ERTRAC- Hungary

NATIONAL TECHNOLOGY PLATFORM FOR ROAD TRANSPORT

VISION 2030

Budapest, June 2009.

CONTENTS

INTRODUCTION

Preface

In order to improve Hungary's competitiveness and the quality of life of the population, the main task of ERTRAC-Hungary National Technology Platform (further on: ERTRAC-Hungary) – established with the help of the National Office of Research and Technology – is to elaborate – relying upon the determination of the long-term vision of the Hungarian road transport – the research and development strategy of Hungary's road transport for the government, the participants of the competitive sector and of research and innovation.

As the first step in the implementation of this task, in collaboration with concerned role-players of the road transport sector, ERTRAC- Hungary has drafted the ambitious, but at the same time the real vision of the Hungarian road transport by 2030, which is in compliance with the transport policy objectives of the European Union and Hungary.

The present publication of ERTRAC-Hungary is the result of the consensus among the interested parties of road transport and the summary of ERTRAC- Hungary's work performed so far. The vision by 2030 takes into account the actual characteristics of road transport and it serves as a basis for the development of the Strategic Research Plan (further on: SRP). The SRP, including future research activities, priorities and the specification of the conditions of implementation will be published and discussed after the approval of the vision.

During the elaboration of the vision, the working groups considered several courses of development, scenarios. For the feasibility of the plans, the vision is based on main trends, the most probable main streams relieved of extremities.

The vision has been accepted on the occasion of the Plenary Meeting of ERTRAC- Hungary held on 9 June 2009.

The place of road transport in society and economy

Road transport and economy

In Hungary 6% of the GDP is produced by transport and transportation. Taking into consideration the construction of the transport networks as well as the production of vehicle industry, every tenth work place is related to transport. In alignment with the European trends – the increase of goods transport performances as of 2000 successively exceeded the growth rate of the GDP, whereas that of the passenger transport approximates it. In the expenditures of the households, the rate of transport expenditures exceeds 15% (this belongs to the highest ones in the European Union).

On the basis of the data of the year 2006, the share of road transport in freight transport (according to average tonne-kilometres) equals to 73%, in passenger transport (according to road-kilometres) to 80%. Road transport – together with its other forms – provides for the indispensable mobility of citizens and goods, and it contributes to Hungary's economic progress.

Social, regional and economic cohesion

Our everyday life is influenced by road transport since it ensures work possibilities for a significant number of employees, provides for the fields necessary for different business activities, ensures local mobility and communication among settlements. In the implementation of social, regional and economic cohesion, transport infrastructure is a factor of key importance, diminishing the seclusion of peripheral regions significantly. However, the negative effect of road transport on the environment and human health still remains a problem to be solved.

Sustainable development and growth

From economic and social points of view, road transport plays a key role in ensuring sustainable development and growth. For the performance of this important role and furthermore to get the better of all future challenges and for the continuous improvement of its competitiveness, the road transport sector has to be innovative together with every related area by way of an integrated approach. For the sake of efficiency, appropriate R+D strategy should be ensured requiring the common involvement of public and private resources for the necessary support of research and development activities.

In the competition-based economy, development and maintaining of the quality of life, of the environment and of the resources, as well as the reasonable exploitation of the territory should be harmonised with the principle of sustainable development, the implementation of which needs efforts to be devoted to road network planning, maintenance and operation, as well as to the development of environment friendly vehicles and to finding the intermodal solutions.

Economic possibilities and limits of Hungary's geographic position

From the aspects of freight as well as of passenger transport, Hungary' geographic position is advantageous. The country's terrain configurations (flatland) offer more favourable circumstances for the development of the transit transport routes than the neighbouring countries with higher mountainous areas do. As a consequence, several such main European transport corridors linking the Eastern and the Western part of Europe cross the country, which by way of providing logistics

services for international trade, offer serious possibility for increasing Hungary's economic competitiveness.

In 2007, the EU's recent enlargement increased further the burdens of the transport sector, because most transport routes coming from the newly acceded South-East European states cross Hungary. The year-by-year increase of the freight traffic between the EU's earlier member states and the newly acceded ones overloads above all the elements of the Hungarian trunk network. A further dynamic growth of this traffic can be expected, to which, the significant increase of the Hungarian transport demands contribute also.

New forms of collaboration in road research

Annually, the European road transport sector spends more than 28 billion € on research development. This is chiefly financed by the concerned groups of the private sector and by the member states.

The importance of the development of the strategic programme of research is increased by the fact that for the management of the current economic crisis, the European Commission has approved a programme devoted to economy's intensification[1]. The aims of this intensification programme include among others the intensification of demand, the improvement of the competitiveness of the European economy, the support of the development of the passenger car sector, the faster change to industry with low CO_2 consumption, and parallel to this the increase of energy safety.

Hungary will make much use of a more efficient balance between the research activities of the private and the public sectors – especially with regard to economic efficiency, the quality of the end-result, as well as to the saving of the time required for innovation.

High-level collaboration – joining of the interested parties

Just like in 2004, when ERTRAC[2], provided for a forum for the interested role-players of the European road transport; the possibility of attendance in ERTRAC-Hungary established in April 2008, has been offered for users, carriers, vehicle manufacturers, component-suppliers, for those engaged in road infrastructure operation, development and services, the energy and fuel suppliers, the research organisations, the urban and regional government organs.

Elimination of isolation

ERTRAC-Hungary by involving into its activities all concerned domestic role-players, is capable of creating the possibilities of eliminating parallel research work for the sake of concentrating the existing power sources. This is the first occasion when the holistic aspects of road transport researches emerge. It is also the first instance that all the interested role-players work together for the development of coherent vision.

Mission

ERTRAC- Hungary's mission is to make road transport researches contribute to social welfare. ERTRAC- Hungary by the improvement of its obtained road transport related practical and theoretical information makes the country's competitiveness and safety increase, and its environment more protected and efficient.

Objective

As a result of the implementation of the research strategy planned by 2030, let Hungary profit in the EU market by its geopolitical endowments – ensuring the country's sustainable development and mobility, and make use of the possibilities offered by the global markets by joining with all participants of the road transport and in co-operation with the members of the National Technology Platform.

[1] European Economic Recovery Plan - COM (2008) 800
[2] European Road Transport Research Advisory Council, www.ertrac.org

In the future, road transport should be regarded as a system that is closely linked and balanced as perfectly as possible with the other transport modes. Road transport remains an important component of economic sustainability and social cohesion in the future, too.

In addition to social and economic environment, external natural environment decisively influence the road transport. Environmental loading, the climatic change – which is partly caused just by road transport – can bring about significant changes in the climate, the flora and fauna of the Earth. Climatic change may exercise a strong impact on mobility (migration, rearrangement of the arable lands) and affects directly the lifetime and the reliability of the engineering structures of the road transport (roads, bridges, vehicles).

The up-to-date transport system must be sustainable from economic, social and environmental protection aspects as well. Economic and social demands (such as safety, protection of life and health, environment protection, land use and transport development, activities of maintenance and operation), as well as distribution of available resources among these fields should be balanced for the sake of sustainability.

It is a challenge for Hungary to achieve and maintain its competitiveness on EU and global levels; its indispensable element being the innovative ability, which is based on harmonised R+D activity. The national road transport sector should become capable of attracting the most outstanding expertise, providing for the potentials of interesting training and carrier making. This is just because cooperation among research, education and industry is of fundamental importance.

Vision by 2030

Hungarian road transport, integrated with other transport modes, keeping co-modality in mind, meets the social and economic demands with a developed domestic network (linked with neighbouring countries), an increased safety, a decreasing environment load and lower per unit costs.

Along three main issues, ERTRAC-Hungary outlines the road researches in 7 main thematic areas, “piers”:

I. Free movement of persons and goods in compliance with the key targets of the European Union, on local and regional levels: 1) Mobility and transportation; 2) Infrastructure planning and construction;

II. Competitiveness of the road transport industry: 3) Automotive engineering; 4) Intelligent Transport Systems;

III. Sustainability: 5) Energy and environment; 6) Safety and protection; 7) Financing and pricing.

Mobility and transportation

Utilisation of road transport networks will be more efficient and interoperable by making possible the problem-free interconnection between road transport and other transport modes and by ensuring the most appropriate way of reducing the environment damages.

Passenger transport

Vision by 2030

In Hungary, the rate of the individual transport is further increasing; the present scale of the vehicle fleet is expected to grow by 70 %. In line with the social and demographic trends, the importance of public transport will strengthen in large towns and their conurbation mainly.

