

1. Transport

Concrete actions taken and specific progress made in implementation

Travel and transport contribute to a desirable social trend that entails increased freedom to live and spend our time where we want and at the same time have access to a good labour market. Reducing travel is therefore not an objective in itself. At the same time it is crucial that the transport system is designed so that the need for travel and transport can be met in a way that stimulates and creates good conditions for solutions that are more climate-smart, energy-efficient and safe.

The aim should be for it to be possible for cars and other vehicles to be used without having an adverse impact on climate and the environment. Road vehicles that run only on fossil fuels should be phased out and replaced by vehicles that are not dependent on such fuels. Sweden has set a target of having a vehicle fleet that is not dependent on fossil fuels by 2030.

A number of different measures need to be taken to reduce greenhouse gas emissions from the transport sector. There is no single measure that solves the whole problem. Energy efficiency in road vehicles, aircraft and ships needs to increase, fossil fuels need to be replaced by renewable fuels and energy carriers, such as electricity and hydrogen gas, the various modes of transport need to be utilised and coordinated more effectively and travel by public transport needs to be encouraged. It must also be more attractive to travellers and transport buyers to choose climate-efficient alternatives. Society as a whole needs to become more transport-efficient, so that climate-efficient choices are made easier.

Incentives for all the changes mentioned above are created by using instruments with a general effect, such as taxes on fossil fuels and emissions trading. Instruments with general effects need, however, to be supplemented by targeted instruments, for example in the form of emissions requirements and standards, as well as support for the development of new technology, in order to clear the way for the technical changes that need to be made. Long-term investments in infrastructure and other spatial planning need to be focused on creating the necessary conditions for the development of an increasingly energy-efficient transport system.

Significant work to reduce the dependence of the transport sector on fossil fuels has already been initiated and a broad range of policy instruments are already in place (see Chapter 7).

Lessons learned

Economic instruments in the shape of taxes, charges and rebates have proved powerful. The experience obtained is that relatively small differentiations in a charging scheme can have significant effects. It appears that the signal, for example in the shape of environmental differentiation that favours the environmentally best alternatives, is just as important as the absolute amounts. Another lesson learned is that a combination of different instruments is often required to bring about changes. The lowering of tax for renewable vehicle fuels, the green car rebate and lowered benefit values for green cars, for example, have led to a dramatic rise in sales of fuel-efficient cars and cars that can run on renewable fuels.

An important principle of transport policy is that it is travellers or transport buyers themselves who choose what form their travel or transport should take. The switch to a sustainable transport system should therefore, in addition to economic instruments, be based on the commitment that exists today among the public and companies. More and more people are also taking increased responsibility for reducing the climate impact of their transport choices. Haulage firms are training their drivers in eco-driving, which results in gains both for the climate and for the company in the shape of reduced fuel costs. Added to this are other benefits such as increased road safety and a better working environment. Transport buyers require carriers to have quality-assured their transport from the point of view of the environment and road safety. Many companies and organisations have set targets and made commitments for climate impact reduction.

The significance of international cooperation cannot be overestimated. The Government's intention is that Sweden should be a driver in EU efforts and other international activity. Transport, like environmental problems, is not confined by national borders. Successful international cooperation is crucial if energy efficiency is to be increased, dependence on fossil fuels is to be broken and the environmental impact of traffic is to be reduced.

Recent trends and emerging issues

The transport system today is almost entirely dependent on fossil fuels and is dominated by road transport. Emissions from domestic transport accounted for almost 32 per cent of total emissions in Sweden in 2007, which is a high proportion in international terms. The proportion for the EU15 is around 21 per cent. The most significant explanation for the high proportion accounted for by transport in Sweden is that our production of power and heating, in contrast to other countries, is largely fossil-free

Greenhouse gas emissions (principally carbon dioxide) from domestic transport have increased by around 12 per cent in Sweden since 1990 as transport volumes have increased and despite vehicles having become more fuel-efficient. The increase is principally due to growth in the volume of truck traffic. In absolute terms, however, emissions from cars continue to dominate.

