 - B. Selecting the companies to be inspected on the basis of risk analysis and determining the types of inspections to be applied.
5. When it comes to the next revision of the Environmental Protection Act, the Federal Office for the Environment will insert the following into articles 35a, 35b and 35b^{bis} :
 1. the authority in charge of determining the quantitative objectives to be achieved ;
 2. the authorization for the Federal Council to suspend the steering tax if :
 - A. the emission reduction objective has been achieved and the risk of deterioration is low ;
 - B. the impact of the tax is low or negligible ;
 - C. the costs of the tax are disproportionate to its impact.

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