



RIKSREVISIONEN

Summary:

Biofuels for a Better Climate – How
does the tax relief work?

RiR 2011:10

THE SWEDISH NATIONAL AUDIT OFFICE

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Summary

The Swedish National Audit Office (SNAO) has audited the tax exemption for biofuels.

Background of the audit

Motive for the audit: Since 1995, the Government can decide on tax reliefs and tax exemptions for biofuels. The purpose of the tax exemption is to contribute to the technological development of more environmentally friendly fuels in order to, among other things, decrease greenhouse gas emissions from the transport sector. Even though it has been difficult to reduce emissions from the transport sector, it has not been examined whether a tax exemption on biofuels is the best way to do so. Previous studies have shown that a tax exemption is an expensive and blunt instrument. Lately, the cost of the tax exemption has increased greatly and there is a risk that it will continue to rise.

The purpose of the audit: The audit's objective is to examine the extent to which the tax exemption for biofuels contributes to reaching the climate objectives and at what costs. The audit focuses on how the tax exemption for biofuels has been structured and managed in relation to, among other things, other instruments of control, and the problems and risks that it has caused. It has not been possible to carry out an evaluation of the effects specific to the tax exemption, since it is not the only support aimed at increasing the use of biofuels.

Implementation of the audit: The SNAO has examined the Government's decisions on tax reliefs for biofuels for the period 1995–2009 as well as the Swedish Energy Agency's follow-up of the tax exemption for the corresponding time-period. The SNAO has also, with the help of Statistics Sweden, carried out a survey aimed towards owners of green cars to investigate what factors are important in the choice to acquire a green car and the choice of fuel. To illustrate how the tax exemption has affected the use of biofuels and how much it contributes to reduce emissions, the SNAO has put together existing statistics and carried out calculations of its own. The audit has also been complemented with interviews carried out at the Government Offices of Sweden and the Swedish Energy Agency, a review of Government bills and other material, as well as a review of relevant EU legislation with the support of EU legal expertise.

The audit's result

The audit has resulted in the following main conclusions and observations:

A tax exemption for biofuels contributes to reaching the Riksdag's climate objective – but not at a reasonable cost

The tax exemption has been necessary to increase the use of biofuels, but it is a relatively expensive way to reduce greenhouse gas emissions. Today, as good as all gasoline and diesel contain a low-level

blend of biofuels. The tax exemption has been crucial for this development. However, in order to be able to use biofuels in high-level blends, for example, E85, a tax exemption is not enough; investments in vehicles and infrastructure are needed as well. Sweden is practically the only country in the EU that has created a market for E85.

How emissions from biofuels should be measured is not self-evident. Different studies come to different conclusions, depending on the assumptions made. The SNAO has estimated that the use of biofuels can have brought about a reduction in emissions of about 0.4–1.1 million tonnes of carbon dioxide equivalents per year for 2007–2009. The reduced emissions equal about 1 per cent of Sweden's total greenhouse gas emissions. However, counteractive effects can mean that the reduction is smaller.

The loss of tax revenues resulting from the tax exemption has increased steadily since the year 2000 and amounts today to about SEK 2 billion per year. The emission reductions that the use of biofuels has achieved, therefore, involve a cost for the Government of about 3 kronor per kg/carbon dioxide reduction. Compared to, for example, the carbon dioxide tax of 1.05 kronor per kg/carbon dioxide, a complete tax exemption for biofuels is a relatively expensive measure to decrease greenhouse gas emissions.

The Government's management of the exemption has not entailed long-term and predictable conditions

In order to give biofuels long-term and predictable conditions, the Government has put up principles to serve as a base for decisions on tax reliefs. In spite of the Government's ambitions, its decisions on tax reliefs, in most cases, have comprised relatively short periods of time – one to two years – which limits the companies' possibilities to plan. Also, the Government's reasons for granting the tax reliefs have varied. Different companies have not been treated equally. This unequal treatment is negative, not only from the point of view of transparency and competitiveness, but also because technology neutrality between biofuels is not guaranteed, which is desirable from the point of view of effectiveness.

Since the tax exemption, above all, has contributed to low-level blending of biofuels, it has not led to a significant technology driven effect. Low-level blending is an efficient way to quickly get large volumes of biofuels into the market, but it does not contribute to the development of new fuels. Therefore, there is a risk that the tax exemption contributes to settling for technologies that are neither long-term nor can serve as a bridge to long-term solutions.

The Riksdag has, after a request from the Government, decided that the Government may continue to grant tax reliefs for biofuels in specific cases, without it having to be about pilot projects. The Government, however, has not clarified which the special cases are that it aims to grant tax reliefs for biofuels. The Government has not informed what happens with the tax exemption after 2013, when the approval of Sweden's public funding support expires. All in all, this contributes to unclear rules of the game for companies as well as consumers.

The tax exemption for biofuels causes side effects – or counteracting effects

A tax exemption for low-level blended biofuels in gasoline and diesel contributes to lower prices of gasoline and diesel and, therefore, to an increased total consumption of fuels, all other things alike.

According to the SNAO's calculation, even a marginal increase of the total fuel consumption may diminish up to a fourth of the emissions reduction brought about by the low-level blending of biofuels.

