

Estonia

UN CSD18: National Reporting on Transport

Policies and progress on transport access, including the rural population and poor

Estonia is a relatively small country as to its surface (45,227 square kilometres), yet quite sparsely populated¹. Economic activities have been concentrated in the major cities and their vicinity. The share of more environment-sparing rail transport is small as compared to road transport, especially regarding passenger traffic. The railway network is sparse and has been electrified only in the closest environs of the Estonian capital Tallinn. This situation has been caused by several factors, both objective (sparse population reduced the efficiency of rail transport in carrying passengers) and those resulting from policies and the attitudes of the population. The number of personal cars has significantly increased in Estonia within the past 10–15 years, while the development of public transport has slowed down.

The main policy documents regarding transport² are the Transport Development Plan 2006–2013³ and the Public Transport Development Programme 2006–2010⁴ (attached thereto, which describes in detail the public transport part of the Transport Development Plan 2006–2013). When studying these documents one can conclude that improving accessibility is an important element in Estonia's transport policy, since the main objective of transport policy is that the transport system must ensure the mobility of people and goods while being effective, safe and environmentally friendly. The Transport Development Plan highlights the following problems that relate to accessibility: inadequate infrastructure and public transport are losing popularity.

The rapid growth of car use has been brought along by historical factors, among others. The emergence of market economy and the increasing wealth of the people led to a massive drive to acquire private cars. Urban sprawl, which significantly accelerated since the mid- 1990s, increased the use of cars and resulted in traffic jams in the morning and evening peak hours, has become another problem. Despite the relatively short distances in Estonia, the access of some of the population to potential jobs (especially during the declining period of the economic cycle, when employment contracts in the periphery and crisis settlements) is rather complicated because of rising prices of transport.

When describing the progress on transport access it is important to view the figures characterising the situation. The following tables present the share of passenger turnover and the popularity of the various modes of transport while accessing employment.

Table 1. Share of passenger turnover in 2004–2007 (%)

¹ Estonia's population is 1.34 million.

² The transport sector is also covered by the Estonian Environmental Strategy 2030 (and National Environmental Action Plan for Estonia for 2007–2013 which serves as the implementation plan of the Strategy).

³ For details see: <https://www.riigiteataja.ee/ert/get-attachment.jsp?id=12784610>

⁴ For details see: <https://www.riigiteataja.ee/ert/get-attachment.jsp?id=12784615>

Mode of transport	2004	2005	2006	2007
Private cars	65.1	67.3	65.9	66.5
Public transport total	34.9	32.7	34.1	33.5
Road transport (buses)	20.6	18.4	19.1	17.9
Incl. urban transport (buses)	4.3	3.2	3.4	3.4
Tram and trolleybus transport	2.0	1.5	1.5	1.6
Railway transport	1.6	1.7	1.7	1.8
Maritime transport	4.6	3.7	4.2	4.8
Inland water transport	0.0	0.0	0.0	0.0
Air transport	6.0	7.5	7.5	7.4

Source: Statistics Estonia⁵

The table 1 shows that the ratio of using public and private transport in Estonia is 1/3 versus 2/3 and the most popular mode of public transport is the buses.

Table 2. Use of different modes of transport for attending work in 2004–2007 (%)

Mode of transport	2004	2005	2006	2007
Public transport	29.2	29.9	27.5	26.3
By foot	25.4	24.3	24.0	24.0
Bicycle	2.8	2.8	3.1	3.1
Moped, motorbike	0.1	0.1	0.1	0.1
Private car	26.9	28.2	30.7	30.7
Employer-provided vehicle	11.7	11.1	12.0	12.0

Source: Ministry of Economic Affairs and Communications

The table 2 reveals the trend of the declining share of public transport use when attending work. Besides the increasing car ownership and urban sprawl several other factors can be pointed out. The cost of public transport is inevitably high due to the sparse population; this results in need for infrequent timetables in rural areas⁶. At the same time the purchasing power of the public transport users is insufficient for the raising of ticket prices, while the limited budgets of the state and the local governments do not enable public transport subsidies, which would allow its frequency, speed and comfort compete with those of individual vehicles.