The most important elements of the vision by 2030

- Hungary's decreasing population (expected to be ~ 9.5 million by 2030), the increasing number of households (singles) and the demographic trends suggesting the evolvement of an ageing society produce new forms of mobility patterns and requirements and forecast the increasing demands on harmonised, user friendly mobility systems to be more attracting than before. Public transport, in addition to meeting basic social demands (such as smooth access to journey to work, to facilities of education, health care, etc.) gets a more important role in the satisfaction of the ageing society's needs for tourism and leisure.
- Due to the changing of the standard of living, the scale of the vehicle fleet is increasing in a pace close to the average of the EU15s.
- Decisive majority of the tasks related to passenger transport occur in towns and their conurbation where the attractive force of public transport is increasing due to its provided demand-controlled and passenger friendly services.
- In addition to further increase of the rate of individual transport, from social and transport policy aspects, due to worsening traffic congestions, the rising and raised additional costs of private transport (the traffic-jam charge, the parking and environment taxes, etc.), the preference of public transport, and as a result of the environment-conscious education indicating climatic change as a reason, the importance of public transport increases.
- On account of the better integrated than before unity of public transport and of the vehicles in private ownership, all the social strata of different age and income categories would have an agreeable access to convenient transport services.

Goods transport

Vision by 2030

Domestic road haulage, including also the urban goods transport, will expand both in relative and absolute sense. In comparison with the other transport modes, the role of the road transport will grow faster in domestic goods transport, whereas – as a result of the railway haulage and multi-modality – it will increase approximately to a similar extent in the transit mode.

The most important elements of the vision by 2030

- Globalising economy and expanding international trade upgrade Hungary's economically favourable geographic position, making the best of its significant transiting international trade routes.
- Public roads and other transport modes are more and more efficiently used (specifically with lower energy consumption and environment loading) inside the territory of large towns, as well as in long distance transportation for goods transport and logistics purposes.
- In goods transport, the so-called inter-modal transport (co-modality) is realised, i.e. in each element of the transport chain every transport sector provides for that duty it is most efficient in the discharge of.
- Regional logistic centres are established in several places all over the country. They do not attend on Hungarian demands only, but simultaneously with the elimination of the country borders provide for regional duties (SK / CZ / AT / HU, later RO / SRB / CR / UA).
- The state through a self-controlling efficiency-increasing system motivates the role players of the freight market (both the consigners and the carriers) to perform their work more efficiently (trailers' loading pattern, lower consumption, minimum standstill, etc.) Savings resulting from more efficient performance provide for adequate resources to cover the maintenance costs of the incentive system.
- High level IT/IS is available for efficient haulage. The data flow and invoicing become faster, and the working process more efficient and cheaper.
- Intermodality is a widespread, proved, widely accepted, supported and used mode of road haulage.
- Certified packaging depots operate in several places of the country which eliminate the unnecessary return cargos.
- Haulage is characterised by specialisation. Everyone works in the segment, being the most proficient in. Therefore, the vehicles are also specialised, consequently effectiveness grows, which results in lower prices and cleaner environment.

Infrastructure planning and construction

Vision by 2030

By 2030 the present radial structure of Hungary's network of expressways and main roads will be transformed to a grid-structure system aligning with the neighbouring countries' road system. Developed road network of expressways makes it possible to reduce the country's environmental and road safety risks as well as its social expenses, simultaneously with the increase of the road transit traffic. The level of the regional, local and urban roads will reach the EU15s' 2010 average characteristic.

The most important elements of the vision by 2030

- Through the investments realised, the network of road infrastructure becomes optimal; it is continuously monitored, repaired and maintained in compliance with requirements and standards. Its utilisation will become more efficient, and consequently, services offered to users will become optimalised. Infrastructure development is supported by efficient research activity carried out with new materials and in the field of new technologies.
- In 2030, the structure of the road network of Hungary will not be as much Budapest-centric as today, its traversability will be assured by north-south and east-west oriented alternative expressways. By the elimination of the EU's internal borders, systems of regional relationship evolve, and in their main traffic flows, too there are road connections of high categories.
- Designing of the road construction and maintenance processes maximalise the extent of recycling. Advanced technologies make the utilisation of the resources and of the energy more efficient than before.
- Land use developments are better integrated into transport planning in order to reduce the unnecessary exploitation of the area caused by transport and parking.
- Real time data on transport and road conditions are available within an integrated information system, which helps transport control, and improves the utilisation of the networks in such a way as people are able to make decisions based on real information.
- In order to provide prompt building, long lasting services, low maintenance costs and reusability, in the case of bridges and other structures, innovative designs and strengthening technologies are available.
- For spreading the alternative transport modes and decreasing the environmental loading, cycle-paths are available in a far greater degree than actually.

Vision by 2030

Up to 2030 the character of road vehicles will not vary basically from the currently known designs, however rate of the vehicles operating with alternative fuels and meeting the environmental, the safety and the efficiency requirements on a higher level, increases.

As for the on-board systems of the vehicles, the general spread of such systems can be expected which, already feasible at present engineering and technological level, support the intelligent driver.

The most important elements of the vision by 2030

- Such drivers-assisting – in a given case replacing – systems will spread, which – improving the already existing active speed control automatism, in certain operation conditions – will be able to control the vehicle (braking, accelerating, steering), without the driver's intervention (e.g. on motorways in case vehicles are advancing in convoys).
- Those collision-preventing systems will be applied, which preliminarily identify with great probability a collision or an accident, and through active intervention into vehicle control – by steering or braking – are capable to avoid them.
- The motor vehicle production systems maximalise the extent of reusability. Developed technologies enable us to utilise the resources and the energy more efficiently than earlier.
- Very probably, the exhaust emission and noise loading caused by road transport decrease significantly as a result of the application of the partly hybrid systems based on present internal combustion engines, and also of the use alternative fuels. At the same time it is a challenge to reduce the emission resulting from electric energy and hydrogen production, both required for propulsion.
- Future vehicles do not stand alone in transport, they are not independent and isolated objects, but will have a permanent relationship with:
  - their immediate environment, i.e. their direct environment, the roadway and its facilities;
  - the vehicles moving on a given road section in their immediate vicinity;
  - the other vehicles moving on their whole designed route;
  - the radio stations and satellites having a role in traffic control (GPS systems).

Vision by 2030

Circle of users of intelligent transport systems is enlarging, the information on transport/travelling are not available for road users and drivers only, but also for users of public transport, for pedestrians and cyclists as well. The role of European integration is upgraded, which requires the implementation of the interoperable intelligent transport systems and services (data exchange beyond borders, systems operating beyond borders). A wide spectrum of the engineering solutions is available, which make possible the implementation of transport services on a large scale.

The most important elements of the vision by 2030

- The user comes into the limelight of systems/services – providing of the real time and multimodal information becomes general and available for everybody, in every time and in every place.
- The number of users increases, transport and road related information become available not only for road users/vehicle drivers, but for those using the public transport means, for pedestrians and for cyclists as well.
- The system's role of integration strengthens, the solution of a given transport problem necessitates the application of integrated transport sub-sectors embracing multi-modal systems.
- The upgraded role of European integration requires the development of transport systems/services (outreach of data exchange and systems' operation).
- The role of institutional background enhances, demand for cooperation in the field of the application of the intelligent transport systems (ITS) increases among the state authorities, the road operators and the private service suppliers (Public Private Partnership).
- Mobility-management and economic regulation will have an outstanding role in influencing the rate of the modal split of transport engaged in sustainable development and in the optimalisation of traffic distribution (passenger friendly change-points of the transport modes, parking possibilities and fees harmonised with public transport means, integrated tariffs and travellers' information using intelligent solutions, etc.)
- Both in the case of independent vehicle systems and of systems based on external infrastructures, in the future, the eSafety systems will become the outstandingly important fields of application. Out of these, the eCall emergency call system and the future role of the so-called real time travelling information systems are underlined.
- Cooperative systems operating on the basis of the on-board collected information will have an important role with the following communication possibilities: „v2v" (vehicle-vehicle cooperation) or „v2i" (vehicle-infrastructure cooperation), or „i2v" (infrastructure-vehicle cooperation).

Vision by 2030

In Hungary, road transport mostly uses fossil energy, nevertheless, the proportion of the appearing renewed energy resources also with low greenhouse effect can be felt, too. Notwithstanding the significant increase of the fleet of road vehicles, the environment loading caused (air, noise, soil and water pollution) as a whole will diminish in comparison with the 2010 conditions.

