



# Proposals that lead to the transport sectors' climate change

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# Summary

In March 2021, the Swedish government tasked Transport Analysis with preparing a documentary basis for an upcoming climate action plan. The assignment included:

- analysing and proposing ways in which existing policy instruments and combinations thereof could be developed so that their collective guidance contributes to achieving the Swedish 2030 intermediate climate objective for domestic transport operations and, in principle, zero greenhouse gas emissions from transport operations by 2045, and
- identifying potential emissions reductions and formulating proposals for new policy instruments and measures with a view to ensuring that their collective guidance contributes to achieving the Swedish 2030 intermediate climate objective for domestic transport operations and, in principle, zero greenhouse gas emissions from transport operations by 2045.

The task did not include offering proposals in the area of taxation.

Transport Analysis has completed this assignment with the assistance of the Swedish National Board of Housing, Building and Planning, the Swedish Environmental Protection Agency, the Swedish Energy Agency, the Swedish Transport Administration, and the Swedish Transport Agency.

The present document constitutes Transport Analysis' report on this assignment.

## **Policy instruments are needed in three areas of action**

Scenario analyses from the Swedish Environmental Protection Agency in their March 2022 climate report indicate that we could achieve the Swedish 2030 objective for domestic transport operations using the policy instruments currently in place, but not the Swedish 2045 objective. However, achieving the 2030 objective would require a well-suited and efficient charging infrastructure for electric vehicles and the availability of sustainable renewable fuels.

Transport Analysis perceives a continued need for adjustments and additional policy instruments and measures, particularly considering our need to aim for zero greenhouse gas emissions from the transport sector by 2045, but also in order to achieve the objectives in a more sustainable, cost-effective and robust manner.

The climate transition needs to rest on three pillars, each of which constitutes a separate area of action, *A transport-efficient society*, *Sustainable renewable fuels* and *Energy-efficient vehicles and vessels*. Having the transition be based on three areas of action makes it robust, which is important for several reasons; such an approach spreads the risk if a given area fails to develop in the desired direction, the resources needed for the transition are limited, and there are also other objectives and commitments to be met, such as reducing air pollution.

The electrification of road traffic will play a key role here by contributing both to reduced greenhouse gas emissions from such traffic, and to greater energy efficiency. If our road traffic can be electrified and its vehicles mileage reduced, then the sustainable renewable fuels initially used for road traffic can gradually be freed up for use in maritime transport and aviation, areas in which it will not be feasible to introduce electrification in on large scale in the foreseeable future.

## **Importance of taking action within the National Electrification Strategy**

Because, most importantly, electrifying our road traffic is key to the transport sector's climate transition, it is imperative to develop and secure a well-suited and efficient charging infrastructure. The government has, within the framework of the national Electrification Strategy, formulated numerous measures that could contribute to such an evolution. We consider it urgent that this strategy be implemented, and the proposals that we are presenting within this area are to be viewed as a complement to the strategy.

## **Many important processes and tasks are underway**

Transport Analysis notes that several key policy instruments for the climate transition are in place. These include fuel taxes, the greenhouse gas reduction mandate for petrol, diesel and aviation fuel (reduktionsplikt), and the EU emissions requirements for light and heavy road vehicles. The work moving forward will have to do with adjusting and complementing these instruments in relation to regulations at the EU level and internationally. In addition, more projects and studies have recently been concluded, while numerous processes and projects are underway, the results of which may be relevant to the upcoming national climate policy action plan.

However, the most important ongoing process comprises the proposals that the EU Commission is issuing and has issued within the framework of Fit for 55, and the negotiations being conducted in that context. The decisions resulting from those negotiations will be decisive in determining which policy instruments can, should and will be implemented in Sweden, and when. They will thus affect the content of the next climate policy action plan. A number of the proposals we are putting forth are contingent upon which decisions come to be made. The introduction and final confirmation of these proposals must consequently await the results of the negotiations.