Although various policy documents emphasise the need to develop the environment-friendly electric transport, the Transport Development Plan admits that, due to Estonia's size and population sparseness, road transport will remain the basic mode of domestic transport. Nevertheless, the need for developing railway passenger transport is being increasingly emphasised. The government approved the list of transport investments of national importance in 2008, which includes the financing of the procurement of new rolling stock for passenger train operators in Estonia (18 electric and 10 diesel-powered trains), the reconstruction of the Tallinn-Tartu railway stretch and the modernisation of the railway platforms.

⁵ Aruanne Eesti säästva arengu riikliku strateegia "Säästev Eesti 21" rakendamise tulemustest (2008).

⁶ Traffic frequency has significantly declined in the rural areas especially in the latest period. All local governments are obliged to organise the pupils' transport to school and back. While this service is only meant for pupils, it is also used by the retired people (to visit banks, shops, etc.).

To sum up the issue it must be admitted that Estonia is facing a major challenge in turning the trend of using private cars and developing public transport into an attractive, environmentally safe and sustainable alternative to cars while meeting the travelling needs of the public. As the use of public transport is declining, the medium-length goal is to retain the use of public transport for travelling to work at the level of 30 percent at least⁷.

Fuel prices and tax reform

Removing subsidies on fuel

The price of fossil gasoline sold in Estonia's tanking stations in 2008, including taxes, was on the average 16.32 kroons. Approximately half of the price amounts to excise duty and value-added tax⁸. Fuels of certain type or used for certain purposes are exempt from excise. For example, biological fuels and fuels used in motor vessels and aircraft are free of excise (additional terms apply to the purpose of travel, the types of fuel and areas of operation). The permit for exemption of biofuel from excise duty issued to Estonia by the European Commission on 27 July 2005 is valid six years only – till 27 July 2011. If biofuel is mixed with some other fuel, exemption from excise duty is applied on the portion of biofuel contained in the mixture only. It should be pointed out that the use of biological fuels in Estonia is as yet marginal. Compared to other countries, the share of biofuels in total fuel consumption in transport in Estonia is one of the lowest in the EU. The share of biological fuel in 2008 amounted only to 0.82% (0.06% in 2007) of overall consumption of gasoline and diesel fuel.

Special-purpose diesel fuel and light heating oil are taxed in Estonia at an approximately six times lower rate than the regular diesel fuel. Since the permitted use of these specially marked fuels is quite broad (agriculture, fishing, forestry, mining, shipping, rail traffic, stationary engines and heating) the marked fuels can also be used by those subjects who do not actually need the tax deduction. The negative environmental impact caused by the burning of such fuels remains the same regardless of it being burned in a heating boiler or an engine; therefore the tax deductions should be reduced in the future according to the Ecological tax reform⁹. However, there are no active debates over the issue at present.

Encouraging energy efficiency

While the Council of Europe directive 2003/96 demands the raising of the fuel excise rates to the EU minimum level by the beginning of 2010, Estonia raised the gasoline and diesel fuel excises to the EU level as early as the beginning of 2008 (see Figure 3). The raising of the excise rate has some influence on the volumes of transport.

⁷ Some experts consider this percentage as a goal insufficiently ambitious for sustainable development, considering the increasing total volume of transport use.

⁸ The price structure of fuels contains 5 main elements: fuel purchase price, excise tax, stockpiling fee, commercial margin and value-added tax.

⁹ For several years there have been discussions in the Estonian society about the need for the ecological tax reform. The need of reform proceeds from Estonia's environmental problems, caused above all by oil shale energy generation, but also motor transport. Among other measures, the ecological tax reform concept (2005) foresaw the introduction of car tax in Estonia. Discussions over that issue have somewhat weakened recently.