The most important elements of the vision by 2030

- The gas emission with greenhouse effect caused by different vehicles and by their energy consumption decreases to major extent due to the large scale operation of vehicles with efficient fuel consumption and the use of traditional vehicles with better efficiency, as well as owing to the application of renewed, alternative fuels with low greenhouse effect. Further efforts are addressed to development.
- Since the available quantity of fossil energy resources is decreasing, and at the same time the number of passenger cars is continuously increasing to a significant extent, those technologies – first of all related to alternative propulsion systems – are appearing on a wider scale, which, parallel to earlier technologies, can meet the increased demands.
- The renewed fuels with low greenhouse effect together with vehicles with advanced power transmission contribute to improved emission control, to mitigation of the greenhouse effect and to safer energy supply. Large-scale accessibility and the infrastructure of the distribution system still remain a challenge in 2030, too.
- The system of transport becomes more efficient, and thus, it will minimalise the congestion degree of road transport and contributes to reduction of road vehicles' energy consumption.
- The lifetime emission (apart from CO_2) level of road vehicles – the two-wheelers included – is of such a degree, that it has but a minimum negative impact on the quality of the air.
- The level of noise caused by road transport system decreases. Noise levels meet the requirements of different places, the „silent zones" also included.
- The energy consumption and the resources of road transport come close to the level of sustainability; the conscious and sustainable handling of the dangerous wastes (batteries, on-board energy storing devices, used vehicle tyres, etc) are its important elements.
- Owing to new technologies of cleaning and protection, the impact on the quality of the water of the surface water disposals is reduced to minimum.
- New approaches in the case of road transport systems minimalise the environment impacts on communal and natural habitats.
- Use of motor vehicles inside sensitive areas of large towns will be restricted.

- Along development and spreading of technologies (XtL, its raw material could be natural gas, coal, biomass) also capable of the exploitation of several national sources of raw materials, the safety of supply will increase.

Vision by 2030

Safe road vehicles using intelligent technologies, the infrastructure and well trained road users promote the minimization of the number of fatal road accidents. Despite challenges of international terrorism and crime, with appropriate infrastructure, vehicle design and development, IT use, passenger and goods protection, the pace can be kept with EU's average level.

The most important elements of the vision by 2030

- All road users can easily comprehend the road transport infrastructure – self-explaining and forgiving roads – and a primary viewpoint of the designing process is to reduce to the minimum the number of mistakes made by drivers and road users, and however, in case they occur, to have the least serious consequences.
- In the construction, improvement, maintenance and monitoring of public roads and infrastructures – the road markings also included –, the EU-compatible safety standards and procedures are used.
- The integrated motor vehicle safety systems are further improved in order to prevent the accidents and to mitigate their consequences, as a result of which, drivers' control over motor vehicles increases to a great extent, the probability of their faults as well as their work loading decreases. Nevertheless – unless remote controlled vehicles spread – the driver will always be supposed to control the situation.
- There is co-operation and co-communication between intelligent roads, intelligent motor vehicle systems and the motor vehicle driver. The systems provide for the guidance, warn to danger and make the realisation of the driver's safe behaviour possible.
- As a consequence of the climatic change and the rising prices of fuels, the number of cyclists, moped riders and motorcyclists increases in traffic. Development of vehicles and infrastructure minimalises the impacts exercised on vulnerable road users, with special emphasis on pedestrians and cyclists.
- In order to maintain high level safety requirements, public road systems are permanently monitored.
- Road transport participants are furnished with continuous and attractive education, information and training programmes, starting already from the beginning of the kindergarten.
- Efficient forms of enforcement and penalisation are available in order to increase road traffic safety (e.g. speed restriction, use of safety belt, prohibition of driving under the influence of alcohol or drugs).
- Data on accident causes and particulars are collected and analysed according to a methodology accepted by common professional opinions. A more profound analysis of these data can lead to better understanding and prevention of the accident related incidents.

- Standardised practices of designing and operational procedures are supporting the study of the challenges of safety springing up from the application of new fuels and energy resources.
- The databases are used during the enforcement of the traffic rules, moreover without limiting to an unacceptable extent the citizens' freedom and privacy in the investigation of the severity degree and the character of the safety problems.
- In order to respect citizens' right to privacy, vehicles are equipped with such anti-theft devices, route detection instruments and tools of personal safety protection which are based on biometric findings.
- Technologies of developed monitoring and route detection, e.g. with the help of cargos' identification, the safety of haulage is improving.
- In the case of emergency rescue activities and evacuation, moreover, during treatments subsequent to accidents, the quality and speed of attendance improve, and the same refers to illegal activities, such as actions against kidnapping, hijacking, vandalism, too. The IT based cooperation among police, the authorities, the fireguard and the groups engaged in the rescue work contributes to the solution of the above task.

Vision by 2030

The collection system of distance related electronic fee is operating on national public road network with full enforcement of the „user pays" principle. Following the full implementation of the main network of public roads (expressways and main roads) sufficient resources will be generated for the operation and maintenance of the public road network. Eventual deficiencies can only be experienced in the network of local roads. The pricing policy encourages the use of environmentally friendly and safer vehicles.

The most important elements of the vision by 2030

- With full development and operation of electronic fee payment on the public road network, and of the system of electronic tickets and season-tickets in public transport, "the user pays" principle is realised through the distance related road charges and the taxes included into the price of the fuel.
- As a result of motorisation, the relatively low rate of public transport by road may be financed and becomes completely attractive. According to currently advanced West-European methods, the amounts necessary for subsidies are provided by private transport
- Accessibility by public roads of all settlements becomes all-embracing, the country's coverage with expressways corresponds to the 2030 level of development. The taxes, charges and the fees collected, together with the internalisation of the external costs and the application of the „user pays" principle, the appropriate operation and maintenance of the road network is definitely assured.
- Since the availability of traditional energy resources decreases, and the introduction and spreading of the new technologies are always costly, transport is expected to grow remarkably more expensive: this will call forth the rising of the prices in the other fields of the economy as well, because transport and haulage are basic social demands.
- The state promotes the spreading of the environmentally sound technologies by giving support to the exchange of the outdated vehicles and to the acquisition of more energy efficient and environmentally more sound ones.
- The sectors of the industry operating in the field of transport and infrastructure intensively utilise the new systems of control, production and planning in order to meet the increased requirements for sustainable mobility, while maximalising its social benefits and increasing the circle of the possibilities of choice offered for the end-users.
- For elimination of traffic jams and mitigation of congestions, entrance fees are collected in large towns, supporting public transport this way also. Determination of the entrance fees and tariffs is based on social utility (efficiency).

CONTENT AND STRUCTURE OF THE FUTURE PROSPECT AND OF THE STRATEGIC RESEARCH PLAN

- The future prospect of 2030 provides reference for the development of the Strategic Research Plan for Hungary's road transport.
- The future prospect for 2030 of the road transport sectors became finalised by consensus-based approval of the member organisations of ERTRAC-Hungary. After it, follows the elaboration of the Strategic Research Plan and the preparation of the Implementation Plan.
- Strategic plan of the Hungarian road researches contains those aims and tasks, the achievement and implementation that of is required in order to make the Hungarian road transport competitive both inside the European Union and on global level.
- With the contribution of the interested parties and of the invited road transport experts, ERTRAC- Hungary develops the Strategic Research Plan for the decades to come. The SRP will be updated regularly keeping an eye on the progress achieved during the developments.

- Similar to the train of thoughts of the vision for 2030, also the SRP and the Implementation Plan devoted to it will be determined along 7 main thematic areas.