The rate of increase has, however, fallen in recent years as a result of the increased introduction of biofuels. In 2008 carbon dioxide emissions from the transport sector fell by 1.6 per cent. Renewable fuels accounted for around 5 per cent of energy use by transport in 2008, principally as a low blend in petrol and diesel. Cars have become more energy-efficient and emit less and less carbon dioxide per kilometre. The proportion of green cars has risen. Around a third of all new cars sold in Sweden today are green cars. The term green cars means fuel-efficient petrol and diesel cars with carbon dioxide emissions not exceeding 120 g/km or cars that can run on a renewable fuel.

Major constraints and challenges

The climate issue is a great challenge, but also offers great opportunities for the transport sector. More energy-efficient vehicles and other transport solutions must be developed. Oil must be replaced by non-fossil energy sources. Demand for climate-efficient transport solutions will increase. It must therefore be easy for travellers and transport buyers to choose the climate-efficient alternatives. All modes of transport will continue to be needed in the future, but they will have to work together in a significantly better way than at present. The infrastructure needs to be developed so that it supports intermodal transport solutions. Sustainable transport solutions in cities have to be developed as a part of an integrated sustainable urban development. There are also great opportunities to develop and export climate-efficient solutions.

2. Transport policy objectives and principles

Policy objectives

The overarching objective of Swedish transport policy is to ensure socioeconomically efficient and long-term sustainable transport provision for the public and the business sector throughout the country.

The overarching objective is supported by two objectives of equal measure: a functional objective of “*Accessibility*” and a consideration objective of “*Safety, environment and health*”(Government Bill 2008/09:93).

Accessibility

The objective of accessibility emphasises that the design, function and use of the transport system should contribute to assuring everyone of fundamental accessibility of good quality and usability and contribute to development capability throughout the country. The transport system has to be gender-equal, in other words meet the transport needs of women and men to an equivalent degree.

The transport system also has to be designed so that it is usable for people with disabilities and so that the safety and mobility of children is improved.

Safety, environment and health

In relation to work on safety, the requirement continues to be to adapt the transport system so that no one is killed or seriously injured as a consequence of traffic accidents. The number of fatalities and serious injuries due to traffic accidents in the different modes of transport must continue to fall. The number of people killed in the road transport system, for example, should be reduced by half and the number of people seriously injured should be reduced by a quarter between 2007 and 2020.

The transport sector has to contribute to the national environmental quality objective *Reduced Climate Impact* being attained by gradually improving energy efficiency in the transport system and breaking the dependence on fossil fuels. In 2030 Sweden should have a vehicle fleet that is independent of fossil fuels. The transport sector should also contribute to other national environmental quality objectives being attained and to reduced ill-health. Priority is given to the interim targets in environmental policy, where development of the transport system is of great significance to the prospects of attaining set objectives.

Policy instruments

The following policy instruments are among the most important ones used to attain the transport policy objectives:

- economic instruments
- laws and regulations
- organisation and control of government agencies
- infrastructure planning
- research, development and demonstration

Five transport policy principles guide the choice of instruments to attain the transport policy objectives:

- customers must be given wide freedom to choose how they wish to travel and how shipments should be made

- decisions should be taken on whether transport provision should be made in decentralised forms,
- collaboration in and between different modes of transport must be promoted,
- the competition between different operators and transport alternatives must be promoted,
- the socioeconomic costs of traffic must be a fundamental aspect when transport policy instruments are designed.

Concrete actions taken and specific progress made in implementation

Programme for a vehicle fleet independent of fossil fuels

Energy and carbon dioxide taxes

Taxation is the primary instrument for reducing carbon dioxide emissions from those parts of society that are not covered by the EU emissions trading scheme, such as road traffic.

Petrol and diesel are subject to energy tax, carbon dioxide tax and value-added tax (VAT). The level of energy tax and carbon dioxide tax is shown in Table 1. Energy and carbon dioxide taxes are adjusted annually in line with the consumer price index. Biofuels at present are completely exempt from energy and carbon dioxide tax. The Government has stated that the general tax exemption should cease no later than the end of 2013, when the state aid approval for the measure from the European Commission expires.

