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## Economic Commission for Europe

### Inland Transport Committee

#### Working Party on Transport Trends and Economics

##### Twenty-fifth session

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Item 7 (a) of the provisional agenda

##### **Review of the transport situation, transport trends and economics in ECE region: Transport Trends and Economics 2011 in the ECE region**

## Transport Trends and Economics, 2011–2012

### Note by the secretariat\*

1. The publication “Transport Trends and Economics” is meant to be a platform for UNECE member States to share their inland transport policies – best practices of the past year or two, as well as perspectives and plans for the years ahead. Its content forms a knowledge sharing tool for the Inland Transport Committee and its Working Parties. Their decisions, experiences and work results are presented to show the trends of inland transport modes the coming years.
2. What are the short-term trends in inland transport and how do they relate to the mid- and long-term trends? What were the major achievements or challenges in the past 12 months and what expectations do the United Nations Economic Commission for Europe (UNECE) Governments have for the forthcoming 12 months? These were the broad

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\* The Working party on Transport Trends and Economics at its twenty-fourth session approved the proposal of the secretariat for the transformation of the Report on the review of the transport situation in UNECE member countries and of emerging development trends to an annual publication on transport trends and economics in the ECE region and asked member countries to respond to the secretariat’s questionnaire on the transport situation in 2011 and expected developments in 2012 (ECE/TRANS/WP.5/50, paras. 31–32). The Inland Transport Committee at its 74th session took note of the draft publication, requested the preparation of a similar report for its next session and endorsed the decision by the Working Party to transform of the review into an annual publication on transport trends and economics in the ECE region (ECE/TRANS/224, paras. 20–21). The following report outlines the working structure of the publication as formulated by the responses received to the questionnaire circulated in 2011.

questions we sought to answer both through the detailed questionnaires sent to the UNECE Governments and through our own thinking and review.

3. The primary objective of this publication is to serve as a reference and source of information and best practices in inland transport. We also hope to provide data for inter temporal analysis of trade-offs in transport policy measures. Over time and with your continued support, I am convinced that we shall achieve it.

4. Thirty-seven ECE member States responded to our invitation to participate in the survey despite the very short notice. Many replies to the questionnaire arrived within a single month. A few other countries expressed their willingness to take part, but lacked the time to collect all the data. This positive response has been very encouraging indeed. It also shows that there is a need for a regular platform for national governments to keep abreast of the latest transport developments of their neighbours and beyond.

5. In addition to the desk research and the analysis of the country responses, we have asked well-known professors and business representatives how they see the situation in a specific transport mode or in transport policy segment and what short term trends they could identify for 2011–2012. Their input has brought not only value to our analysis, but also supplemented it through a scientific perspective.

6. Transport Trends and Economics is not just another publication that collects statistics on inland transport. It summarizes transport policies of Governments and illustrates practical and implemented decisions and their results.

7. The short-term transport trends underpinned with some data and information about main achievements in 2011 and expectations for 2012 are as follows:

## **I. Successful transport policies and main obstacles for the development of inland transport in 2011**

8. In their replies to the questionnaire, UNECE member Governments focused on the national transport policies of 14 different themes subject to the specific needs in their country. Nonetheless the following four themes were included in the majority:

- (a) the reforms and improvement of railways (efficiency, infrastructure, and competitiveness);
- (b) the development of transport infrastructure;
- (c) the improvement of road safety;
- (d) the implementation of intelligent transport systems.

9. Albania mentions the creation of a common integrated infrastructure network for tourism and trade as successful transport policy. Canada launched the Rail Freight Service review so as to identify ways to improve the efficiency, effectiveness and reliability of Canada's rail-based logistics system. France launched the Lanes of high speed (LGV) for railways with 800 km in 2011 and an objective of 2,000 km in 2020. Between 2009 and 2011, the Federal Government of Germany provided a total of 500 million Euros from the second Economic Stimulus Package to fund the development and commercialization of electric mobility. Poland has taken several actions to increase road safety including the Program of Abolishment of Dangerous points on Roads (PADPR). During this programme, 397 investments projects were completed.