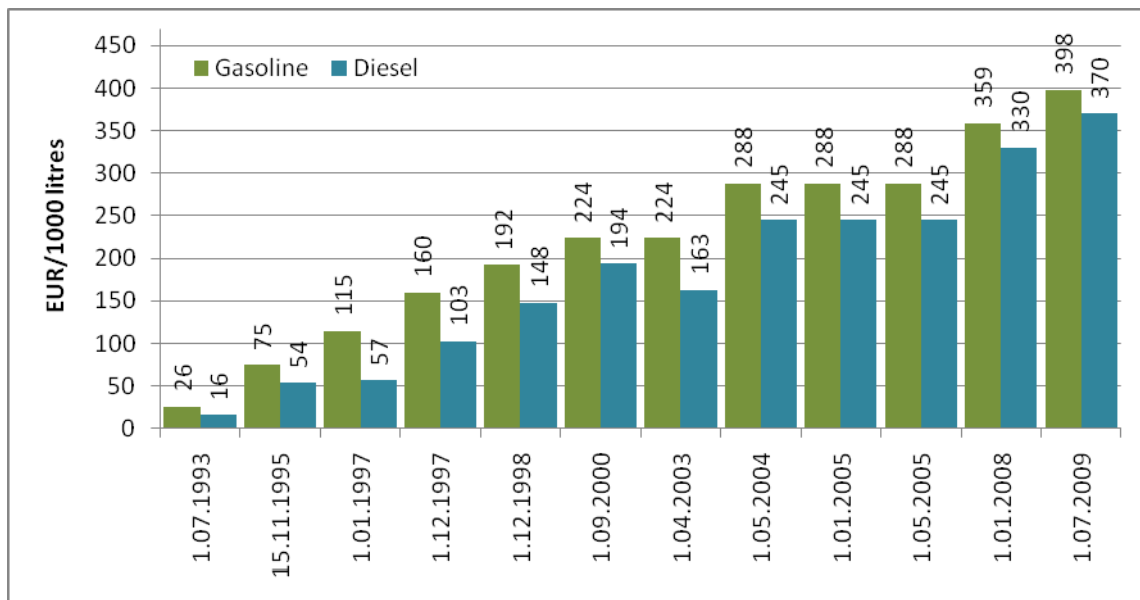


Figure 3. Fuel excise rates in 1993–2009 (EUR/1000 litres) (Source: Ministry of Finance)

When comparing the volume of fuel consumption of 2008 with that of 2007, some decline of consumption can be observed (see Figure 4).

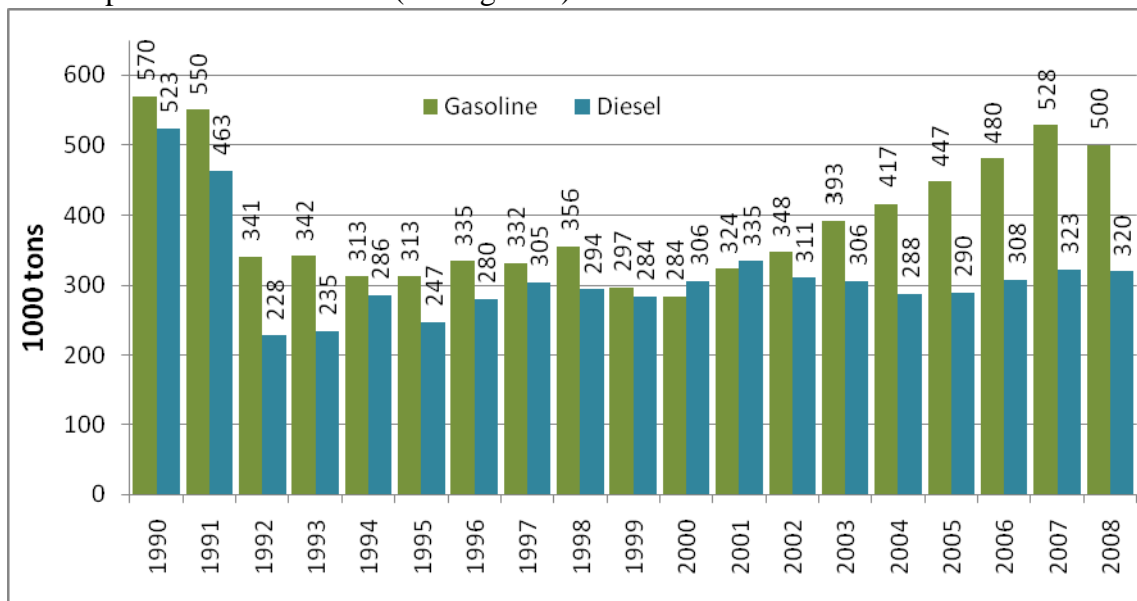


Figure 4. Fuel consumption in 1990–2008 (thousands of tons) (Source: Statistics Estonia)

Although the declining fuel consumption in 2008 could be related to the excise raise, the actual cause is primarily linked to the general low of the economy. Fuel consumption was significantly influenced by the contraction of the building market, the reduced amount of orders to industrial enterprises and the decline in trade. According to traffic monitoring data, traffic density on main roads in 2008 declined 4% as compared to 2007.