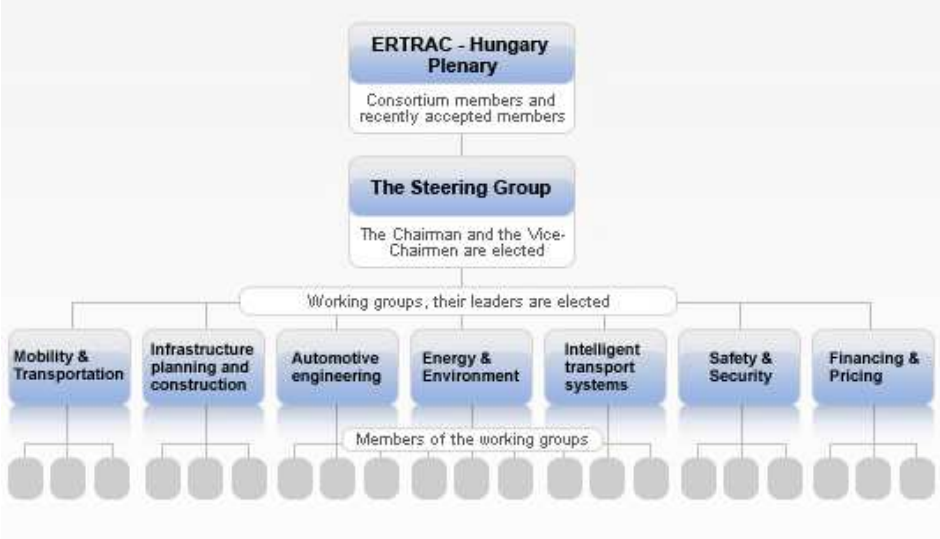
IMPLEMENTATION OF THE STRATEGIC RESEARCH PLAN

- The SRP follows the principle of sustainable development and considers the social, the environmental and the economic elements as equally important. Its objective is to contribute to the development of new technologies, which make possible:
  - improvement of the quality of life for the Hungarian society (more efficient and safer road transport);
  - reduction of the negative effects of road transport (exhaust emission with less greenhouse effect and less noise, more efficient utilisation of resources, reusability);
  - inducing the economic developments (increasing competitiveness and employment).
- The interested parties, and the organisations they represent, based on consensus contribute to the determination of such an open, comprehensive research plan which is to be carried out in the field of national road transport, as well as to the promotion of its implementation, which optimalises Hungary's research potential.
- The SRP is specifically prepared in order to support the above described vision's monitoring updating, realisation and its serving as a reference for the determination of future research plans.

ERTRAC- HUNGARY: ORGANISATIONAL STRUCTURE, WORKING GROUPS AND MEMBERS

Plenary meeting[3]

Is the highest decision making body of ERTRAC- Hungary. Its members consist of the founding members of ERTRAC-Hungary National Technology Platform and the newly acceded members. New members may join the Platform by application for membership, obtaining the simple majority of the old members' votes.



Chairman and Vice Chairmen

Proposal is made for the functional mechanism of ERTRAC-Hungary, the vision and the strategic priorities of road transport, for their elaboration methods. They provide for the professional documents required for the plenary meeting's decisions, and their implementation.

[3] From the aspect of ERTRAC-Hungary's mission it is of outstanding importance, that the experts of companies, authorities, government and those engaged in research are equally represented in the plenary meeting, in the presidium and in the working groups.

Secretariat

Performs the organisational and the coordinating operative and administrative work according to the plenary meeting's resolutions and under the guidance of the presidium.

Leaders of the working groups

Take part in the elaboration of ERTRAC- Hungary's research methodology. They select the experts invited to participate in the working groups, lead the working group's professional work.

Members of the working groups

Representatives of the profession invited by the leaders of the working groups, well-known both on country and international levels.

Opponent

Independent expert who does not take part in the work of the working group or of the presidium, nevertheless subject to the presidium's or the working group's proposal, under the invitation of the members of the plenary meeting, can report on some parts or the full text of a draft material.

Members of the working groups of ERTRAC- Hungary

Bold-faced type is used indicating the names of the working group leaders while the names of members are written in italics.

Mobility and Transportation

Dr. Ildikó Marcsa
Bus-transportation Director, Volán Professional Association

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Members of ERTRAC- Hungary

Research and innovation

- Institute for Transport Sciences Nonprofit Ltd.
- Hungarian Scientific Association for Transport
- Bay Zoltán Foundation for Applied Research, Institute for Materials Science
- Budapest University of Technology and Economics (BME), Faculty of Transportation Engineering
- Budapest University of Technology and Economics (BME), Department of Transport Economics
- Széchenyi István University, Faculty of Engineering Sciences
- Főmterv Civil Engineering Designer Ltd.
- Ramsys Zrt.

National bodies

- National Transport Authority
- Co-ordination Centre for Transport Development
- Hungarian Roads Management Company

Industry and suppliers

- T-COM Plc. Regulatory Affairs and Pricing Policy Branch
- Hungarian Road Transport Association
- VOLÁN Professional Association
- ITS Hungary Association
- NiT Hungary
- Quantum Energy Kft.
- Hungarian Association of European Automobile Services

Road infrastructure operators and developers

- COLAS Hungária
- H-TPA Innovation and Quality control Ltd.
- Non-profit Company for Quality Control and Innovation in Building
- Hungarian Road Society

Civilians' sphere

- Global Road Safety Partnership, Hungary

Other

- Dr. Csaba Attila – Deputy of MEP

APPENDIX

Forecasts for 2030

Methodology

The following sources have been used during data collection:

1. European Energy and Transport Trends to 2030 – Update 2007. Published in 2008
2. Working documents prepared within TRANSVision 2050 project, still going on in the European Union
3. Data published in the homepage (www.acea.be) of the European Automobile Manufacturers' Association

European Energy and Transport –Trends to 2030

European Energy and Transport, preparing the forecast for 2030, applies the „PRIMES" model, which has been elaborated by the scientific consortium headed by the Athens University of Technology. Linked to it several other models (POLES, GEM-E3 general equilibrium model) are also used. In the development of the model those trends and policies have been taken into consideration, which were effective at the end of 2006. As compared to the basic scenario, some different parameters have been selected (e.g. higher imported energy price) in the case of other scenarios.

The 2006 (and earlier) data were obtained from the EUROSTAT, or from several other official sources. According to DG ECFIN, the economic growth related GDP rate has been determined as 2.2 % average. As for the energy consumption models, from 2010 on a growing competition and general deregulation are reckoned with, essentially under unchanged terms of the taxation system. There are no trend-deflections, but dynamic trend-changes in the model. In order to forecast the European transport activity, the SCENES-model is used. For further calibration purposes the findings resulting from the comprehensive demographic, social, economic and transport trends of this model are used in the PRIMES model.

Methodology of the TRANSVision forecasts

For the period examined in the present study the model of the TRANS-TOOL is used, giving a quantitative estimate (trend extrapolation) of the different inputs. Passenger transport data are available for NUTS 3 regional level; while the data on goods transport are given for NUTS 2 level in the respect of all transport performances, the modal split and utilisation. The forecasts and values obtained this way can be transferred – in compliance with the prediction's objective – into other models (TREMOVE, POLES, ASTRA).

Table 1: Assessment of main macroeconomic and demographic data (EU27s and HU) – Business as usual

EU27s	1990	2000	2010	2020	2030		
Demographic forecasts							
Population (million heads)	470,4	480,5	492,9	496,4	494,8		
Average household (heads)	2,7	2,5	2,3	2,2	2,1		
Number of households (million)	176,1	194,9	213,9	226,2	235,1		
GDP (Billion Euro)*	8108,7	10046,1	12430	15686,9	18687	Composition in % of the value added	
Household expenditures (Billion euro)*	4370,7	5865,9	7270	9035,6	10698		
Value added (Billion Euro)*, out of which	**7386,7**	**9081,2**	**11252,3**	**14213,3**	**16897,9**	**2000**	**2030**
Industry	1579,7	1842,6	2195,1	2760,9	3261,1	20,3	19,3
Building industry	469,9	481,6	573,8	717,5	832,5	5,3	4,9
Services, out of this	4806,1	6176,2	7843,6	100003	12000,7	68	71
Agriculture	241,5	268,7	288,7	248,3	268,7	3	2,2
Energy sector	212,7	264,6	331,8	399,8	436,7	3,4	2,6

*/ at prices of the year 2000

Hungary	1990	2000	2010	2020	2030		
Demographic forecasts							
Population (million heads)	10,4	10,2	10	9,7	9,5		
Average household (heads)	2,6	2,4	2,2	2,1	2		
Number of households (million)	4	4,3	4,5	4,6	4,6		
GDP (Billion Euro)*	64,1	71,8	104,8	147,4	191,6	Composition in % of the value added	
Household expenditures (Billion euro)*	34,9	35,9	57,5	70,3	103,6		
Value added (Billion Euro)*, out of which	**56,8**	**62,1**	**89,4**	**124,4**	**160,6**	**2000**	**2030**
Industry	11,1	16,3	23	30,4	37,7	26,2	23,5
Building industry	2,4	3	4,6	7,7	10,2	4,9	6,4
Services, out of this	36,2	36,6	52,4	73,8	97,2	59	60,5
Agriculture	5	4,1	7,7	10,3	12,5	6,7	7,8
Energy sector	2	2	1,6	2,2	2,9	3,3	1,8

*/ at prices of the year 2000

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

On the basis of the GDP index used for measuring the economic performance in TRANSVision forecasts, three different scenarios have been determined. As compared to the 100% of the 2005 rate, in the worst case the EU economy in 25 years will hardly expand by its one-fifth value. Conversely, according to the moderate (base) scenario the EU GDP will already exceed the 2005 rate by 61.4%, and according to the most favourable scenario, as compared to the basis year it will be 77.4% higher.