10. In addition, transport policy deliberations at national and particularly at international levels reflected a growing concern for sustainable development. In this respect climate change mitigation and adaptation were the strong upcoming new themes (partly as a

reflection of the global preparation for Rio+20). Furthermore, the emphasis on the balanced approach towards the three pillars, i.e. economic, social and environmental sustainability is further strengthened with an increased concern about economic growth and the role of transport (obviously triggered by the extended economic and financial crisis).

11. As it concerns the obstacles for the development of inland transport in 2011 the countries replied the following:

(a) For transport infrastructure: long and bureaucratic administration processes for completing public tenders, financing problems or financing alternatives, etc.

(b) For railways efficiencies: railway companies' reform and separation of infrastructure from operations, railways profitability and investments in infrastructure, maintenance of existing infrastructures.

12. Cyprus considers the lack of infrastructure as a main problem that has hindered the development of transport. The Czech Republic mentions that the lack of resources in public budgets caused the necessity to stop already running infrastructural projects, including maintenance. Italy indicates that motorway network upgrading should be completed as the present network was last upgraded in 2000. Lithuania declared the underdevelopment of infrastructure connections with the European Union (EU) member States and third countries.

13. Geopolitical changes in the ECE region have been leading to plurilateral legal, regulatory and institutional frameworks - e.g. the transport Single Market of the European Union, the North American Free Trade Agreement (NAFTA) arrangements and the emerging Euro-Asian customs union and with this contributing to a more complex legal and regulatory transportation web.

14. At the industry level, we can also see trends of convergences among sectors, especially in the automotive industry and in new transport and transport related customer services. Telecommunication, the electronic industry, as well as the overall Information and Communication technologies expand the horizons of transport. At the same time, the earlier demarcation lines between the sectors are becoming less obvious, the categorisation of enterprises according to sectors is decreasingly correct or possible. In addition, there is a growing demand for closer cooperation among these changing and renewed sectors, e.g. transport planning and urban development.

## II. Road transport

15. Road transport both in terms of car use and commercial operations grew. Almost in all responding countries following the drop in 2009, road transport grew in 2010, sometimes by more than 5 per cent. The forecasts for 2011, in general, show that there is an increase but less so than in 2010. Concerning road freight transport, the issue of TIR Carnets can be a reliable barometer: in 2011 the TIR Carnets issued exceeded three million, having increased by 38 per cent compared to 2009 and more than 9 per cent compared to 2010.

16. As far as individual car traffic and particularly the car ownership is concerned the mega-trends are determined by the macroeconomic relationship with the per capita incomes. According to Marcos Chamon, Paolo Mauro and Yohei Okawa car ownership rates are minimal in the lowest income countries, but increase rapidly as per capita incomes grow above the initial threshold, which they estimate to be about 5,000 United States dollars per capita — based on 2000 prices —, and it falls slightly beyond a per capita income of 10,000 United States dollars (\$). With this mega-trend car ownership from the today level of around 1 billion cars will more than triple by 2050. Many UNECE transition

economies of today will reach or pass the 600 cars per 1,000 people level. The question is if this is realistic to expect that this macroeconomic association between the rising per capita incomes and the average car ownership can be de-coupled and if so how? The European Union's earlier transport policy planned to de-couple economic growth and transport. Nonetheless, with regard to individual car ownership and use the trend might be altered. In fact over the past years the number of mobility choices have already increased significantly in many places through:

- more possibilities for safe walking and biking;
- the development of car-sharing;
- and especially through better public transport.

17. The UNECE countries — particularly in Europe — have a traditionally extended public transport system. In our questionnaire we asked about the cost of a daily ticket for a bus, tram or underground. Based on the responses we could analyse the bus prices. It appears that the most expensive daily bus ticket is in Norway at US\$ 11.90 and the cheapest one is in Tajikistan at US\$ 0.25. The average cost of daily bus ticket in ECE region is US\$ 3.53. These figures reveal not only the differences between cities in the UNECE countries, but also the concerns about the cost recovery capacity of public transport operators simply due to the prices determined by the individual affordability of citizens.