As for encouraging energy efficiency, there is a positive example of major Estonian cities holding car-free week campaigns every September (although due to Estonia's climate this is hardly the best time for advertising light traffic). The capital Tallinn has also made certain parking advantages to users of more environment-friendly cars. The mandatory eco-driving course for beginning drivers in Estonia is also somewhat encouraging energy efficiency.

Providing reliable alternatives for the poor

Estonia's public transport policy documents stipulate that public transport has to provide all population groups with at least minimum necessary travel opportunities. The documents declare that the residents incapable or unwilling to drive cars must be able to use public transport for their necessary travel. Nevertheless, in today's Estonia (especially rural areas) the traffic network is sparse and the number of routes is declining¹⁰. The latter aspect is also reducing the mobility of labour. As for providing reliable alternatives for the poor, lower ticket prices in public transport should be considered first of all. According to the general rule, pupils, students and retired persons are entitled to reduced-price tickets, while pre-school children and the disabled are entitled to free travel. Local governments can extend the group of passengers, who are entitled to low-price tickets or free ride. The capital Tallinn has introduced the most advantages in the use of public transport; among others, all residents older than 65 can travel free on public transport.

Regional and global transport system integration encouraging efficient modes

The Estonian government policy has emphasised the need to improve connections between major roads and international ports and airports. The throughput capability of especially roads belonging to the EU transport corridors has been improved in recent years. Investments in rail transport have been more modest compared to those in road traffic. The limited investments in railway improvement result in low travelling speed of trains. Moreover only the stretches closed to Tallinn have been electrified and the state of railway stations, waiting platforms and power network of electric trains is unsatisfactory. Safety requires investments in level crossings, since the number of accidents has been increasing yearly. Estonia still lacks direct rail link to Riga and further to other EU countries. The opportunities of non-Tallinn residents of Estonia to reach the Tallinn passenger port or airport by using public transport are problematic. The opportunities to reach the Tallinn passenger port or airport by using public transport are quite limited, especially for non-Tallinn residents.

Four roads¹¹ of all-European significance run through Estonia. The density of registered road network in Estonia is 1,336 km/1,000 square kilometres, which is a relatively good indicator. Trunk roads are significantly more intensely used compared to the remainder of road network. Total daily traffic on trunk roads amounts to ca 50% of total road traffic. Major investments made in recent years have improved the state of the trunk roads – the average age of surfacing has started to decline and is currently lower than 15 years.

Railway in Estonia (unlike the other Western European countries) has primarily become a transit route rather than a carrier of local goods and passengers. The share of railways in passenger carriage is very small. The density of the rail network in Estonia (22 km / 1,000 square kilometres) is one of the lowest in Europe. Estonia's rail transport companies carried approximately 5.3 million passengers in 2008 (3% less than in 2007); the number of passengers in inland routes was 5.1 million¹². Rail traffic to EU is complicated by the use of different gauges. Estonia's passenger traffic to Russia is currently limited to the Tallinn-Moscow route; the Tallinn-St. Petersburg route was closed down in 2008 as the international train operator was unable to offer competitive ticket price. A key challenge for Estonia in the coming years will be the retaining of passenger traffic to Moscow and reopening the St. Petersburg and Riga routes. The RailBaltica project (EU-standard

¹⁰ For example several county and long-range routes were closed down in 2008. Passenger turnover of bus lines in 2008 declined 8% compared to 2007.

¹¹ Three of them start from Tallinn and the nearby Muuga port and run respectively to St. Petersburg, Moscow and Riga. The fourth route starts from Riga and passes through Estonia to St. Petersburg.

