

# The Commission for Sustainable Development. Transport Report. 2010

## Rapporteur: Estonian Council of Environmental NGOs

### Executive Summary

The aim of the Report was to evaluate the Estonian transport system and mobility trends from the point of view of sustainable development and to give recommendations for a more sustainable transport policy. The report focused on several aspects in regard to which the government could enhance transport energy efficiency and increase public transport use, encouraging cycling and walking instead of intensive car use.

The report analyses the Estonian transport system and mobility patterns based on the EU's sustainable transport indicators and compared to the EU average and trends in neighbouring countries like Finland and Latvia. The BASE scenario and 13 sustainable transport indicators show that if current trends continue, Estonian transport and mobility will not achieve goals for more sustainable transport. The current transport policy in Estonia does not support the achievement of EU-level commitments in improving transport energy efficiency and limiting greenhouse gas emissions by 2020. At the same time, Estonia has great potential to increase transport energy efficiency and to develop a more sustainable transport system.

#### Main results of analysis

1. When Estonian transport indicators were compared with the EU's sustainable transport indicators, it was revealed that car use has increased in line with economic growth. Road freight has even increased more than GDP, while rail freight has decreased considerably. Transport energy demands and GHG emissions from transport have increased at a similar pace. The Estonian economy is transport-intensive, and if current trends continue Estonia will become one of the most transport energy-intensive Member States of the EU. The poor fuel economy of new cars and rapid growth of public transport prices compared to car price indexes are indicative of inefficient energy use and a non-sustainable transport policy. One positive development is the decrease in fatal traffic accidents. This has raised Estonia from the bottom three to the EU average. Emissions of ozone precursors have also decreased significantly, but the air quality in Estonian cities has deteriorated. The amount of particle emissions has increased because of increased car use, even though the EU average shows a decreasing trend.
2. Comparing the Estonian situation to other Member States of the EU, certain distinctions must be taken into account. Although the rate of motorisation has increased rapidly, transport energy demand per capita in Estonia is still relatively low compared to the EU average. Also, GHG emission levels per capita are lower than the EU average. However, several indicators indicate unsustainable trends in relation to the EU average: for example, the Estonian economy is more transport- and energy-intensive; the amount of particle emissions is relatively high; and the CO<sub>2</sub> level of new registered cars is among the highest in Europe (in 2009 the average CO<sub>2</sub> level for new cars in Estonia was 170 g/km).

3. Estonia's transport and mobility trends have not been sustainable primarily due to the increase in private car use and road freight, urban sprawl and the decreasing proportion of public transport and walking in daily mobility. Road transport has increased at the same pace as economic growth, which positions Estonia as one of the most transport- and energy-intensive economies in the EU. For example, Estonia uses twice as much transport fuel per unit of GDP than average EU Member States.
4. Regardless of the rapid motorisation in Estonia, mobility patterns are still more diverse than the European average: public transport use in daily commuting is higher than the EU average (the share of walking and public transport in Estonian cities is around two-thirds of total trips). We therefore cannot say that Estonians are hopelessly dependant on private cars. For this reason it would be easier to develop public transport and alternative modes of transport and to avoid possible growth in car use rather than expecting a reduction in private car use in future.
5. Positive trends can be observed in traffic safety: the number of fatal accidents in Estonia has fallen, raising Estonia from the bottom three in the European Union to the EU average. In future, there should be a greater focus on traffic safety in urban areas and improving pedestrian and bicycle safety.
6. A quarter of Estonia's final energy demand comes from the transport sector (of which 94% are cars and trucks). Fastest growth in fuel consumption and GHG emissions was from 2004-2007, and the EU's 11% GHG emission 'growth limit' until 2020 has already been exceeded. The potential for energy savings in transport is not widely recognised or debated. Measures for better planning and the influencing of consumers' choices towards more fuel-efficient cars and sustainable modes of transport are generally absent.
7. The external costs of transport in Estonia are at least 447 million euros, an annual burden on society as a whole. 80% of these costs are related to traffic accidents, air and noise pollution and impact on the climate. The negative effects of transport on the environment and quality of life are critical in urban areas, making up as much as two-thirds of the external costs of transportation.
8. Although both national and local government strategies claim to give priority to public transport, cycling and pedestrian traffic and promise to support alternative modes of transport, financing priorities often do not match these goals.
9. The report showed that prices related to car use have increased more slowly than public transport ticket prices. Average prices for purchasing cars decreased by 30% from 2004-2009.
10. The fuel excise duty has not proven to be a sufficient measure to achieve a modal shift and reduce the environmental impact of transport. Although the duty has been raised nine times in the last 15 years in Estonia, it has not guided consumers towards more efficient cars or tackled increasing energy demand in transport (gasoline excise tax almost doubled from 2000-2010, but in real terms fuel prices have remained at the 2000 level).
11. New cars registered in Estonia consume app. 20% more fuel than the average for new cars in the EU. More than half (51%) of these new cars fall in the E-G energy classes, showing no improvement in fuel efficiency compared to the cars sold in Estonia 15 years ago. The EU's 2010 report on the monitoring of CO<sub>2</sub> from new cars showed that 65% of new cars in the EU already fall in the A-C energy classes i.e. they are relatively fuel-efficient. Although the choice of fuel-efficient cars has become more diverse in recent years, it is not possible to search for cars according to CO<sub>2</sub> or fuel economy indicators in Estonia's online car sales portals. The