18. Croatia adopted the National Road Traffic Safety Programme 2001–2020 which is divided into five main topics: behaviour of all road users, improvement of road infrastructure, safe driving, efficient medical care of road crash victims and other areas of work. The Cyprus regular passenger transport by bus was transformed and modernized. Germany under the road safety programme 2011 decided to enhance transport safety and reduce the number of deaths in road accidents by 40 per cent by 2020. Greece decided in liberalizing the transport market and simplifying the business access procedures. The Slovak Republic mentions that the cooperation between bus and rail passenger transport is not fully developed and an act on Public Transport is under preparation. Switzerland created an infrastructure fund for the transport problems that concentrate in urban areas. The main purpose of this fund is to co-finance infrastructure projects in urban areas.

### **III. Rail transport**

19. The creation of high speed train networks concurs with the revitalisation of railways during the past two decades. Wherever high speed and very high speed lines have been built, they have proven an enormous success for passenger transport. The main drivers of transformation that railways face today are liberalization and privatization. Increasing competitiveness and efficiency, relieving the burden on the state in terms of financial support and stimulation of investments are the main objectives of railways liberalization. The ultimate goal of liberalization can be considered the privatization. In environmental terms, railways generate the least CO<sub>2</sub> emissions among the inland transport modes. Green logistics and the need to reduce CO<sub>2</sub> emissions should also be a key driver for the rail freight market.

20. In megacities and agglomerations, a regional settlement structure has to be designed based on the elements density, mixing of different land uses, poly-centrality and capacity of public mass transport systems and public facilities. Railways have a significant role to play.

21. Bulgaria considers the railways as a main problem today. The volume of railway traffic is decreasing; the quality of passenger and cargo services was lower than citizen expectations; the productivity of railway sector in Bulgaria was the lowest in the whole EU. Serbian railways went through a downtrending transport volume primary due to lack of

rolling stock and the poor state of infrastructure. Punctuality for passenger traffic as well as for freight transport of Swedish railways has changed for the worse: large parts of the infrastructure are worn down partly because of neglected maintenance, neglected re-investments and increased traffic volumes. Ukraine pointed out the need to reform the sector taking into account the positive experience from the rest of the world. The old railway network in a large geographical area of Turkey, physical inadequacies and geometrical standards, inadequacy of railway network per unit area and inadequacy of ability to provide combined transport services are considered as main problems of Turkish railways. Slovenia mentions that the old rail infrastructure is not meeting the characteristics of modern rail transport needs. Therefore the country is facing a modal shift in favour of road freight transport. Finland reported problems with train traffic during the two previous winters. There are plans to renew rail managements systems and rail switches.

#### **IV. Inland water transport**

22. The recent UNECE White Paper on the Efficient and Sustainable Inland Water Transport in Europe described that inland water transport in the ECE region is losing its market share. Countries reported that the use of inland water transport is low and becoming worse. Another major issue is the subject of missing links in inland water transport (IWT) infrastructure. The economic crisis and the lack of funds have been reported as main obstacles for inland waterways infrastructure improvement. In addition to the lack of proper infrastructure, the old fleets are reported as a barrier towards efficiency. Another important topic is that inland waterways are at risk of losing their environmental performance. The old fleets and the no use of alternative fuels become a significant disadvantage.

23. Serbia mentions that the main problems in Inland Waterways are the low use of inland water transport freight and the reduced turnover of goods in the domestic market. Bulgaria noted that one of the main measures under implementation is the acceleration of infrastructure projects in the field of inland waterways. The continued implementation of the River Information Systems in the inland navigation area of Croatia pursuant to two important strategic documents in this area: the development strategy for inland waterway transport (2008–2018) and mid-Term development plan for inland navigation and inland ports (2009–2016). Lithuania notes as the main obstacle the insufficient developed inland waterways transport sector (old fleet, more than 30 years, differences of depth in the separate parts of the main inland waterways of international importance, Kaunas – Klaipėda). Canada stated that the Federal review process for applications under the Navigable Waters Protection Program streamlined through amendments to the Navigable Waters Protection Act (NWPA).