	Energy tax	Carbon dioxide tax	Total (SEK/litre)
Petrol, environmental class 1	3.08	2.44	5.52
Diesel, environmental class 1	1.33	3.01	4.34

Table 1. Tax rates on petrol and diesel in SEK/litre at 1 January 2009.

The Government has given notice in the Climate Policy Bill that the energy tax on diesel should be raised in two stages by a total of SEK 0.40 per litre. A first rise of SEK 0.20 is intended to take effect on 1 January 2011 and a second of SEK 0.20 on 1 January 2011.

Carbon dioxide-based vehicle tax

Vehicle tax for cars manufactured in 2006 or later is differentiated according to the car's carbon dioxide emissions. Vehicle tax for older cars

and trucks, buses and motor homes is principally based on the vehicle's weight.

Vehicle tax in the carbon dioxide-based system is levied at a base amount of SEK 360 plus a carbon dioxide charge of SEK 15 per gram of carbon dioxide over 100 grams that the vehicle emits per kilometre in mixed driving. The carbon dioxide charge for cars that can run on a fuel mixture which predominantly consists of ethanol or wholly or partially on a gas other than LPG is SEK 10 per gram of carbon dioxide.

To reinforce the move towards lower carbon dioxide emissions in the carbon dioxide-related vehicle tax, the Government has proposed that the amount charged per gram of carbon dioxide emitted by the car per kilometre be raised from SEK 15 to 20. For cars that can run on ethanol or gas, it is proposed that the current charge of SEK 10 per gram of carbon dioxide should remain.

At the same time it is proposed that the level of emissions at which the carbon dioxide charge starts to be levied be raised to SEK 120 grams of carbon dioxide per kilometre. This provides an added incentive to buy cars with low carbon dioxide emissions.

It is proposed that light goods vehicles, light buses and motor homes be brought within the coverage of the carbon dioxide-based vehicle tax from 1 January 2011. This will only apply to new vehicles.

Tax exemption for green cars

From 1 April 2007 to 30 June 2009 there was a state green car rebate of SEK 10,000 which was paid to private individuals who purchased a green car. The green car rebate has made a great contribution to the sharp increase in sales of fuel-efficient cars and cars capable of running on renewable fuels.

The Government has proposed that new green cars should be exempt from vehicle tax for five years in order to further stimulate purchases of green cars when the rebate scheme comes to an end. The definition of green car used today for the green car rebate should also be the definition that applies to the cars that initially are to be exempt from tax. This means, for example, that petrol and diesel-engined cars emitting no more than 120 grams of carbon dioxide per kilometre in mixed driving will be exempt from vehicle tax.

A difference in comparison with the green car rebate is that all cars are covered, regardless of who the owner is. The definition of green car should be gradually tightened in the future so that the proportion of cars sold that are covered by the tax exemption remains approximately constant. The

best cars from the environmental point of view consequently will also be encouraged. It is proposed that the tax exemption comes into force on 1 January 2010 but applies retrospectively to green cars registered from 1 July 2009.

Reduced benefit values for green cars

When an employer allows an employee to take part of their remuneration in the form of what is known as car benefit, instead of ordinary salary, this, like other benefits, is subject to special taxation of benefits. Someone who chooses a green car as their “benefit car” is subject to lower benefit taxation than someone who chooses another car. As approximately 24 per cent of cars sold in Sweden are benefit cars, this instrument too is significant. Cars that can run on ethanol (E85) are eligible for a reduction in benefit value of 20 per cent in comparison with an equivalent conventional car. Cars that can run on electricity (including hybrid cars) are eligible for a reduction of 40 per cent.