largest urban areas in Estonia (Harju and Tartu Counties) are the leading regions for the least fuel-efficient cars. In Finland, the average new car emits 155 g/km of CO<sub>2</sub>; in Estonia, the average is 170 g/km. Examples from Finland, Sweden, Denmark and France have shown that the most effective ways of influencing consumer choices are vehicle taxes and incentives based on fuel efficiency.

12. Not even a widespread transition to electric cars in Estonia would result in a rapid decrease in GHGs. While most of Estonia's electricity continues to be produced from oil shale, electric cars using such energy source will produce significantly more GHG than the vehicles used in Estonia at present. However, electric vehicles would justify their use in urban areas and as public transport because they produce less noise and air pollution.

## Summary of transport scenarios

The report analysed three possible scenarios which focused mainly on changes in peoples' mobility, road transport demands and transport greenhouse gases (GHG) until 2020. The continuation of current trends is the BASE scenario, which was compared to the TECHNO scenario (rapid improvement in vehicle fuel efficiency) and the EFFECT scenario (modal shift scenario). The calculated 'cap' for GHGs in 2020 was set at a maximum of 11% growth compared to 2005 levels based on the European Parliament's decision to limit non-ETS sector GHG levels in the EU.

The BASE-scenario draws on assumptions that road transport in Estonia will continue to increase in a similar way as in the last 10 years, being directly linked to the rate of economic growth. A number of current road construction plans are based on such outlooks and encourage such trends in the country. If such trends continue, the same problems will remain: an increase in transport energy demands and GHG emissions; an increase in PM emissions; and further modal shift from rail to road and private car use.

The BASE scenario GHG trends exceed the set limit of 11% by 0.484 million tonnes. In order to reduce this, two policy pathways/scenarios were devised.

The TECHNO scenario analysed how the efficiency of vehicles should increase in order to limit growth of GHG emissions. This requires the rapid replacement of existing cars with more fuel-efficient ones, the introduction of eco-driving and increasing the proportion of renewable energy in the transport sector to 10%. Compared to the BASE scenario, transport energy efficiency would improve, GHG emissions would decrease (by 18%) and PM emissions would be reduced. This goal also requires the strong implementation of CO<sub>2</sub>-based vehicle taxes, incentives and other fiscal measures, which directly affect consumers' choice. Scenario measures can also be regulatory, such as limiting car parking options for cars with large fuel consumption.

The EFFECT scenario focused on influencing people's modal choices and level of car use, which would result in a slower increase in energy demand and improve the performance of other sustainable transport indicators. In this scenario the 11% GHG emissions 'cap' would require *ca* 2 million vehicle kilometres (20% of total mileage) to be tackled or shifted to sustainable modes of transport. Compared to the BASE scenario, the following indicators would improve: energy-efficiency (by *ca*

18%); decreased PM and GHG emissions (also by *ca* 18%); and the proportion of public transport, cycling and rail use would increase. Traffic safety would also improve more than in the BASE and TECHNO scenarios, as more investments would be made to enhance pedestrian and cyclist safety. The transport price index would improve too under the EFFECT scenario – modes of sustainable transport would become more competitive and transport prices would more accurately reflect environmental and health-related impact.

Implementing the TECHNO or EFFECT scenarios separately would not be feasible, as the first scenario requires the implementation of strong regulatory measures (high levels of car tax) and the second scenario requires significant changes to urban and transport system planning. Estonia's transport system will only become more sustainable if the TECHNO and EFFECT scenarios are both implemented. Before doing so, a socio-economic analysis should contemplate alternative scenarios or current development possibilities.