#### **V. Intermodal transport**

24. In the 35 ECE countries there are more than 144 freight villages or logistic centres. Twelve Governments replied that they have already developed a master plan for their logistics industry and 11 for their intermodal transport.

25. One of the most important issues that surfaced through the responses was countries' geographical location as a logistics competitive advantage. Twenty-three Governments stated that their country has a logistics – transport competitive advantage and six said that the logistics advantage of the country is directly connected with private sector initiatives and investments.

26. Albania stated that combined – intermodal transport in Albania is at a low level. The interaction among the different means of transport is weak, mainly due to lack of adequate

port and rail infrastructure. The Government of Armenia has approved the programme of construction of an international logistic centre and transport infrastructure. The Government of Canada released the National Policy Framework for Strategic Gateways and Trade Corridors to support specific strategies and seize geographic, trade and transportation opportunities in key regions. The Federal Government of Germany has developed a Freight Transport Logistics Action Plan.

27. The countries replied that their geographical – logistics competitive advantage were:

(a) Bulgaria stated that the country has a lot of competitive advantages in logistics and transportation such as its geographical location, the sustainable political and economic situation, its railway and road network density and river – sea connection.

(b) Croatia mentioned that the country is excellently positioned for establishing connections between Western and South Eastern Europe and between Central Europe, the Adriatic and the Mediterranean.

(c) Greece stated that forms the natural gate to the EU from the Far East countries.

(d) Italy mentions that the Italian geographic position in the Mediterranean Sea provides potential advantages along Asia-Europe maritime routes.

28. An 8 per cent rise in traffic for unaccompanied and accompanied transport was reported for 2010. Although post-crisis levels have yet to be obtained, international traffic in 2010 increased by 9 per cent (3.52 million TEU) whereas national traffic increased by 6 per cent (2.54 million TEU). Particular problems arose in 2010 due to the lack of rail pocket wagons able to carry semi-trailers.

29. Intermodal road-rail traffic continued to grow in the first half of 2011. However, this trend slowed down in the second half of 2011. The outlook for 2012 is bleak as economic growth in Europe will be negatively affected by the austerity measures taken in a number of European countries. In addition, the scheduled temporary closure of the Brenner railway line in 2012, for maintenance and rehabilitation works, will complicate transalpine services and may reduce its reliability and punctuality, while increasing costs.

## **VI. Vehicles regulations**

30. The political pressure is huge for technological innovations first of all to arrive at Environmentally Friendly Vehicles with a lot of high-tech safety features. In addition, it is no longer technological improvement, but technological shift from traditional to new and very new solutions. Let's just think about the automatic emergency braking system that automatically detects a potential forward collision, warns the driver and activates the vehicle's braking system to stop the vehicle and/or avoids a collision. Similarly the lane departure warning system (LDWS) is another new safety feature of vehicles. However, the investment in vehicle safety will be impossible to reap unless road infrastructure keeps pace.

31. New technologies can bring many solutions to past and current problems, but as they open new avenues they also encounter new problems. For example, the hybrid and electric vehicles have the benefit of no-noise. As one man's dish is the other's poison, this benefit is a disadvantage for those with impaired vision and increased reliance on sound. For them silent vehicles make it practically impossible to recognize the approach, presence and/or departure of the vehicle. Regulators, e.g. at the UNECE World Forum (WP.29), therefore, consider requiring audible, acoustic signalling techniques when the vehicles speed is low (level of speed to be indicated).

32. While many technological changes are revolutionary, the automotive industry and its markets are undergoing major changes. Similar to the airline markets that were shook and shook up by the emergence of low-cost carriers, in the automotive sector low cost manufacturers emerged in emerging economies where the new customers are located.

## **VII. Climate change**

33. Thirty Governments replied that they are taking measures on climate change. Sixty per cent of these countries are taking measures for both mitigation and adaptation of climate change, while 40 per cent for mitigation only.

34. Many innovative climate change police measures were reported by the countries:

(a) Belgium has taken several measures in 2010 on climate change such as compensations for bicycle use, discounts for the purchase of new vehicles, eco-bonus and eco – penalty implementation measures, benefits for company cars.