¹² Despite the loss of clients in South Estonia due to major railway overhaul, the increasingly popular 1st class service helped to maintain the number of passengers.

rail link to Central Europe), a priority project of the European Commission, is still at the stage of analyses.

Maritime transport is showing a rising trend in passenger carriage and an increasing number of cruise passengers visits Estonia's ports every year.¹³ Joining the Schengen visa space and the resulting increase in tourism have had a positive effect. Further factors boosting growth are the renovation of the ferry fleet and the popularity of the Eastern Baltic among cruise passengers. Most of the passengers travel from Estonia to Finland and vice versa.

The use of inland waterways in Estonia is minimal¹⁴. In 2008 only 3,500 passengers used inland water transport. Cargo traffic has stopped since 2001. Shipping is seasonal and mainly involves personal watercraft.

Approximately 1.9 million air passengers¹⁵ used the services of Estonia's airports in 2008. The extension of the Tallinn airport was completed in 2008, allowing the handling of at least 2.5 million air passengers per year. On the other hand the number of direct air links from Tallinn has somewhat declined.

Urban transport planning and policies

Regarding urban transport in Estonia's context the two major cities (the capital Tallinn and the second largest city Tartu) should be discussed primarily, since the other cities are relatively smaller as to their population and territory.

Tallinn and its closest vicinity form Estonia's leading transport node, where all the main rail and road connections, as well as maritime and air links arrive. The primary cargo and passenger ports and rail terminals are concentrated in Tallinn as well as the international airport and bus station. Almost half of Estonia's residents and two thirds of the country's economy are based in the Tallinn urban region, where approximately 550,000 people are living¹⁶. Yet the planning of public transport has failed to view the urban conglomerate as a whole; the planning processes in the city and the surrounding county have occurred independently. This results in the major challenge of integrating the transport systems of Tallinn and its vicinity and the drafting of the development is scheduled for the near future.

Tallinn is the only city in Estonia, which uses the environmental electric transport (trams, trolleybuses and electric trains). However, Tallinn currently lags behind the developed cities as to the ratio of existing tram lines per square kilometre of city territory. The plans of extending the tram lines and transition to high-speed trams are on the agenda (however, the development of the idea is still in the initial stage). Although the development plans of Tallinn drafted during the past ten years emphasise the preferential development of public transport and light traffic, environment protection and the curbing of car traffic, the use of cars has been growing very rapidly during that time, since the practice has actually favoured the dependence on cars and the steadily sprawling capital has increased commuting. As for activities targeting the impact of urban sprawl, the introduction of the Park&Ride system in Tallinn in 2007, aiming at the reduction of traffic and parking in the city centre, can be outlined as a promising initiative. Park&Ride is a system enabling the reduction of car use when travelling to the city centre. One drives from home to a public transport stop in the car and continues to the city centre by public transport. Another

¹³ A total of 12,237 ships arrived in and 12,192 departed from Estonian ports in 2008. Fifty-seven percent of the arriving ships were passenger ships, 16% bulk carriers, 13% general purpose ships and 6% tankers.

¹⁴ Only Lake Peipsi, the River Emajõgi and (partially) the rivers Narva and Pärnu are navigable in Estonia.

¹⁵ Including 1.8 million passengers on international routes.

¹⁶ Out of the total, 400,000 or three quarters reside within Tallinn's administrative limits.

positive aspect is the initiative in Tallinn in recent years to allocate separate traffic lanes to public transport.

In Tartu just like in Tallinn, a large share of the factors causing the increasing popularity of cars are located outside the city limits, where the transport preferences cannot be directly influenced by the city's public transport system. Cooperation between the county and municipal authorities in the planning of county and urban bus lines has been modest so far, resulting in a lack of integration of the ticket systems, route network and timetables.

Best practice: ID-ticket

The ID-ticket system, based on the mandatory identification card, was launched in Tallinn and Tartu in 2004. The ID-ticket was introduced in the electric trains operating in the environs of Tallinn in 2006. The ID-ticket users can choose from several methods for obtaining the ticket (cash, Internet bank, mobile phone, direct debit etc.) and it will be sufficient if you carry your ID-card along when using public transportation.

