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Central government measures for more green cars

Summary and recommendations

Background and reasons for the audit

The Riksdag and the Government have set ambitious targets for reducing greenhouse gas emissions in the transport sector by 2030. The Government's vision is that the vehicle fleet should eventually become fossil-free.

Through the years Sweden has directed various policy instruments towards the purchase and ownership of passenger cars in order to increase the share of vehicles with improved environmental characteristics (green cars) and thereby reduce carbon dioxide emissions. They include the green car rebate, the super green car rebate, the bonus-malus system, the CO2 differentiation of the motor vehicle tax, the motor vehicle tax exemption and the reduction of the taxable benefit for green cars.

Over the years, green car subsidies and tax relief have resulted in substantial costs in the central government budget. For 2019 and 2020, SEK 3.1 billion is allocated to the climate bonus, making this allocation the second largest in expenditure area 20. For the period 2007-2020, the payment of subsidies and tax expenditure on green cars has amounted to approximately SEK 13.4 billion At the same time, the introduction of a CO2-based motor vehicle tax and amendments made to it, including the increased motor vehicle tax (malus), have led to an increase in revenues of SEK 4.5 billion.

The aim of these instruments is to contribute to the reduction of CO2 emissions in the transport sector and/or a fossil–free vehicle fleet by increasing the share of green cars in the Swedish car fleet. Researchers and government agencies have noted that supporting the purchase of green cars risks, among other things, leading to more traffic. It has also been shown that the link to environmental effects is relatively weak and that the support may lead to an increase in the export of subsidised cars.

Climate policy must be based on long-term rules in accordance with the Swedish Climate Change Act and the intentions of the Riksdag. Frequent changes in the levels and design of policy instruments may increase uncertainty and thus cost for car buyers, car owners and the car industry. A government inquiry has alerted the

Government to the fact that the policy of support for alternative fuel vehicles and energy efficient cars has been characterised by disjointedness.

Purpose and scope of the audit

The purpose is to examine whether policy instruments targeting the purchase and ownership of passenger cars with certain environmental characteristics have contributed to achieving Sweden's objective of reducing greenhouse gas emissions in the transport sector at a reasonable socio-economic cost and contributed to stable long-term conditions.

The purpose has also been to assess whether the Government and the responsible agencies have produced impact assessments so that the Riksdag has received a transparent basis for decision-making.

The audit questions are:

1. Have the Government and the responsible agencies prepared adequate and transparent impact assessments for decisions on the policy instruments?
2. Have the socio-economic costs of the policy instruments been reasonable and how have they been allocated?
3. Have the policy instruments created long-term, predictable conditions for the purchase of new cars and car ownership?

The scope of this audit covers policy instruments directed towards passenger cars in Class I and Class II introduced or amended in 2006 or later. The policy instruments primarily covered by the audit are the reduced taxable benefit for green cars, the CO2 differentiated motor vehicle tax, the motor vehicle tax exemption, the green car rebate, the super green car rebate and the bonus-malus system.

Audit findings

The overall conclusion of the Swedish NAO is that the policy instruments for the purchase and ownership of green cars appear to be costly in comparison with other measures used today to reduce the CO2 emissions in the transport sector, and that they have been put in place without the development of socio-economic impact assessments by the Government.

The Government has failed to ensure the preparation of sufficient and transparent impact assessments before decisions on policy instruments

The Swedish NAO concludes that a sufficient and transparent basis for decisions in the form of impact assessments has not been established and communicated to the Riksdag. This has reduced the ability of the Riksdag to make well-informed

decisions, which risks leading to decisions being taken on inaccurate grounds and undesirable effects arising after implementation

The environmental impact is poorly described

The Swedish NAO's assessment is that documents used as basis for many of the decisions lack or contain very scant information on the environmental impact of the policy instruments, despite the fact that their object is to reduce emissions, in particular, of CO2.

No cost-benefit analyses

None of the decision-guidance documents read by the Swedish NAO contain an overall socio-economic assessment in which the benefits and costs of different measures are set against each other or where an assessment of the cost-effectiveness of a measure is assessed.

No follow-up and evaluation

Most of the policy instruments lack any plan for follow-up and evaluation. Nor have the Government Offices made any evaluation of the policy instruments in question. Without evaluation, there is a risk that past experience is not taken into account and that mistakes are repeated.

The socio-economic costs of the policy instruments seem to be relatively high

The Swedish NAO concludes that the policy instruments are not effectively designed, since all green car buyers do not meet the same price, as the instruments specifically benefit company cars for private use. The socio-economic cost of the instruments appears high in comparison with other measures used today to reduce emissions. This indicates that the instruments do not comply with the Riksdag's intention that measures to reduce the climate impact of the transport sector should be based on socio-economically and environmentally effective measures, since it means that less costly measures should be taken first. In the longer term, however, more costly measures may be necessary to reach the emissions target in the transport sector.

Costly emission reductions

According to the calculations carried out by the Swedish NAO, the socio-economic cost of all policy instruments targeting the approximately 60,000 super-green cars between 2012 and 2018 was just under SEK 5 billion. The sale of super-green cars resulted in a total reduction in CO2 emissions of 1.25 million tonnes. The average socio-economic cost was therefore about SEK 4 per kilogram of CO2.

For the green cars approved for a rebate in the bonus-malus system, the Swedish NAO estimates that the socio-economic cost of subsidising an additional green car

on the market is approximately SEK 160,000. If this cost is related to the resulting reduction in emissions, the marginal cost is about SEK 6 per kilogram of CO2.