(b) The Government of Canada will spend more than \$149 million over the next five years on climate change adaptation initiatives.

(c) Currently, the Bulgarian Government coordinates the development of the Third National Action Plan on Climate Change which is to be implemented in 2013–2020.

(d) The Danish Government has taken several measures with a main aim of reducing CO<sub>2</sub> emissions by 40 per cent in 2020 compared to 1990.

(e) The Republic of Tajikistan allocated US\$ 50 million as to begin developing and implementing projects for climate change.

(f) The Government of Ukraine has approved the National Action Plan to implement the provisions of the Kyoto Protocol.

(g) Norway reported that weather conditions, a cold winter followed by heavy rainfall, caused damages to transport infrastructure.

35. The need for developing and using a standard monitoring assessment tool for CO<sub>2</sub> emissions in inland transport including a transport policy converter is confirmed by Governments replies. The For Future Inland Transport Systems (ForFITS) project of the UNECE Transport Division meets this need by developing such a tool.

36. Adaptation to climate change impacts has not been given as much priority as mitigation. This conclusion is also documented by Governments responses. The term adaptation refers to the ability of a transport system to adjust to climate change and to moderate potential damage. The UNECE Transport Division established a group of experts on climate change impacts and adaptation on international transport networks. The main objective of this expert group is identifying potential climatic impacts on transport infrastructure, determining the costs of climatic impacts for inland transport networks and identifying existing best practices.

## **VIII. Intelligent transport systems**

37. Twenty-six of the participating countries replied positively on the use of intelligent transport systems in their public transport network. Buses, trains, trams and metro are the most popular transport means where UNECE Governments have installed Intelligent Transport Systems (ITS).

38. There is one main trend and basic need for this subject: reaching a common definition for intelligent transport systems. In addition, interoperability and the ITS architecture should be facilitated.

39. Germany reported that the use of ITS is included in the 300 million Euro project “Road Telematics 2015”. Latvia mentioned that in order to efficiently use the transportation infrastructure, as well as to ensure most smooth transit via the country, the International Freight Logistics and Port Information System (SKLOIS) is being implemented. The Government of Canada supports ITS deployment through contributions to projects undertaken in partnership with provincial and municipal governments and through Public Private Partnership (PPP) schemes. The Czech Republic illustrates that a nationwide information system on Timetables (NISTT) provides State guaranteed data on public passenger transport for the general public, transport customers and carriers.

## **IX. Transport Infrastructure**

40. The Trans-European Motorway (TEM) and Trans-European Railway (TER) are flagship infrastructure projects of UNECE. In 2011 the revised Master Plan was published. According to the TEM status map, it is possible in 2020 that motorway or dual carriageway sections will be in full operation in five countries and with a few exceptions also in another six countries. According to the TER status map railway sections with a design speed of 160km/h now exist in nine out of the 25 countries participating in the revision.

41. In addition, under the Euro-Asian Transport Linkages Project (EATL) 421 projects were proposed with a total cost amounting to approximately US\$ 271 billion. One-hundred-forty-six are road projects (47 per cent) with value of US\$ 113 billion (53 per cent of the total investment cost), 121 are railway projects (39 per cent) with value of \$75 billion (35 per cent) and 44 other projects (14 per cent) with value of \$25 billion (12 per cent of the total investment cost).

42. The Government of Azerbaijan has prepared the new Strategy for developing the Transport systems, for approval by the cabinet of Ministers. Bulgaria mentioned that railways infrastructure is in poor condition and that the subsidies for the railway sector were increasing but less and less were investments resources. The implementation of Canada’s Economic Action Plan injected nearly \$500 million of stimulus money into the economy and resulted in a more modern transportation infrastructure. In 2010, the Croatian Government adopted an Action Plan to remove administration obstacles to investments in the Republic of Croatia comprising of 50 measures. Cyprus reported that the main problem hindering the development of transport in the country is the lack of infrastructure. Israel mentioned that the increasing congestion in urban areas and the decreasing share of public transport led the Government to investment more in rail and road systems. Turkey reported that the General Directorate of Highways considered the realization of some of motorways projects by PPP financing by the end of 2023 to meet road transport demand.