The Swedish vehicle cluster

To ensure that the Swedish vehicle cluster develops and maintains its competitive position as a world leader, particularly in the areas of climate and safety, it is proposed in Government Bill 2008/09:95, *The State as principal for companies with research and development activities and other activity in the vehicle cluster etc.* that vigorous measures be taken to deal with the crisis in the automotive industry. These measures include long-term initiatives both to boost the competitiveness of companies and to meet climate challenges. Initiatives are required for more environmentally sound vehicle technology and fuel development. Such efforts involving central government and companies in the vehicle cluster are crucial.

The intention is to invest on commercial grounds in research and development for example in companies, research institutes and universities. The Government considers that the State should undertake this activity in the form of a company. The new state-owned company will have SEK 3 billion at its disposal.

1 March 2008 marked the start of a new cooperation project to launch the next generation of green cars (the Plug-in Hybrid Electric Vehicle or PHEV project). This is a cooperative effort between Volvo Car Corporation, Vattenfall AB and ETC AB. The project is being carried out with support from the Swedish Energy Agency. It will involve the use of plug-in hybrid models from the car manufacturers, models the car-makers intend to put on the market within a few years. A total of SEK 62 million is being invested in the project, of which the Swedish Energy Agency is contributing SEK 20 million. Another project is concerned with the development of a hybrid bus with up to 35 per cent lower fuel consumption

in cooperation with Volvo Buses. The total cost of the project is SEK 466 million, of which the Swedish Energy Agency is providing SEK 116 million.

Obligation for filling stations to supply renewable fuels

Since the spring of 2006 all larger filling stations have been obliged to supply at least one renewable fuel under Law 2005:1248 on the obligation to supply renewable fuels. The statutory requirement has resulted in particular in an increase in the supply of E85. The number of filling stations stocking ethanol has risen from 300 to 1300 since the law came into effect. By 2010, 60 per cent of all filling stations will be covered by the requirement.

The law has been supplemented by a specially targeted grant for filling stations for renewable fuels other than ethanol, as these are more expensive to build than filling stations for ethanol, see Ordinance (2006:1591) on state aid for the promotion of distribution of renewable fuels. A sum of SEK 150 million was earmarked for 2006-2007, but the Government has since extended the aid.

Increased low blending of biofuels

All Swedish petrol contains 5 per cent ethanol, which is the maximum permitted proportion under the former Fuel Quality Directive. Under the new Directive adopted in December last year it becomes possible to blend up to 10 per cent ethanol into petrol and up to 7 per cent FAME (biodiesel) into diesel. Sweden was prominent in pushing for this decision. The Swedish Government is therefore keen to implement the Directive in Swedish law quickly so that it become possible to blend in 10 per cent ethanol and 7 per cent FAME. The implementation time depends on how the loss of tax revenue can be offset.

Continued investments in second-generation biofuels

In recent years the Swedish State has invested between SEK 120 and 170 million annually in research and development of biofuels. The Swedish Government intends to continue supporting the development and testing of second-generation biofuels. More climate-efficient and cost-effective production of biofuels is of key importance if the EU target of 10 per cent renewable energy for the transport sector is to be met. A commercial breakthrough is dependent on ability to test the technology in pilot plants. The Government is therefore setting aside a further SEK 875 million for the period 2009-2011 for the commercialisation of new energy technology, such as demonstration plants for biofuels.

Abolition of customs tariffs for low-blend ethanol

The EU applies duties on the importing of ethanol. Imports of ethanol for example from Brazil based on sugar cane mean that the carbon dioxide reductions can be made in a more climate-efficient and cost-effective way with biofuels. Sweden considers that customs tariffs for ethanol as a low blend in petrol should be abolished. Approval from the EU is needed before this can be done, and the Government judges that approval can be obtained relatively quickly.

At the same time it is important to monitor closely how increased biofuel production affects the global carbon balance and biodiversity. This is where the EU's sustainability criteria for biofuels come in. Within the EU, Sweden is pressing for sustainability criteria that do not create obstacles to trade and that ensure that biofuels are produced sustainably.