It can be seen in Table 2 that in each scenario (to a different extent) on the average, in the EU27s the passenger car supply will increase. The unchanged character or a more significant rising of the cost of the fuel used by passenger cars is predicted.

The cost of the air, maritime and road transport will rise probably to a greater extent than that of the railway which undergoes serious structural changes, and where in the best case a 10% lower transport cost is hinted at.

Table 2: Expected percentage change of the transport indicators of the EU27s

	Basic scenario 2030	**Scenario of high increase 2030**	**Scenario of low increase 2030**
Degree of passenger car supply, EU27s	25,7%	27,4%	11,9%
Average passenger car fuel price	7%	0%	35%
Price of air tickets	0%	20%	30%
Cost of goods transport by road	4%	0%	20%
Cost of railway freight transport	-10%	0%	10%
Cost of maritime transport	4%	15%	20%

Source: TRANSVision - Final Report 2009

Expected development of the transport modal split

Passenger transport

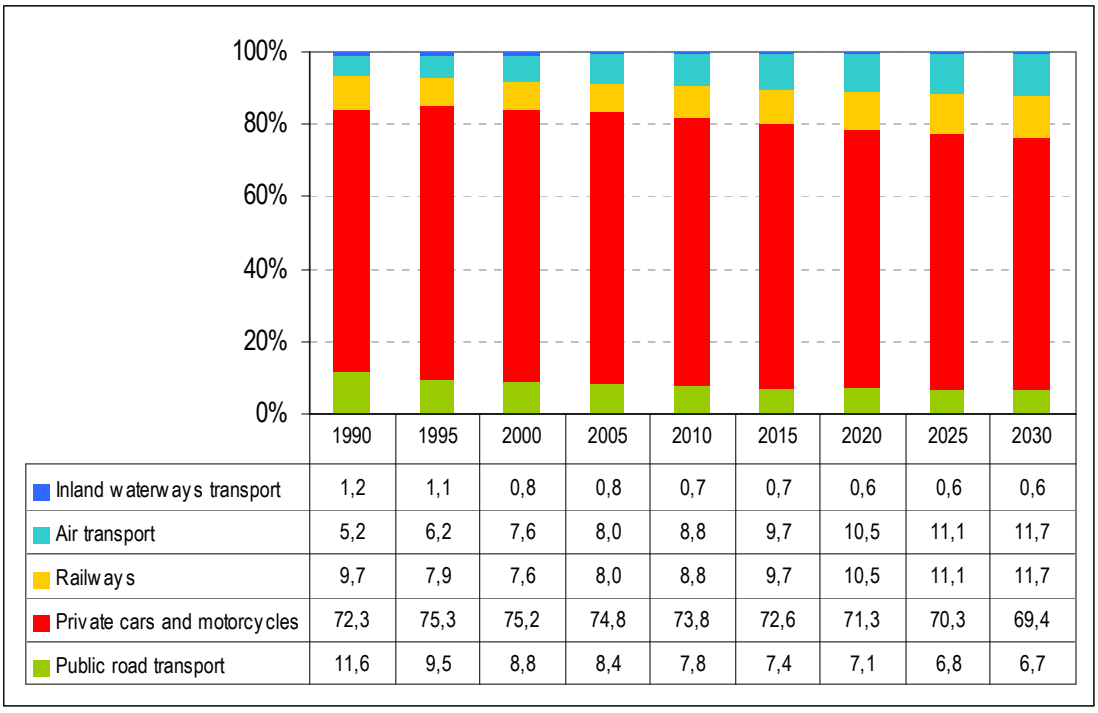
In the EU27s, private transport probably will retain its leading role in passenger transport further. The rate of public transport – although carrying out a greater traffic – in total decreases in comparison with the rising rate of air traffic.

Table 3: Estimate development of passenger transport performances in the EU27s

EU27s	1990	1995	2000	2005	2010	2015	2020	2025	2030
Passenger transport (Billion passenger-kilometres)	4784,5	5221,8	5819,7	6245,4	6783,8	7350	7897,1	8412,8	8860,8
Public road transport	555,6	498,3	514	529	540,4	557,5	580,2	600,5	617,5
Private cars and motorcycles	3459,2	3930,1	4375,8	4714,4	5115	5495,6	5849,3	6171,7	6441,4
Railways	464,8	412	438,5	446,8	468,2	509,2	556,2	611,5	667,6
Air transport	247,9	325,9	442	506,3	610,9	734,5	860,1	976,5	1080,6
Inland waterways transport	57	55,4	49,4	48,9	49,4	50,2	51,4	52,7	53,8
Travel intensity (km/capita)	10717	10959	12112	12769	13762	14838	15909	16952	17908

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

Figure 1: Forecasts of the distribution of passenger transport performances in the EU27s



	1990	1995	2000	2005	2010	2015	2020	2025	2030
Inland waterways transport	1,2	1,1	0,8	0,8	0,7	0,7	0,6	0,6	0,6
Air transport	5,2	6,2	7,6	8,0	8,8	9,7	10,5	11,1	11,7
Railways	9,7	7,9	7,6	8,0	8,8	9,7	10,5	11,1	11,7
Private cars and motorcycles	72,3	75,3	75,2	74,8	73,8	72,6	71,3	70,3	69,4
Public road transport	11,6	9,5	8,8	8,4	7,8	7,4	7,1	6,8	6,7

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

According to the forecasts, private transport will increase more dynamically than in the EU27s in passenger transport (between 2010-2030 with 34.8 percentage points) maintaining its absolute leading role further. Presumably, public transport by road will decrease in both absolute and relative degree.

Table 4: Estimated development of passenger transport performances in Hungary

Hungary	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**
Passenger transport (Mrd ukm)	82,0	75,2	80	80,3	86,9	95,4	105,2	114,8	124,2
Public road transport	19,3	16,6	18,7	18,2	17,6	16,6	15,9	15,3	14,7
Private cars and motorcycles	47,3	45,7	46,6	47,2	54	62,6	72	80,9	88,8
Railways	13,9	10,9	12,3	12,2	12	12	11,9	11,8	12,2
Air transport	1,6	1,9	2,4	2,7	3,3	4,2	5,4	6,8	8,4
Inland waterways transport	0	0	0	0	0	0	0	0	0
Travel intensity (km/capita)	7905	7274	7829	7954	8719	9705	10855	11976	13092

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

Figure 2: Forecasts of the distribution of passenger transport performances in Hungary

	1990	1995	2000	2005	2010	2015	2020	2025	2030
Inland waterways transport	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Air transport	1,9	2,5	3,0	3,4	3,8	4,4	5,1	5,9	6,8
Railways	16,9	14,5	15,4	15,2	13,8	12,6	11,3	10,3	9,8
Private cars and motorcycles	57,6	60,9	58,3	58,8	62,1	65,6	68,4	70,5	71,6
Public road transport	23,5	22,1	23,4	22,7	20,3	17,4	15,1	13,3	11,8

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

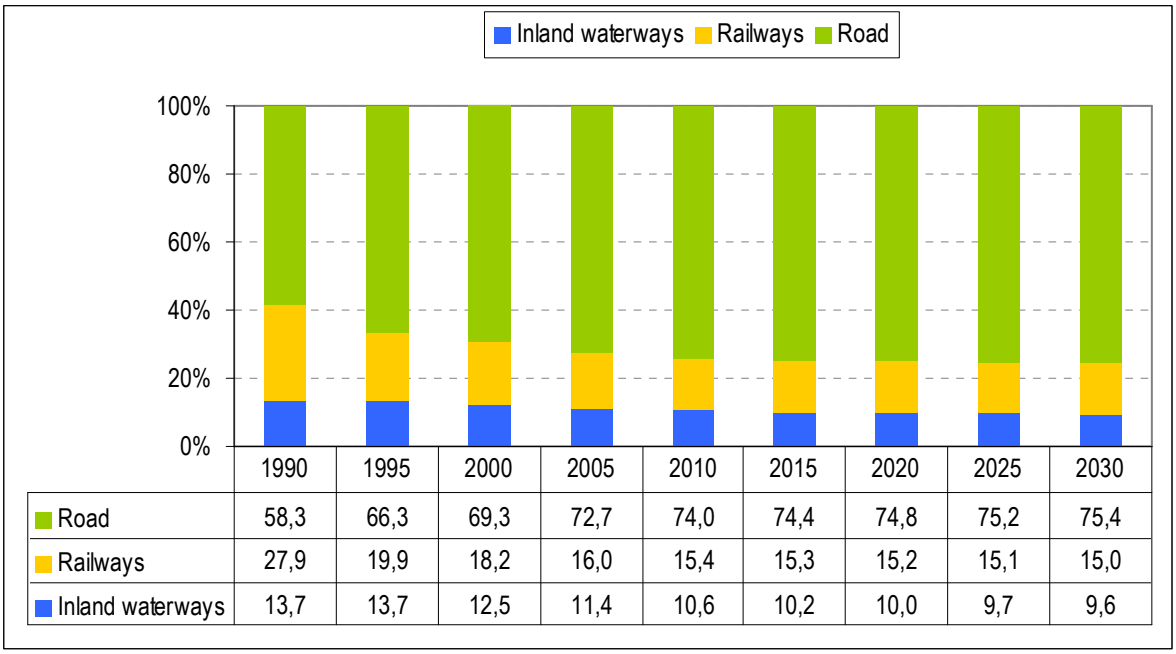
In the EU27s, road transport has the greatest share (with a slightly rising tendency) in goods transport, similar to passenger transport. The transport of goods by railway – despite its absolute increase – according to the estimates, will be able to maintain its proportion only. In the following two decades similar tendencies can be reckoned with in the inland waterways, too.