## Recommendations on how to achieve a more sustainable transport system in Estonia

1. Greater consistency between strategic transport goals and financing priorities
  - 1.1. The next programming period for EU funds (2014-2020) should give clear priority to public transport and integrated transport schemes. Currently earmarking 75% of fuel excise duty revenue for national road construction relegates public transport and integrated urban mobility solutions to a minor position.
  - 1.2. When planning land use in urban areas and defining locations for new housing development areas (residential and office buildings), locations with existing and good public transport networks should be preferred (i.e. areas near rail and public transport stops). This would help to improve the efficiency of existing public transport use and to avoid automobile dependency.
  - 1.3. Sustainable transport targets should be taken into account when new transport development strategies are drafted (both national and local strategies). The implementation of such targets – energy efficiency, increase in use of public transport and cycling and improvements in air quality – should be monitored. Strategic choices should be analysed when resolving transport problems and determining financing priorities. The full impact of such decisions on sustainable transport targets should be measured.
  - 1.4. A four-stage evaluation process should be considered when resolving transport issues:
    - Is it possible to resolve the transport problem by influencing demand for private car use and increasing the proportion of more efficient modes of transport?
    - Is it possible to resolve the transport problem through better use of existing infrastructure and vehicles?
    - Is it possible to resolve the transport problem via minor improvements in existing infrastructure?
    - If the answers to the previous three questions are 'no', should construction of new infrastructure be considered as an alternative solution?

In this type of decision-making process, traffic and transport problems are handled as a whole, not as single aspects of road construction.

2. Public transport, cycling and walking should be given clear priority along with maintenance of existing infrastructure and sea and rail freight
  - 2.1. Public transport and cycling should have secured funding to support the advantages of sustainable modes of transport and to decrease transport externalities. At the national level, priorities could be set through increased financing for EU projects for public transport and cycling and introducing vehicle taxation based on CO<sub>2</sub> emissions (there is currently no vehicle taxation in Estonia). In larger urban areas financing could be improved by implementing more efficient parking management and with congestion charges in Tallinn.
  - 2.2. Large companies, employers, public institutions and shopping centres should develop and implement mobility management plans which favour sustainable transport choices among their employees and customers and save on parking and company car expenses.
  - 2.3. The development of rail connections should focus on the reconstruction of existing rail infrastructure and increasing the frequency of trains between larger Estonian towns and cities (Tallinn, Tartu, Pärnu and Narva) and to larger metropolitan areas like St. Petersburg, Riga and Moscow. Buying new trains and renovating tracks is not enough to increase the competitive advantage of rail transport. Improvements in rail transport quality should be implemented along with other measures, such as planning new developments close to railway stations, internalising road transport externalities (mileage-based road charges for road freight and congestion charges in Tallinn) and improving intermodality (public transport interchange stops and 'Park & Ride' systems).
  - 2.4. Innovative solutions should be implemented which make transport changes smoother and allow better connectivity between different modes of transport modes (car sharing, bike sharing, bus-on-demand etc.).
  - 2.5. A national cycling and walking strategy should be drafted which clarifies development constraints, goals, stakeholders and parties.
  - 2.6. A common ticket system should be developed for Estonia's public transport systems.
3. In order to increase the energy efficiency of the transport sector, transport-related fiscal system should be changed and consumer choices should be influenced
  - 3.1. The introduction of energy labelling for cars which is similar to domestic electrical appliances could be used to influence consumer choices towards more fuel-efficient vehicles. Energy labelling should include online car sales portals, which would allow customers to easily search for cars according to fuel efficiency and energy class.
  - 3.2. Public campaigns should focus more on increasing consumer awareness of the impact of transport on the environment and people's health and quality of life.
  - 3.3. Measures based on car fuel efficiency and CO<sub>2</sub> emissions which reduce the demand for fossil fuels should be analysed and developed. More efficient vehicles would boost Estonia's economy and energy security and reduce the population's sensitivity to volatile oil prices. To achieve this, the following measures should be implemented simultaneously:

- public procurement conditions should clearly prioritise more fuel-efficient vehicles (national and local authorities could organise joint procurements);
- the introduction of a CO<sub>2</sub>-based registration tax or annual car tax should be considered;
- regulatory measures should be introduced so as to encourage the scrapping of fuel-consuming vehicles and the purchasing of more efficient vehicles through national programmes; and
- the use of inefficient vehicles in cities should be limited by differentiating parking fees and congestion charges.

The report was commissioned by the Sustainable Development Committee and financed by the European Social Fund and the Estonian State Chancellery from March to December 2010. It was compiled by the Stockholm Environment Institute (a member of the Estonian Environment Associations Union) in association with Tallinn University of Technology, the University of Tartu, Tallinn University of Applied Sciences and other experts in the field. The primary results and recommendations of the report were discussed among a larger council of experts on 8 October and 3 December 2010.

The full version of the report is available in Estonian:

[http://valitsus.ee/UserFiles/valitsus/SAKTRA\\_RAPORT2010kinnitatud.pdf](http://valitsus.ee/UserFiles/valitsus/SAKTRA_RAPORT2010kinnitatud.pdf)