Public procurement of energy-efficient and safe vehicles

With effect from 1 February 2009, government agencies are only permitted to purchase green cars that additionally fulfil stringent road-safety requirements (Ordinance on environmental and road safety requirements for government agency cars and car travel, SFS 2009:1). When the government agencies procure taxi travel or car hire, it is also green cars that have to be chosen. The Government intends the requirements that are imposed to be usable by municipalities, county councils, state-owned companies and the business community.

Binding emission requirements in the EU for car manufacturers

An agreement was reached in December 2008 between the Council and the European Parliament on binding emission requirements for car manufacturers of an average maximum of 130 grams of carbon dioxide per kilometre for new cars. This requirement will be phased in over time between 2012 and 2015. The emissions requirement applies as an average figure for new cars for car manufacturers registered in the EU. In addition, agreement was reached on a long-term target of 95 grams per kilometre by 2020.

The transport infrastructure

The development of the transport infrastructure should be focused on creating communications based on the needs of travellers, businesses and society which at the same time are compatible with ambitious climate and environmental targets. On 30 September 2008 the Government presented the infrastructure bill *Travel and transport in the future – infrastructure for sustainable growth* (Government Bill 2008/09:35) for 2010-2021. This bill forms part of the long-term planning process for measures in the transport infrastructure. The process will lead to new transport infrastructure plans

for the period 2010-2021. With investments and designated funds for operation and maintenance, it is estimated that a significant increase in capacity by 2020 is possible for the railways.

An intermodal approach is the key to long-term infrastructure planning. A transport system that works well utilises all modes of transport in an effective, safe and environmentally sustainable way, both separately and in combination.

Sweden's heavy dependence on trade, together with its geographical position, means that it is necessary to have a clear international perspective when measures that affect the freight transport system are discussed. Sweden is therefore an active party in EU transport policy work and presses in particular for better conditions for international freight transport by road (market opening and harmonisation of systems). Sweden is also urging investments in other countries that link it more closely to the rest of Europe, such as the Fehman-Belt link and the marine motorways on the Baltic and the North Sea. To further ease international transport and reduce its environmental impact, it is also important for the national priorities to lead to better coordination between the modes of transport and to take account of connections to strategic nodes, such as freight terminals and ports.

Measures to increase cycling

The bicycle is a mode of transport that offers many advantages. Measures that lead to increased travel by bicycle therefore contribute to attaining several social objectives. Increased cycling contributes to reducing the environmental impact of travel, results in less congestion and has positive effects on public health.

After the sharp rise in car use in the early 1960s cycling became dangerous and unpleasant in most traffic environments. The proportion of all journeys made by cycling has gradually fallen, as has the proportion of total distance travelled accounted for by cycling. Cycling as a mode of transport is now the object of analysis primarily at local level. The Government considers that it is now important to strengthen the role of the bicycle again as a natural part of the planning of the transport system, including on the basis of a regional and national perspective. It should be possible to view cycling as an attractive alternative for part or the whole of a journey. To bring this about there is a need for initiatives in a number of areas – infrastructure, planning and follow-up, rules and signposting, organisation and collaboration, knowledge building and communication.

The single most important measure to increase cycling is to create an improved infrastructure for cyclists. Initiatives that can contribute to increased cycling will be considered in the transport infrastructure plans drawn up for the period 2010-2021.

Boost for public transport

Public transport is an important means of fulfilling the transport policy objectives and consequently achieving sustainable growth throughout the country. For the best possible results to be attained, public transport must be adapted to the changes taking place in society.

The railways represent an increasingly important part of public transport. However, they need to be modernised to meet rapidly increasing requirements. The Swedish Government sees increased competition as an important and necessary element in the modernisation of the railway market. Competition in a market that works well can lead to rapid innovation, pressure on prices and effective use of society's resources. It is therefore important that more and competing actors enter the railway market and are given opportunities to offer consumers different transport solutions. The Government hopes that this can lead to increased rail travel, which will also benefit the climate.