Table 5: Estimated development of performances in goods transport in the EU27s

EU27s	1990	1995	2000	2005	2010	2015	2020	2025	2030
Goods transport (billion ton-kilometres)	1878,9	1929	2174,9	2463,9	2769,7	3061,3	3321,5	3546,3	3717,2
Road	1096,9	1279,2	1507,5	1790	2048,3	2278,9	2485,6	2666,7	2803
Railway	524,8	385	396,1	393,9	427,2	469,5	504,6	535,2	558,9
Inland waterways	275,2	264,7	271,3	280,1	294,2	312,9	331,3	344,3	353,3
Freightage demand (tkm/1000 GDP)	232	221	216	225	223	218	212	205	199

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

Figure 3: Forecasts of the distribution of goods transport performances in the EU27s



	1990	1995	2000	2005	2010	2015	2020	2025	2030
Road	58,3	66,3	69,3	72,7	74,0	74,4	74,8	75,2	75,4
Railways	27,9	19,9	18,2	16,0	15,4	15,3	15,2	15,1	15,0
Inland waterways	13,7	13,7	12,5	11,4	10,6	10,2	10,0	9,7	9,6

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

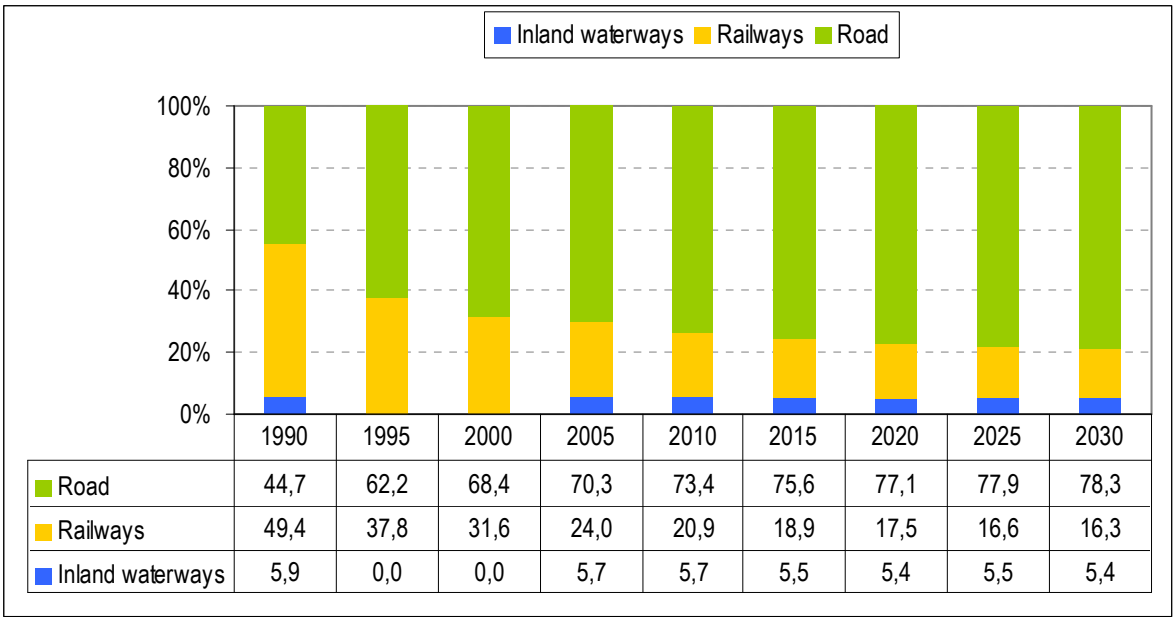
According to the forecasts, the goods transport by road will expand in Hungary in both relative and absolute rates. On the basis of the estimates, the goods transport by railways after 2010 will increase but slightly, however its role in the modal split decreases.

Table 6: Estimated development of goods transport performances in Hungary

Hungary	1990	1995	2000	2005	2010	2015	2020	2025	2030
Goods transport (billion ton-kilometres)	34	22,2	27,9	35,8	42,1	48,1	53,6	58,4	61,8
Road	15,2	13,8	19,1	25,2	30,9	36,4	41,3	45,5	48,4
Railway	16,8	8,4	8,8	8,6	8,8	9,1	9,4	9,7	10,1
Inland waterways	2	0	0	2,1	2,4	2,7	2,9	3,2	3,3
Freightage demand (tkm/1000 GDP)	530	387	389	303	402	383	364	344	323

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

Figure 4: Forecasts of the distribution of goods transport performances in Hungary



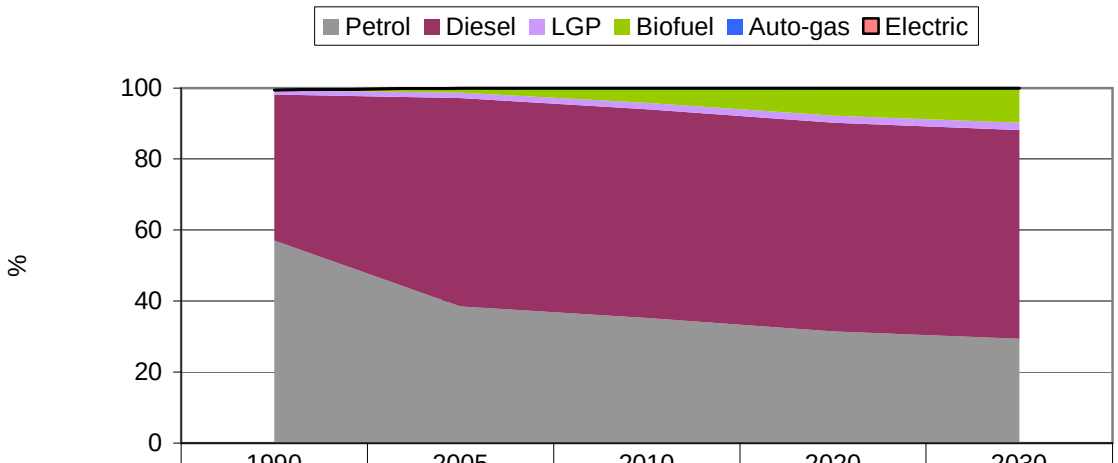
	1990	1995	2000	2005	2010	2015	2020	2025	2030
Road	44,7	62,2	68,4	70,3	73,4	75,6	77,1	77,9	78,3
Railways	49,4	37,8	31,6	24,0	20,9	18,9	17,5	16,6	16,3
Inland waterways	5,9	0,0	0,0	5,7	5,7	5,5	5,4	5,5	5,4

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

Predicted structure of energy consumption

Until to date (up to 2009), consumption of the petrol has fallen significantly against the diesel (Figure 5). Mainly the spread of diesel-fuelled heavy goods vehicles is in the background of this change. This trend will continue in the next 20 years also, though with less intensity. The rate of vehicles with auto-gas, LPG and electric propulsion will increase to a minimum extent in spite of the important absolute rise. On the other hand, the spread of biofuels has been of a larger scale so far, too, and according to our prognosis, this share will be of 10 % in the future.