Vehicle efficiency and emissions policy

The level of CO2 emissions in Estonia is significantly above the EU average mainly due to the specifics of electric energy production (oil shale burning). Negative effects caused by transport cannot be ignored either. Approximately 16 percent of greenhouse gas emissions in Estonia are produced by transport, 66% of it by road transport. Although greenhouse gas emissions in Estonia's transport sector in 2007 were smaller than in 1990, the amount of emissions has increased in recent years due to the rising number of private cars (e.g. emission increased 5.4% in 2006-2007).

The vehicles' age structure has significantly rejuvenated within the ten years and the share of newer vehicles has been steadily increasing. The share of cars older than ten years in 2009 was approximately 60% (see table 5).

Table 5. Motor vehicles registered in the Motor Vehicles Register (as of Oct 01, 2009)

	UP TO 2 YEARS	3 TO 5 YEARS	6 TO 10 YEARS	OVER 10 YEARS	TOTAL
Motorbikes	1621	2702	3028	11256	18607
Private cars	29967	79485	104146	332410	546008
Lorries	5267	15728	16063	44549	81607
Buses	239	517	473	2941	4170
TOTAL	37094	98432	123710	391156	650392

Source: Estonian Road Administration

An important problem is the small share of environment-sparing vehicles out of the total fleet¹⁷. Estonian buyers are prefer relatively large and uneconomical vehicles compared to other European countries. According to Estonian Road Administration, the average level of CO2 emissions of new cars sold in Estonia in 2007 was 181 g/km, noticeably higher than the EU target, which sets new cars CO2 emissions at 140 g/km 2008-2009 and at 120 g/km by 2012.

The Estonian Transport Development Plan 2006–2013 aims at having the share of registered new private cars with CO2 emission below 120 g/km increase to 30% by 2013 while the share of trucks meeting the Euro 3 standards would increase to 50% of the total fleet by 2013. Yet no

¹⁷ The public transport fleet is old as well, regarding all types of vehicles. The technical state of the fleet is generally unsatisfactory due to insufficient investments and the vehicles' average age is high. The age of Estonia's tram and train carriages is generally between 20–30 years. The average age of buses is approximately 13 years.

specific moves towards that goal have been made as yet. The few activities concerning vehicle efficiency and emissions policy include the harmonisation of the private cars' energy labelling directive, while the increase of fuel excise rates may have indirect effect on vehicle efficiency and emissions.

Development of any transport technology research and development

Current situation: R&D institutions and research focus in Estonia

Research and development in the field of transport technology in Estonia are in a relatively modest state. This sphere is addressed to some level by universities and engineering-consultation firms, but the Estonian Research and Development and Innovation Strategy's transport technologies are not among national priorities¹⁸.

Regarding universities, the issues of transport technology research and development are mostly studied by the Tallinn University of Technology and primarily the Institute of Roads of the Faculty of Civil Engineering. Concerning transport and transport technologies its research focuses are: (1) road engineering and construction technologies (materials, surfaces, construction technologies); (2) traffic planning and impact (noise, safety etc.) and environmental impact of transport. Transport-related research is also carried out by Faculty of Power Engineering with some main areas of work including the research, design and development of energy-saving drives for electric transport; and Faculty of Mechanical Engineering in the field of mechatronics.

Besides Tallinn University of Technology there are three applied colleges in Estonia, the study and research areas of which are related to transport: a) the University of Applied Sciences, with a faculty of transport dealing with research and development in the spheres of automotive engineering, logistics and economics, and railway engineering; b) Estonian Maritime Academy, which is dealing with maritime-related applied research and development; and c) Estonian Aviation Academy, which carries out applied research in the field of aviation.

In addition to the universities and colleges some consultations firms in Estonia study transport related development, including Ramboll Eesti AS¹⁹, Stratum OÜ²⁰, Technical Center of Estonian Roads Ltd²¹; companies active in the field of mapping, geographical information systems (GIS), mobile positioning, etc. should also be highlighted: AS Regio²², AS E.O.Map²³, OÜ Positium LBS²⁴.