The stage-by-stage process is being initiated with abolition of the sole right of SJ AB to provide passenger services on a commercial basis. The market will then be opened for weekend and public holiday traffic on the State-administered railway network with effect from 1 July 2009. Stage three means that the whole of the Swedish railway network is opened to international passenger traffic from 1 October 2009. This will implement the EU Directive on opening the market to international passenger traffic. Finally the market for passenger traffic on the railway will be opened with effect from 1 October 2010.

To make it easier for travellers to find information on travel alternatives, those who carry out or organise transport services will be obliged to provide information on their services to a common system for information to travellers. In addition, an inquiry has recently proposed that local and regional public transport should be re-organised on the basis of a more extensive right for new operators, for example bus companies, to start up.

Green corridors

Green corridors originate in the European Commission's initiative to develop a greener transport policy that meets the climate challenge and at the same time improves the EU's competitiveness. The Swedish Government wishes to assist towards a strong boost for development in the

area of transport through collaboration. EU transport policy can be developed through international partnerships that create green transport corridors to and from the Nordic Region.

A green corridor features sustainable logistic solutions with a proven reduction in environmental and climate impact, high safety, high quality and efficiency. Modes of transport interact optimally in green transport corridors.

The Logistics Forum took the initiative for the development of green corridors as a project and form of cooperation. The Logistics Forum was established by the Government in 2007 as an advisory body chaired by the Minister for Infrastructure, Åsa Torstensson. The Logistics Forum is intended as a place for the exchange of experience, views and advice between representatives of the various stakeholders in the area of logistics. It has around 25 members representing large transport buyers/goods owners, the transport industry and research in the area of logistics and transport.

Urban transport planning and policies

Sustainable transport solutions as an integrated part of sustainable urban development

The challenge of climate change stresses the need for a sustainable development of cities and urban areas. The development of cities, including the location of activities, has to be done in a way that facilitate a development and increased use of climate efficient transport alternatives. This implies *inter alia* a better co-ordination between spatial planning and the planning of the transport system.

The Swedish Government has taken several initiative to promote a sustainable urban development. The Delegation for Sustainable Cities has been appointed by the Government for the period 2008-2010. The Delegation should stimulate work for urban environments that are attractive and function well over the long term, where high quality of life goes hand in hand with a better environment, economic growth, social cohesion and reduced climate impact. The Delegation cooperates with municipalities, market actors and other parties. Work on sustainable urban development builds on integrated cross-sectoral planning, higher levels of ambition and the use of new technology. The Government has given the Delegation for Sustainable Cities the task of managing and awarding the financial support for the development of sustainable cities. SEK 340 million will be available in grant funding for 2009-2010.

Internationally, Swedish knowledge on sustainable urban development and green technology is presented through the concept SymbioCity. SymbioCity is an export platform that brings together Swedish companies with long experience of environmentally friendly construction and sustainable urban planning.

Congestion tax

To reduce congestion and improve the environment, a congestion tax was introduced in Stockholm with effect from 1 August 2007. The revenue is to be used for investments in the road network in the Stockholm region. The scheme was first introduced on a trial basis over the period 3 January - 30 July 2006 and was then evaluated. Advisory referendums on whether a congestion tax should be introduced were also held in the Stockholm region.

Congestion tax is payable for Swedish-registered cars driven into and out of central Stockholm between the hours of 6.30 am and 6.29 pm from Monday to Friday. The tax is not charged on public holidays, the day preceding public holidays or during the month of July. During periods when congestion tax is payable cars are automatically registered at what are known as pay stations. Each vehicle passage into or out of central Stockholm costs SEK 10, 15 or 20, depending on the time of day. The maximum amount payable per day per car is SEK 60.

The number of vehicle passages through the pay stations fell by around 22 per cent during the congestion tax trial period (3 January - 31 July 2006) in comparison with traffic levels in 2005, based on analyses of traffic intensity during April. Following the trial period up to the re-introduction of the congestion tax (1 August 2007) traffic did not ever return to the 2005 level but remained 6-8 per cent lower than the level prior to the trial. Over the period August-October 2007, i.e. after the re-introduction of the congestion tax, traffic levels on average were 18 per cent lower than during the corresponding period of 2005.