The number of cars that can drive on E85 as well as the number of E85 fuel stations has increased greatly during the past years. The tax exemption, however, has not been sufficient to sustain the level of consumption of E85 when the price of gasoline has decreased. During 2009, many owners of ethanol-powered cars refuelled with gasoline instead of E85, as a result of lower prices of gasoline. This leads to increased emissions since cars that can drive on E85 on average have higher fuel consumption than gasoline-powered cars. If the tax exemption for low-level blending also contributes to lower prices of gasoline, this can counteract the use of E85 as well.

The EU does not allow for the tax exemption to lead to the overcompensation of biofuels relative to gasoline or diesel. Since it is difficult to differentiate the tax exemption between various biofuels, the Government has solved this problem by conditioning the tax exemption with a special tariff. The tariff means that the highest rate has to be charged in order for a tax exemption to be granted for imported ethanol for low-level blending, which favours ethanol produced in Sweden or within the rest of the EU. Since the production cost for this ethanol is higher than that for imported ethanol, the tariff leads to a higher cost. This higher cost does not have a corresponding climate benefit. Therefore, the tariff favours ethanol that entails smaller emission reductions at the expense of ethanol that could entail larger emission reductions.

The Government's follow-up of the tax exemption has been inadequate and insufficient

The Government has not presented a comprehensive strategy for how the efforts to promote biofuels should best be designed. Also, the Government has not monitored and commented on the total extent of the tax exemption and its effects in any of the fiscal bills in the past years.

The tariff that the Government has introduced to manage the over-compensation issue implicates extra support for domestically produced biofuels. For this reason, it is interesting to follow up the issue of over-compensation and the effects of the tariff in other contexts, besides for reporting to the EU. The Government has not presented the tariff's effects on domestic production weighed up against the access to cheaper, imported, and more climate-friendly, ethanol.

The tax exemption does not have the conditions to be sustainable in the long run

The Swedish production of biofuels is considered to be unable to increase to any large extent if new biofuels are not developed. In spite of the investments on research and development that have been carried out for a long time, it has still been difficult to develop new and advanced biofuels.

The demands for emission reductions made by the EU so that biofuels could come to be considered sustainable are also modest, in relation to the Swedish conditions. The demands will, therefore, probably not contribute to the development of new biofuels or to the tax exemption becoming more cost-effective in relation to the climate objectives. Unilateral demands on biofuels can also entail that the emissions move to other products or sectors instead. In order for the emissions to decrease at the lowest cost possible, it is important not to aim measures at a specific type of production.

If the use of biofuels increases, a tax exemption for biofuels will entail a continuously increasing loss of tax revenues. This can decrease the possibility of maintaining the tax exemption in the future. Sweden will not be able to keep the tax exemption after the year 2020 unless EU regulation is changed. Thus, the tax exemption for biofuels that exists today is not sustainable in the long run.

The SNAO's recommendations

The SNAO has not found evidence that a tax exemption for biofuels contributes to reaching the Riksdag's climate objectives at a reasonable cost for society. The tax exemption has not stimulated the development of new and more advanced biofuels. Therefore, it can be questioned whether it is effective for the Government to continue granting biofuels a full tax exemption – at least regarding the way in which the tax exemption has been managed, designed, and followed up so far.

In the 2011 Budget Bill, the Government announced an extended tax exemption for low-level blending of biofuels from January 1, 2011. The Riksdag has also, after a proposal from the Government, decided that the Government will be empowered to continue granting tax reliefs for biofuels in special cases. With this in mind, the SNAO recommends the following to the Government:

- The Government should improve its reporting and follow-up of the tax exemption for biofuels with the purpose of increasing transparency.
- The Government should report more clearly how the tax exemption, in combination with the tariff, affects Swedish production, imports and the use of biofuels as well as the effects it causes.
- The Government should clearly specify the cases in which the tax exemption can be granted to avoid different companies and biofuels from being treated differently.
- In order to provide companies and consumers with reasonable conditions for planning, the Government has to – in the short run – make the continued management of the tax exemption clear. In the long run, the Government has to analyse which methods help reach the climate targets the best way.

Factbox

More on the tax exemption for biofuels: Liquid biofuels like ethanol and biodiesel are, today, exempt from energy and carbon dioxide tax. The tax exemption does not mean that there is a general exemption for liquid biofuels in the Act no. 1994:1776 on Energy Tax. Instead, the Government decides on the tax exemption after application from every individual producer or supplier.

Relevant standpoints from the Riksdag: The Riksdag has, on several occasions, pointed out that the climate objectives should be reached at the lowest possible cost for society; that is, with regard to socio-economic effectiveness and through cost-effective measures (Committee Reports 2001/02:MJU10 and 2008/09:MJU28). In relation to the Riksdag's dealing with the latest climate policy bill, the Committee on Environment and Agriculture expressed that promoting renewable fuels should be a central part of the Swedish climate policy (Committee Report 2008/09:MJU28). From the bill, one can also see that the tax exemption for biofuels is the main policy instrument behind the introduction of biofuels (Government Bill 2008/09:162). The Riksdag has also requested

an in-depth review and account of various efforts within the climate subject-area (Committee Reports 2009/10:MJU1 and 2010/11:MJU1).