Figure 5: Estimated utilisation percentage rates of different fuels used in transport in the EU27s



	1990	2005	2010	2020	2030
Electric	0	0	0	0	0
Auto-gas	0,1	0,2	0,2	0,3	0,3
Biofuel	0	1,1	3,9	7,4	9,4
LGP	1,2	1,5	1,8	2	2,1
Diesel	41,1	58,8	58,9	58,9	58,9
Petrol	57,1	38,4	35,2	31,4	29,3

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

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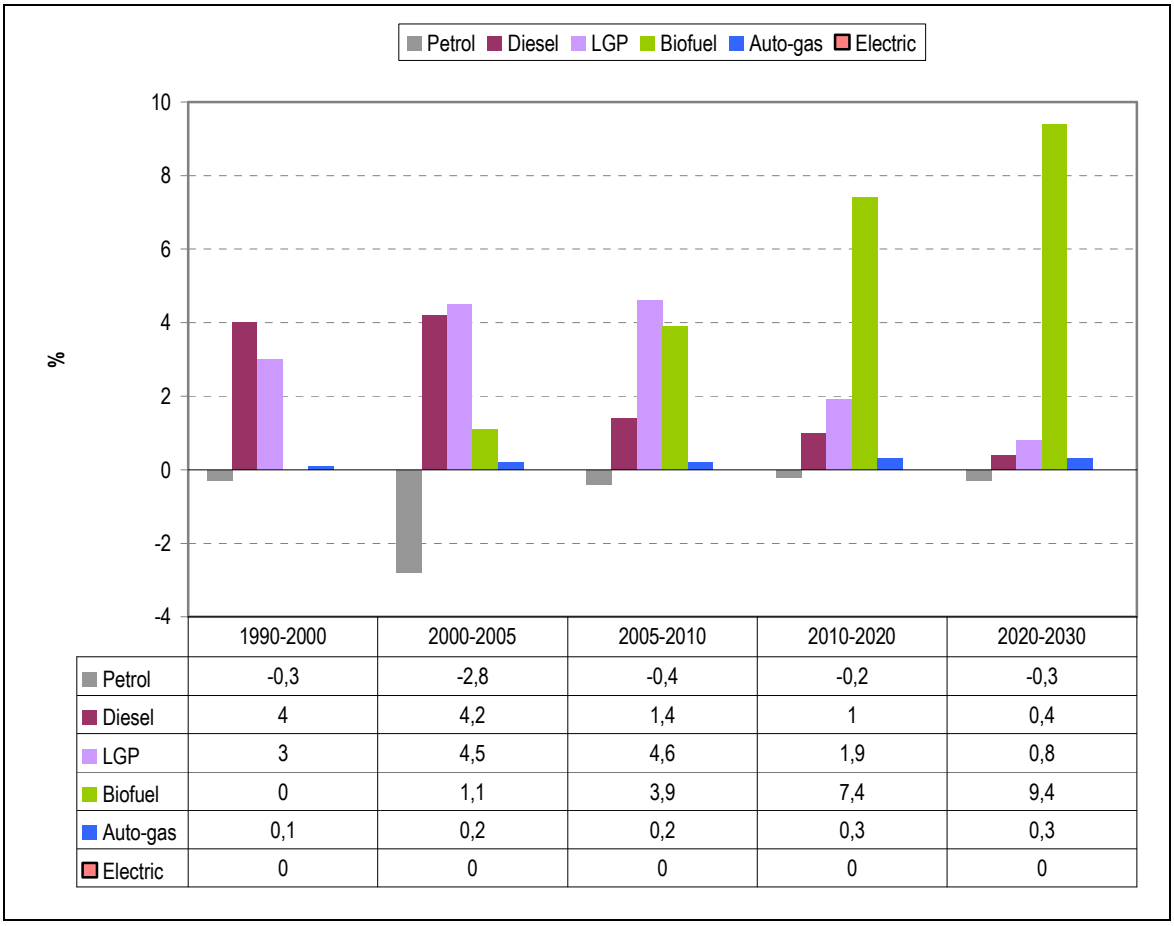
Also the following figure presents well the spread of the biofuels.

Figure 6: Estimated change of the distribution of fuels used in road transport

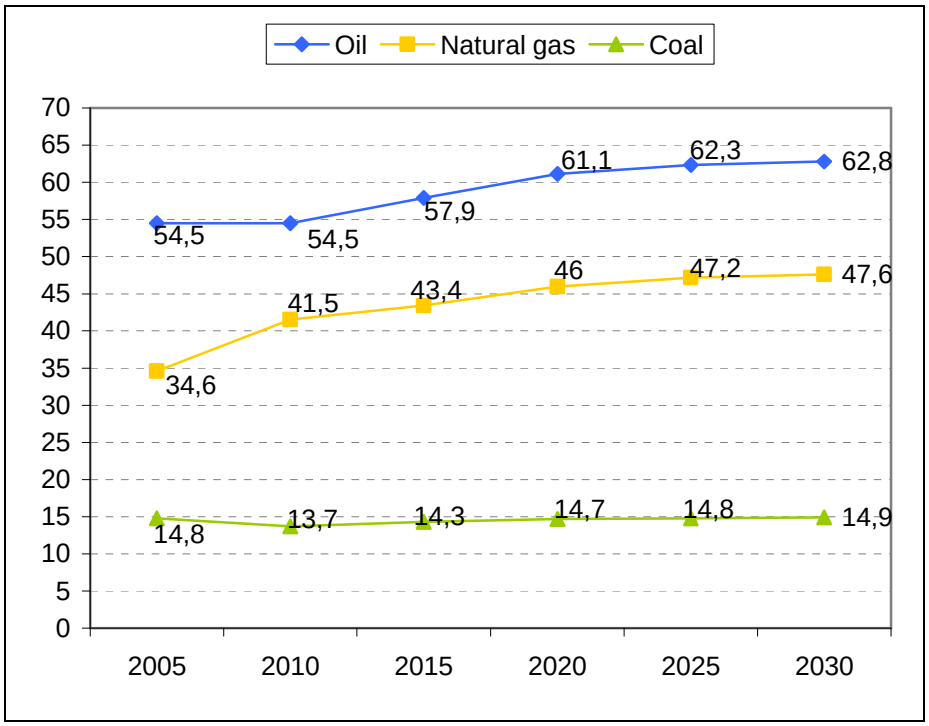


	1990-2000	2000-2005	2005-2010	2010-2020	2020-2030
Petrol	-0,3	-2,8	-0,4	-0,2	-0,3
Diesel	4	4,2	1,4	1	0,4
LGP	3	4,5	4,6	1,9	0,8
Biofuel	0	1,1	3,9	7,4	9,4
Auto-gas	0,1	0,2	0,2	0,3	0,3
Electric	0	0	0	0	0

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

Expected development of fuel prices can be seen in Figure 7. On the basis of the figure – not taking into consideration the slight decrease coming about in the near future – one can not figure on major change in prices in the next 20 years. On the long term, one may reckon with a moderate rise of the oil price. It should be noted that currently (2009), as compared to the forecasts, the oil price is lower; while in 2008 summer they were trading in the "black gold" on the double of the maximum of the 20-year forecast (~140 $). The price of the natural gas, which follows the oil's world market price, changes in the same manner.

Figure 7: Forecasts by 2030 (calculated with 1.25 $/€ 2005 rate) in the prices of the most important primary energy sources



Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

In Table 7 the prognosticated estimate rates of the energy resources can be seen. According to the prognosis the oil still remains the most important energy resource in 2030, although its rate –similar to the solid and nuclear energy resources – will decrease somewhat if compared to the present situation. The rate of the renewing energies continuously rises, that of the natural gas rises, and then stagnates.