Some vehicles are exempt from congestion tax, including emergency vehicles, buses with a total weight of at least 14 tonnes, motorcycles and cars with diplomatic registrations. Cars that can run on electricity or renewable fuels, known as green cars, are also exempt from congestion tax. The exemption for green cars applies for a limited time up to the end of July 2012 and for cars registered before 1 January 2009. Cars registered after this date are not exempt from congestion tax. The reason why the exemption for green cars was limited in time is that congestion tax has to continue to fulfil its main purpose of reducing congestion in the future. The number of green cars in Stockholm has increased rapidly and today

accounts for a large proportion of crossings through the pay stations for congestion tax.

Other measures

Ecodriving

There is significant potential to reduce carbon dioxide emissions in all modes of transport by using vehicles, ships and aircraft in a more energy-efficient way. Training in eco-driving of road vehicles can result in a lasting reduction in fuel consumption of 5-15 per cent depending on the drivers' habits prior to training and how well it is followed up. Eco-driving also offers road safety benefits as drivers learn how to plan their driving better. This is also the reason why knowledge of eco-driving is now required both in instruction and examination for all driving licence qualifications. The Government has additionally proposed that knowledge of eco-driving be introduced as a requirement in the EU Driving Licence Directive, for both instruction and examination.

Eco-driving can also be applied to rail traffic. 'Eco-driving Rail' is used, for instance, by Green Cargo, which has also produced a training package in conjunction with the Swedish National Association of Driving Schools. There is also potential in aviation for improved energy efficiency and lower carbon dioxide emissions with the existing aircraft fleet, for instance through straighter flight paths and what is known as green flying. The issue of more environmentally sound piloting of ships is also attracting increasing attention. Initiatives to reduce fuel consumption through eco-driving are being taken, for instance, by ports and shipping companies.

Speed limits on roads

The Government amended the rules in January 2008 to make it possible for decision-making authorities to apply speed limits in steps of 10 in the range of 30-120 kilometres per hour. The reason for doing so is that more speed limits make more efficient use of the road transport system possible. New speed limits can also contribute to reducing the numbers of deaths in road traffic and at the same time make a positive contribution to attaining the carbon dioxide target.

Automatic road safety control is an automatic surveillance system for monitoring speed on sections of road that present a high accident risk and on which, prior to the implementation of road safety cameras, vehicles travelled at speed. The system is being gradually expanded. At the end of 2008 there were around 980 permanent checkpoints and 25 mobile units. The average speed on monitored sections has fallen by about 5-8 per cent,

which is favourable in terms of both road safety and meeting the carbon dioxide target.

Aviation

Domestic aviation in Sweden has decreased in extent in recent years. Projections point to a continued decline up to 2020. The reasons for this are largely structural. Several of the airports that have been closed down are close to lines on which high-speed trains were introduced. The Government estimates that with continued expansion of the railways air travel will continue to lose ground to more environmentally sound rail travel.

Aviation will be included in the EU's emissions trading scheme from 2012. Both flights within the EU and flights to and from the EU will be covered by emissions trading.

Emissions from international air travel are not at present included in countries' commitment under the Kyoto Protocol. The Swedish and EU objective is for greenhouse gas emissions from international aviation to be included in the international climate agreement to be adopted in Copenhagen in December 2009.

Shipping

Shipping is an energy-efficient mode of transport. Greenhouse gas emissions per unit of weight and distance are significantly lower than for road transport, for example. The Achilles heel of shipping is emissions of sulphur and nitrogen oxides, which contribute to acidification. Sweden has therefore introduced environmentally differentiated fairway dues and port dues in order to encourage the use of low-sulphur oil and cleaning equipment on ships. Sweden has also been instrumental in the IMO in bringing about tighter emissions requirements for sulphur and nitrogen oxides which were adopted in 2008.

Emissions from international maritime transport are not at present included in countries' commitments under the Kyoto Protocol. The Swedish and EU objective is for greenhouse gas emissions from international shipping to be included in the international climate agreement to be adopted in Copenhagen in December 2009.