## **Adopted policy is a starting point**

In formulating our proposals, we have proceeded based on the assumption that the existing policy instruments adopted through to 1 March 2022 are in effect. Any decision to, for example, lower fuel taxes or a reduced greenhouse gas reduction mandate would entail that other policy instruments or measures would need to be put forward to compensate for the lost reductions in emissions. However, we have not identified any such policy instruments within the framework of the present assignment.

In order to achieve the 2030 climate objective, it is consequently important that the decision to pause the 2023 increase in the greenhouse gas reduction mandate for petrol and diesel, which was adopted on 22 June 2022, should not result in a lowering of the aims of the system. It is also important that the temporarily lowered energy tax on petrol and diesel adopted on 27 April 2022 not become permanent, assuming that no other decisions are made which correspondingly contribute to the achievement of the climate objective.

## **Transport Analysis' proposals**

Transport Analysis' proposals are to be viewed as a complement to adopted policy, and our hope is that, through them, we can take some steps on the path towards a robust and sustainable climate transition within the transport sector.

The proposals are presented in the tables below; for more detailed descriptions we refer the reader to chapter 4 to 7 of the main report in Swedish (Trafikanalys, Rapport 2022:14). In order to rank them, we have first grouped them based on mode of transport whose greenhouse gas emissions they are intended to reduce, and on the area of action to which

they belong, i.e. *Sustainable renewable fuels*, *A transport-efficient society* or *Energy-efficient vehicles and vessels*. In some cases, we have sorted them as spanning all modes of transport. Within each group we have then ranked the proposals based primarily on their importance, or potential importance, for the climate transition, as well as on other aspects, such as their effects on the national budget, distributional effects and implementation times, where feasible and justified. The number of proposals is, however, low for some modes of transport, with the result that we have in some cases simply made a grouping, with no rankings.

The rankings apply only within the relevant mode of transport and area of action. A proposal with the highest ranking within one mode of transport and area of action is thus not comparable with the highest-ranked proposal within another transport mode or area of action. Proposals within some groups have been given the same ranking, for example when we believe that they should be introduced as a package.

Our proposals pertain mainly to national policy instruments. A guiding principle for further prioritisation could consider the extent of the greenhouse gas emissions currently attributable to each mode of transport with respect to domestic transport operations. Policy instruments affecting road traffic are then most important, followed by maritime transport and then aviation.

The justifications for the rankings of each proposal are presented in connection with the presentation of the proposals in the main report.

The agencies that have assisted us have sometimes had differences of opinion regarding the proposals and how they should be ranked. These views are presented in the main report and its appendices.

### Table 1. Proposals spanning all modes of transport – compilation

Proposals per area of action – spanning all modes of transport
<b>Proposals concerning sustainable renewable fuels</b>
A broad investigation of the Swedish greenhouse gas reduction mandate and / or an emission trading system
<b>Proposals concerning a transport-efficient society</b>
Introduce a transport-efficient society as a transport policy principle

### Table 2. Proposals affecting road transport – compilation

Proposals per area of action – road transport	Ranking
<b>Proposals concerning sustainable renewable fuels</b>	
Promoting domestic biofuel production by	
<ul style="list-style-type: none"> <li>introducing a targeted quota for advanced biofuels in the greenhouse gas reduction mandate</li> <li>strengthening the financial support to the industries' climate transition by increasing the yearly budget for the "Industrial Leap", (Industriklivet<sup>1</sup>).</li> </ul>	

<sup>1</sup> Within *Industriklivet*, grants can be made for feasibility studies, research, pilot and demonstration projects and investments

Proposals per area of action – road transport	Ranking
<b>Proposals concerning a transport-efficient society</b>	
The efficiency package – bargained agreements in which municipalities, regions and the State implement measures to contribute to a transport-efficient society	1
Lower speed limits in densely populated areas	1
Expand means of state co-financing of Step 1 and Step 2 measures <sup>2</sup>	3
Make the Swedish Ordinance (2015:579) on support for promoting sustainable urban environments applicable to sustainable goods shipments	4
Exercise regulatory oversight to eliminate obstacles and facilitate telecommuting	5
<b>Proposals concerning energy-efficient road vehicles</b>	
Facilitate home charging – investigate Right to Charge	1
Extend the climate premium for heavy lorries and study increased level of support	2
Divide environmental zone class 3 into one for lorries and buses and another for passenger cars	3
Introduce a temporary scrapping premium targeting private persons owning and driving old passenger cars	4