Table 7: Forecasts of the distribution of the primary energy sources in the EU27s (in percent)

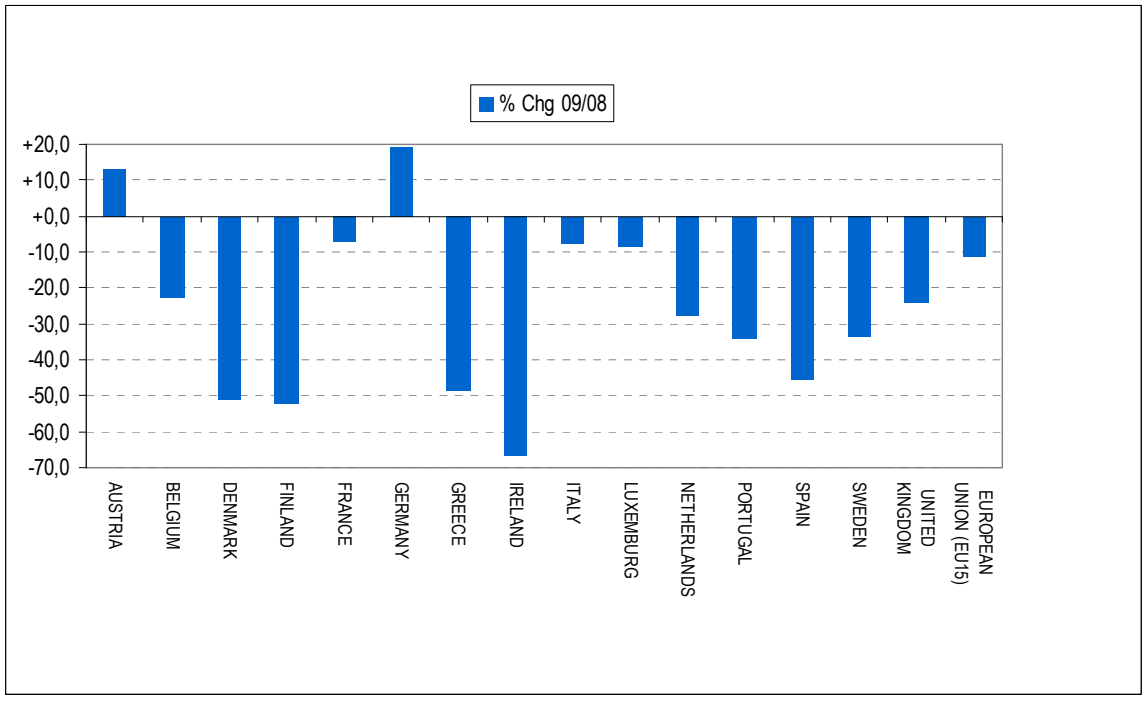
	2000	2005	2010	2015	2020	2025	2030
Solid	22,1	18,8	17,2	17,3	17,4	17,3	16,7
Oil	38,9	38,8	36,4	35,8	35,7	35,5	35,3
Natural gas	20,2	23,0	24,9	25,3	25,7	25,8	25,7
Nuclear	13,5	14,2	13,2	12,6	11,3	10,5	10,3
Renewed	5,2	5,9	8,2	8,8	10	10,9	11,8

Source: European Commission: European Energy and Transport –Trends to 2030 – Update 2007

The impact of the 2008-2009(?) economic crisis on passenger cars sales

The impacts of the economic-financial crisis of our days heavily concerned the fields of transport and traffic. According to data provided by the European Automobile Manufacturers' Association (ACEA) between April 2008 and April 2009 throughout the European Union the sales of new vehicles decreased by about 12%. In Figure 8 it can be seen that this decrease in the old member states was almost 11.2%. Sales of new vehicles decreased practically in all member states: to the greatest extent in Ireland (66.7%); and to the lowest, moreover contrary to the general tendency – due to subsidising the exchange of the old vehicles within the framework of a vitalising programme of the economy – in Germany, where the rate of new sales increased by 19.4%.

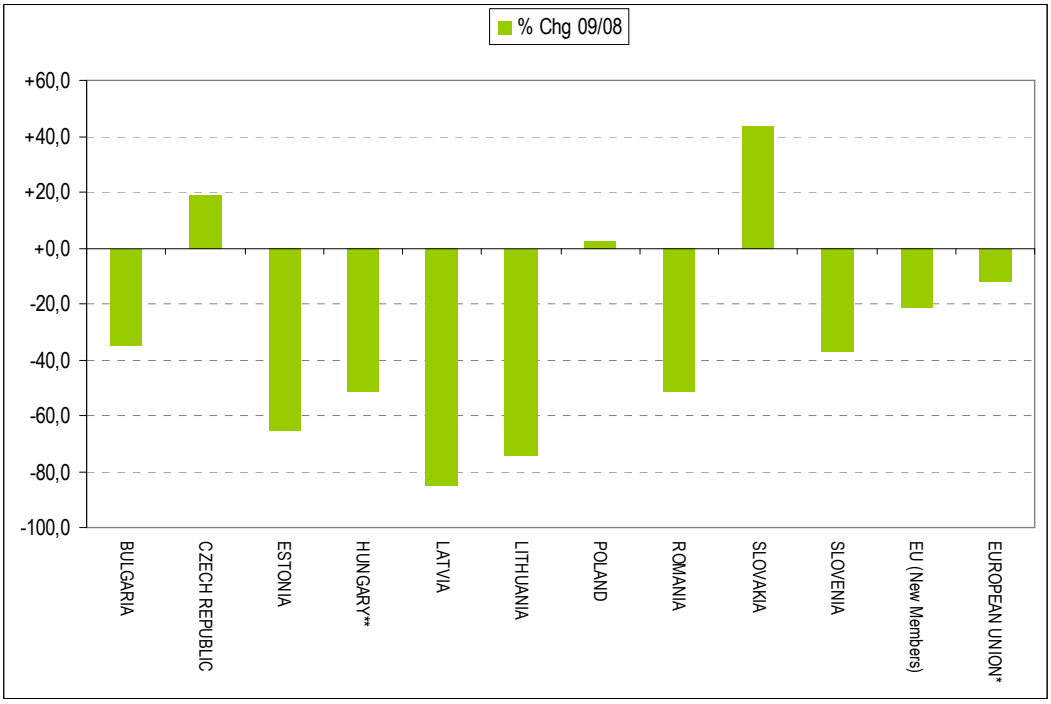
Figure 8: Percentage changes of the new passenger cars' sales in the EU15s, between April 2008 and April 2009



Source: www.acea.be

Out of the countries which acceded to EU in 2004, there are no data for Cyprus and Malta, but the rates of the other "eastern" member states are even worse than those of the western countries. In total, sales of new passenger cars have fallen by 21% (Figure 9). Nevertheless, even here there are significant dissimilarities among the different countries: whereas the index decreased by 88% in Latvia, it rose by 43% in Slovakia (as a result of a German-like used cars' replacing programme).

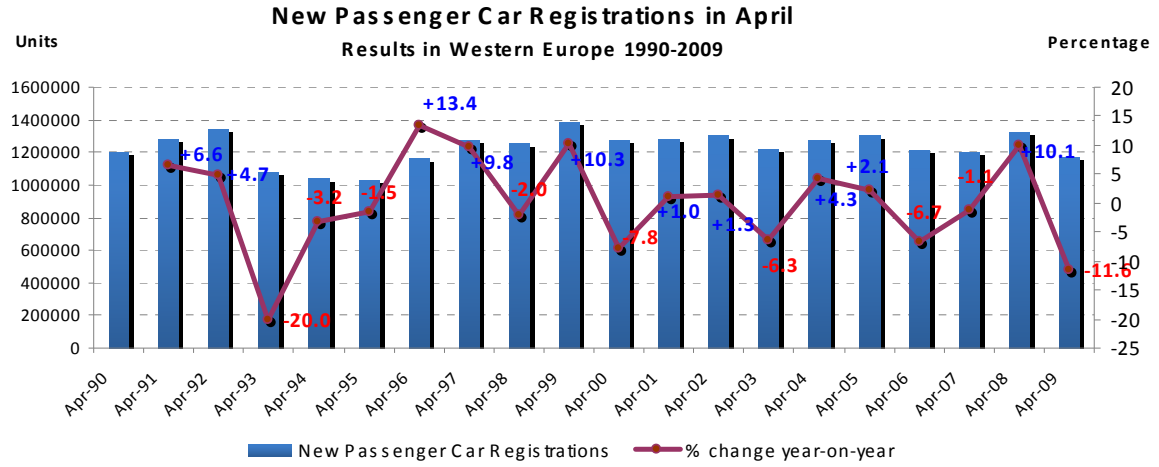
Figure 9: Change in new passenger cars sales in the EU's "new" eastern member states in the period between April 2008 and April 2009 (%)



Source: www.acea.be

It can be seen in Figure 10, that the actual decline exceeding even 11% counts "only" as the second highest rate, because in 1993 the fall was almost twofold (-20%). On the whole, in the 19 years past there was a decline in almost as many cases as a rise. This is also supported by the fact that the number of new vehicles sold (registered), (with the exception of one or two outstandingly successful years), essentially can be considered as identical, i.e. the figure of 1.2 million vehicles has not changed in merits since nearly 20 years. The longterm forecasts in the next 20 years reckon with a further increase of passenger cars' supply. As a matter of fact, this will be significant in those states mainly which were the applicants of the 2004 accession and are still less supplied; as for the old member states referred to – due to the actual high level – one can expect but an expansion of less extent.

Figure 10: Registrations of new passenger cars (sales) in April, in West Europe, between 1990 and 2009



Source: www.acea.be

ERTRAC- Hungary

NATIONAL TECHNOLOGY PLATFORM FOR ROAD TRANSPORT