In relation to the estimated cost of emission reductions with other transport measures currently in use, such as the carbon tax and support to local climate investments, the costs of both the super green cars and the climate bonus cars appear to be relatively high. The cost per emission reduction for a climate bonus car is about five times higher than the current carbon tax. In the longer term, more costly measures may be necessary to reach the emissions target in the transport sector. However, the level of these costs is uncertain and estimates varies a lot. However, in order to achieve the objective in a cost-effective manner, priority should be given to those measures with the lowest cost.

The effectiveness of the policy instruments decreases with increased green car exports

If a large number of green cars are exported, the cost is further increased. A subsidised climate bonus car, which is exported after a few years in Sweden, results in a socio-economic cost that is three times higher per kilogram of CO2 compared to a car that stays in the country for its entire lifetime.

A higher subsidy to drivers of company cars for private use reduces effectiveness

The majority of subsidised green cars are company cars for private use. Drivers of company cars for private use currently receive a larger subsidy compared to private individuals. According to the Swedish NAO's calculations, the socio-economic cost per kilogram of carbon dioxide would be more than 40 per cent higher to subsidise another green car that is a company car for private use compared to a privately-owned car. This difference makes the policy instruments for promoting green cars less cost-effective.

Support is unevenly distributed in the country

The distribution of support and taxes among citizens in the country may have a bearing on both the overall socio-economic cost of the support and on its acceptance by citizens. The payment of both the former super green rebate and the current climate bonus is unevenly distributed across the country. Metropolitan municipalities have received the greater part of subsidies paid, just over 80 per cent. Even if it is taken into account that the population and the number of new car sales are greater and the number of companies in these municipalities is greater, the subsidies appear to be unevenly distributed geographically. Car drivers in metropolitan municipalities pays the largest share of the malus payments, i.e. increased motor vehicle tax, but the percentage of malus cars sold (cars with emissions higher than 95 grams of CO2 per kilometre) of total new car sales is highest in rural municipalities.

The policy instruments have not created long-term, predictable conditions for the purchase of new cars and car ownership

The Swedish NAO's assessment is that long-term and predictable conditions for the purchase of new cars and car ownership have not been created because frequent regulatory changes, in several cases at short notice, have created uncertainty for the actors in the automotive market. For many of the policy instruments, there is no clear plan for how they are to be developed or discontinued. If more extensive impact assessments had been carried out from the beginning, the design of the instruments could probably have been more long-term.

Temporary support creates uncertainty

There have been several extensions of the temporary reduction in the taxable benefit of certain environmental cars since their introduction in 2002. That reduction was initially temporary and has continued to be. The extensions were in some cases at short notice. This has created uncertainty, not least for those who enter into leasing contracts for company cars for private use, which often run for three years at a time.

Risk of insufficient funds

Both Swedish and international experience shows that it is difficult and requires thorough analysis to estimate the funding needs for a support measure. Extra funds have been needed on several occasions for the green car rebate and the super green car rebate. In addition, the super green car rebate was extended several times at short notice. This has created uncertainty for consumers concerning whether they would be able to receive a subsidy or not. The Swedish NAO sees a risk in light of past experience that extra funds, in addition to budgeted levels, will need to be added to the climate bonus appropriation.

Being out of step with EU legislation creates uncertainty

Changes have been made to the conditions of the climate bonus due to unexpected effects of the new EU driving cycle (WLTP). The driving cycle is a new way of measuring vehicle fuel consumption and emissions. The new driving cycle means that the specific emissions of passenger cars are generally 30 per cent higher than previously measured. The bonus-malus system was introduced one year before the impact of the driving cycle on emissions was clarified, instead of waiting for the results and analysing the impact of the new cycle. This has increased uncertainty for both consumers and producers. However, for a transitional period until 1 January 2020, the lower CO2 value of the measurement in accordance with the old cycle and the measurement with the new driving cycle may be used as the basis for vehicle taxation.

Recommendations

Recommendations to the Government

The Swedish NAO notes that there is a significant lack of impact assessment of environmental effects and socio-economic impact assessments in documents used as basis for decisions on new policies and changes in policy instruments aimed at increasing the percentage of green cars. In addition, the audit finds that the socio-economic cost of policy instruments targeting super green and climate bonus cars is relatively high compared to other measures used today to reduce transport-related CO2 emissions. The Swedish NAO's calculations also show that a high level of exports of subsidised green cars could significantly increase the socio-economic cost of reducing emissions. In the light of the above, the Government should:

- ensure that impact assessments are prepared for decisions on policy instruments to increase the share of green cars and reduce emissions in the transport sector. In particular, the Government should ensure that the environmental and socio-economic impacts are highlighted
- compare the socio-economic costs of reducing emissions by using policy instruments targeting the purchase and ownership of green cars with alternative policy instruments in order to ensure a socio-economically efficient climate and transport policy
- plan to carry out evaluations of completed or ongoing reforms already at the time of making decisions on policy instruments in order to draw lessons from these policies before implementing future reforms
- review the possibilities of reducing the socio-economic costs of exporting subsidised green cars.

The Swedish NAO notes that reduced taxable benefit for company cars for private use means that the drivers of these cars receive higher green car subsidies than private motorists. This could reduce the cost-effectiveness of the policy. In addition, its management appears to be administratively burdensome. In the light of the above, the Government should:

- analyse the need for and cost efficiency of the reduced taxable benefit targeting green company cars for private use.

The Swedish NAO notes that the conditions for purchase and ownership of green cars have not been long-term and predictable. In order to ensure a stable, transparent and predictable regulatory framework, the Government should:

- clearly state how long the bonus-malus system is to apply and how it is intended to be developed in the future, and how long the temporary reduction in the taxable benefit for electric and gas cars is to apply.