**Table 3. Proposals affecting maritime transport – compilation**

Proposals per area of action – maritime transport	Ranking
<b>Proposals concerning sustainable renewable fuels</b>	
Develop the requirements for government agencies' vessel fleet	1
Investigate national requirements for fuels for small vessels	2
<b>Proposals concerning a transport-efficient society</b>	
Expand and extend the task assigned to the national maritime transport coordinator so that it includes work on climate transition within maritime transport	1
Introduce a transition programme as per the Norwegian model	2
Introduce consulting support for greener maritime transport as per the Norwegian model (Service office)	3
<b>Proposals concerning energy-efficient vessels</b>	
Expand the climate requirements in the procured domestic ferry traffic to Gotland	

<sup>2</sup> Step 1 measures are measures that can affect the need for transport and travel as well as the choice of mode of transport. Step 2 measures are measures that lead to a more efficient use of the existing infrastructure.

**Table 4. Proposals affecting aviation – compilation**

Proposals per area of action – aviation	Ranking
<b>Proposals concerning sustainable renewable fuels</b>	
Procure sustainable aviation fuel for civil servants' business trips by air	1
Procure sustainable aviation fuel for state air transport	2
Set requirements for reduced climate impact in government air traffic procurements	3
<b>Proposals concerning energy-efficient aircraft</b>	
Investigate investment subsidy for supply of electricity to electric aircraft	1
Investigate support for purchasing fossil fuel-free aircraft types or feasibility of leasing/renting	1

### Total effects on greenhouse gas emissions

Compared to the reference scenario in the climate report from March 2022, we find that our proposals would result in limited additional climate effects up to 2030, and thus would have little impact on the 2030 objective. However, these proposals would affect the ways in which we achieve that objective. The objective can be achieved at a lower socioeconomic cost for the climate transition based on more efficient use of sustainable renewable fuels, a more transport-efficient society, and more efficient vehicles and crafts.

The proposals would have a greater impact on greenhouse gas emissions during the period from 2030 to 2045, as several of them pertain to social planning where the effects take longer to be seen. The broad-based investigation of the greenhouse gas emission reduction mandate and an emission trade system that we are proposing is intended to lead to systems that phase out fossil fuels and leads, in principle, to zero emissions from transport operations by no later than 2045. Other proposals are intended to enhance the robustness of the transition, with emissions also being reduced via more efficient vehicles and transport operations. But they are also intended to reduce the socioeconomic costs of transition, while at the same time contributing to the attainment of other objectives, such as reduced emissions of nitrogen oxides, improved traffic safety, and greater social sustainability.

### Other effects of the proposals

In general, the greatest effects on the national budget are tied to the indirect effects of the proposals on revenues from fuel-related taxes (energy tax, carbon dioxide tax, VAT). This results in part from the fact that these proposals lead away from the use of heavily taxed fuels such as petrol and diesel, and in part from the fact that the scope of the transport operations, and in turn fuel usage, will be altered.

The proposals considered to have the greatest direct budgetary effects comprise those concerning a temporary scrapping premium for private persons owning and using old passenger cars, an extended climate premium for heavy lorries, a strengthening of the government investment *the Industrial Leap* (Industriklivet), and the procurement of sustainable aviation fuel for civil servants' business trips by air. The proposals to reduce emissions from state vessels and procured ferry traffic to Gotland would also have direct consequences for the expenditure side of the national budget.

Some proposals entail that municipalities and, to some extent, regions, would be given new opportunities to implement climate policies. The economic results of such measures would depend entirely upon how such actors choose to use those opportunities. The proposal directly considered to have economic consequences for municipalities is the one that would lower speed limits in densely populated areas.

Transport Analysis considers that the vast majority of the proposals would have no consequences in terms of municipal self-government. The proposals that would have some effect comprise the proposal to lower speed limits in densely populated areas and the proposal to expand the availability of state funding for Step 1 and Step 2 measures.