All in all, the current research in the field of transport associates primarily with traffic studies, transport planning, traffic safety and assessment of environmental impact of transport (noise, pollution, etc.) There have been few research grants of Estonian Science Foundation and targeted financing that supports research and development in the field of transport technologies. A small level of financing has been made available by Enterprise Estonia²⁵. These spheres are

¹⁸ Estonian Research and Development and Innovation Strategy 2007-2013 "Knowledge-based Estonia" highlights a small number of certain prioritised fields for supporting national research and development.

¹⁹ Ramboll Eesti AS is part of the international concern Ramboll Grupp AS and provides specialised competence in the spheres of technical infrastructure and transport, energy and climate, road construction and road maintenance supervision and environment protection management. For details see: <http://www.ramboll.ee>

²⁰ The main fields of activity of the engineering office Stratum are traffic studies, transport planning, traffic safety, the development of traffic and transport-related information systems etc. For details see: <http://www.stratum.ee/>

²¹ Technical Center of Estonian Roads Ltd is engaged in road and construction studies, design and supervision, advanced training of engineers, laboratory tests, research and verification of compliance with standards of road and general construction materials. For details see: <http://www.teed.ee/>

²² For details see: <http://www.regio.ee>

²³ For details see: <http://www.eomap.ee>

²⁴ For details see: <http://www.positium.ee>

²⁵ Enterprise Estonia is one of the largest institutions within the national support system for entrepreneurship,

predominantly engaged in projects financed by the public sector (cities, county governments, ministries). As for the latest international research projects, launched within the EU framework programmes, in which the city of Tallinn and the Tallinn University of Technology participate, CIVITAS SMILE and CIVITAS MIMOSA should be highlighted. The former (SMILE) concentrated on the development of intelligent transport information systems and resulted in the completion of a public transport priority system allowing the extension of the green or shortening of the red traffic lights on some public transport routes. One of the focuses of the latter project (CIVITAS-MIMOSA) is the creation of a modern traffic monitoring system as well as the development of a real-time information system.

Future developments and challenges

Regarding future activities, the Ministry of Economic Affairs and Communications together with the Ministry of Environment plan the development of new measures for supporting environment-friendly transport technologies; however, no specific moves have been made in that direction so far. The Estonian Energy Technology programme, which was drafted in 2008, includes among the new directions of energy technologies and energy production optimisation the development and application of second-generation biofuels' production technologies, including the goal of increasing the share of biological fuels in the transport sector. Additionally, the Estonian Biotechnology Programme is being developed; its challenges include the development of competitive biological fuel (economically efficient production of second-generation biofuels).

The Ministry of Economic Affairs and Communications strategy for 2010-2013 lists among the important close-range challenges the establishing of an independent investigation institution of traffic accidents, which would improve safety and ensure better investigation of accidents. The new institution is expected to improve significantly investigation capability and the level of transport safety. The goals include the improvement of the corresponding competence, better compliance with international investigation standards and more efficient exchange of information with other countries.

Road, rail and marine systems construction standards and changes in the, in anticipation of climate change impacts (sea level rise, and increased frequency and severity of weather events)

Road construction is governed by standards developed locally in Estonia. According to experts, the Estonian requirements and standards do not differ in principle from those used in other EU countries. Regarding the anticipation of climate change impact, attention has been paid to environmental effects. As of now, new versions of the road construction requirements and city street standards are being completed; these pay greater attention to environmental issues.

As for rail transport, no Estonian specifics can be pointed out, since most of the standards have been adopted from the EU. According to the Estonian Technical Surveillance Authority, at the moment there are about 250 standards in the railway field in Estonia, one of which is a genuine Estonian standard and all other are standards composed by the European standardisation organisations and taken over as Estonian standards. A similar situation exists in aviation, where the amendment to the Aviation Act was approved in 2004, according to which the European joint aviation requirements (JAR) are applied directly and unconditionally.

Estonia's waterways do not yet comply fully with international requirements and legal regulation

is insufficient (e.g. the use of marine areas and seabed) and the existing regulations should be updated and amended. The maritime situation will change in the near future as Estonia's first maritime policy document (strategy) is to be completed in 2009-2010, the changes in the field of norms and regulations are also to be expected. Regarding standards in general, the negative aspect should be pointed out that standards are not publicly and freely accessible in Estonia; they have to be purchased via the Estonian Centre for Standardisation²⁶.