We believe that the proposals and the overall orientation of the climate transition process for the transport sector will have both positive and negative effects in terms of military and civil defence. We find that

- the ability to receive and provide help to other countries must be safeguarded,
- the electrification process increases the need for a robust supply of electricity and expanded electricity preparedness,
- access to fuels is a key issue, and our fuel preparedness needs to be adapted, and
- that a resource- and transport-efficient society can enhance the continued development of our total defence.

## **Input to the government**

We will provide the following input to the government in the continued effort to formulate the next national climate policy action plan.

### **Importance of being proactive in international negotiations and at the EU level**

The proposals we have put forward are mainly national and affect the means available to achieve our Swedish climate objectives. They could serve as models for other countries in terms of their taking action and could thus have an indirect effect on the global climate objectives as well. Transport operations, by their nature, cross national borders, and international regulations are consequently decisive for a successful transition. Sweden's role as an active and proactive actor in the development of regulations within both the EU and international bodies is consequently a very important undertaking, and one that could impact the means available to achieve both national and global climate objectives.

### **Taxes are an effective means of steering towards climate transition**

Although Transport Analysis' assignment did not include offering proposals in the area of taxation, we would note that taxes generally offer an effective mean of steering towards climate transition. It is consequently important that the ways in which taxes are designed also be given a role in the upcoming climate policy action plan. In this project we have chosen to discuss different taxes and the functions they can perform.

### **Research and innovation have an important role to play in the climate transition**

New technologies and ways of looking at social development can result in solutions that affect how we live and work, and the greenhouse emissions to which this gives rise. We can see that research and innovation are needed in all three areas of action. Analyses of how research and innovation should be carried out, where the greatest needs are present, and whether the initiatives in progress are sufficient should be conducted within the framework of ordinary strategic processes, where priority is given to such research areas and programmes, and to their scope.



### **Importance of monitoring**

The climate transition is taking place in a society and an outside world that is constantly changing. Such changes may take the form of dramatic events such as the Covid pandemic or the ongoing war in Ukraine, as well as more gradual phenomena such as digitalisation or the increasingly service-based economy. Such changes affect the ways in which the policy instruments work, and the effects they have. The policy instruments consequently need ongoing monitoring and assessment in order to determine whether they are having the intended effects, or whether they need to be changed.

### **A transport-efficient society requires more**

Creating a transport-efficient society requires commitments and actions from many quarters, such as local, regional and national actors, as well as within other areas, such as economic and labour market development and social and urban planning. Although we have highlighted a number of proposals in this area, there is an ongoing need to analyse the role of the State and its policy instruments in this context. For example, what role should the State have in ensuring good public transport accessibility, and what tax policies should be pursued to contribute to a more transport-efficient society?

### **On the continued work**

- Because this assignment has been wide-ranging, encompassing the entire arsenal of transport policy measures in the climate area (excluding taxes and with an emphasis on domestic transport operations), we have not had time to study many proposals thoroughly, and further study is needed.
- Transport Analysis and a number of government agencies have been tasked with assisting the Swedish Government Offices in the continuing effort to prepare a national climate policy action plan. We can then continue to develop the design and impact assessments of proposals and consequences for, for example the national budget, as needed.

### **Transport Analysis' method**

Transport Analysis has carried out this task via various subprojects involving participants from the agencies that have assisted Transport Analysis. Coordination between the subprojects has occurred on an ongoing basis. In this effort, each subproject has endeavoured to map and analyse current policy instruments and proposals created within earlier studies and processes, monitored developments in the outside world, and engaged in dialogue with among others, government agencies, industry organisations and special interest groups. Based on this, analyses were then performed in order to ultimately generate proposals.

Transport Analysis is a Swedish agency for transport policy analysis. We analyse and evaluate proposed and implemented measures within the sphere of transport policy. We are also responsible for official statistics in the transport and communication sectors. Transport Analysis was established in 2010 with its head office in Stockholm and a branch office in Östersund.



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