Capacity building needs on transport activity assessment and analysis for integrated planning (e.g., urban transit, congestion relief, non-motorized transit, vehicle efficiency programs development, assessing fiscal incentives, inter-modal freight management systems)

In order to assess capacity, one should observe the bottlenecks of Estonia's transport system. Due to the sparse population, bus traffic has become the predominant mode of public transport in Estonia. Problems concern the optimisation of the state-subsidised county routes and the plotting of timetables in a situation characterised by shortage of both passengers and money. Inter-city routes with greater number of passengers, which are based on commercial principles, operate more efficiently. The problem of the inter-city routes is the failure to integrate them, which would result in synergy. The trend of urban sprawl has also caused transport-related problems. It is the greatest in the context of the Tallinn agglomeration, but poses less of a problem in Tartu. There are no traffic jams in the main roads, but this doesn't mean that the traffic density of some stretches of main roads isn't too high.

In Estonia's context the needs of capacity building can be divided in the three following types.

Need for additional studies. An assessment of Estonia's general state of integrated planning, there is still a lot to do. Above all more detailed studies are needed for the combined analysis of transport and land use. This especially concerns the agglomerations (first of all Tallinn²⁷, but also Tartu). Solutions to transport problems do not concern only transport, but the locations of workplaces, residence, daily services²⁸ etc. are also important factors. More detailed studies are needed regarding the people's travel habits, commuting and the issue of light traffic, which is increasingly recognised in Estonia.

Need for more efficient implementation of the integrated planning principle. As for the capacity building needs regarding planning, the problem is not so much the lack of knowledge and skills in the sphere of studies and analyses²⁹, but the fact that the respective institutions (the cities, counties, ministries) pay insufficient attention to integrated planning and corresponding analyses. Thus the crucial aspect in Estonia is improving the public sector's competence regarding the commissioning of required analyses. As for public transport planning in Estonia, until recent times the planning of public transport took place mainly at the city or county level (there are 15 counties in Estonia). As the route subsidies system is based on the counties the extension of a certain route, which crosses the county limits, is administratively very complicated (including the deals on sharing the subsidies). This results in a network of routes which does not correspond to the

²⁶ The Estonian Centre for Standardisation is a non-profit association, which was established by three founding members (Republic of Estonia, Chamber of Commerce and Industry, Confederation of Employers and Industry) on 30.11.1999.

²⁷ Tallinn is the only city in Estonia with electric railway in its environs. The environmentally-friendly electric railway has not been sufficiently integrated into the urban or city-hinterland transport systems. Tallinn and the surrounding municipalities have also failed to introduce a common ticket system (despite long discussions on the issue).

²⁸ Daily services include among others schools and nursery schools. According to experts, the traffic of families with children amount to a large share of overall traffic density.

²⁹ Regarding various expert opinions the analyses in the field of finances and cost-effect could be mentioned as a somewhat weaker side: everything concerning the economic analysis of transport.

passengers' needs and wastes resources, e.g. by doubling bus and rail traffic on the same route. However, increasingly more attention is being paid to joint planning. For example, both Tallinn and Tartu are making efforts towards better cooperation with the surrounding municipalities and similar signs can be noticed in various other municipalities.

Development of institutional solutions supporting integrated planning. Only individual examples of the latter aspect can be mentioned. One positive development is the establishment of a central institution (Public Transport Department within Estonian Road Administration) in 2009, which addresses the optimisation of the counties' bus traffic. This should develop in a (longer) perspective into a body coordinating Estonia's whole public transport. One move in this direction is the launching in 2009 of the first nationwide travel planning portal³⁰, which concentrates all public transport opportunities. The system joins the timetables of Estonia's county bus routes, long-distance routes, international bus lines and urban lines of major cities. It also contains information about ferry links, domestic airlines and train lines. Yet this system could benefit from further development and should be made more user-friendly. Future plans include the opening of a ticket sale system, which would enable the portal to provide information about ticket prices and deductions.

³⁰ For details see: <http://www.peatus.ee/>