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## **Economic Commission for Europe**

### **Inland Transport Committee**

#### **Seventy-fourth session**

Geneva, 28 February–1 March 2012

Item 4 (b) of the provisional agenda

#### **Climate change and transport: Impacts of climate change on international transport networks and adaptation requirements**

### **Impacts of climate change on international transport networks and adaptation requirements**

#### **Note by the secretariat**

##### *Summary*

The note provides the Inland Transport Committee with a brief review of issues of climate change impacts and adaptation on international transport networks. It also highlights the importance of adaptation action in reducing the vulnerabilities and increasing the resilience of transport systems to climatic impacts. Moreover, it provides information regarding the main objectives and the program of work that the expert group will undertake throughout the whole period of its work.

## **I. The Mandate**

1. At its seventy-second session in February 2010 the United Nations Economic Commission for Europe (UNECE) Inland Transport Committee invited its subsidiary bodies to incorporate global warming and transport in their agendas (ECE/TRANS/208, para. 94). In September 2010, UNECE and the United Nations Conference on Trade and Development (UNCTAD), drawing on their respective mandates and experience, jointly organized a workshop on “Climate Change Impacts on International Transport Networks”, held under the auspices of the Working Party on Transport Trends and Economics (WP.5). The workshop raised awareness about the important challenges that climate change impacts and adaptation requirements present for international transport networks. It also demonstrated the urgent need to prepare appropriate policy actions, as well as the need to exchange information about best practices and concluded that there is considerable merit in establishing a new expert group to study the matter.

2. At its seventy-third session, in March 2011, the Inland Transport Committee, noting the results of the joint UNECE-UNCTAD workshop, agreed to establish a Group of Experts on climate change impacts and adaptation for international transport networks and to adopt its terms of reference. At its forty-first meeting, the UNECE Executive Committee (EXCOM) approved the establishment of such an expert group. The Group of Experts, functioning under the supervision of WP.5, is expected to complete its work and submit a final report within two years (May 2013).

## **II. Introduction and Background**

3. So far, the work of the UNECE on climate change has focused on the mitigation of environmentally harmful effects of inland transport. In particular, activities of the UNECE have targeted the reduction of emissions of gaseous pollutants and greenhouse gases in the road transport sector through more stringent emission requirements for new vehicles elaborated by the World Forum for Harmonization of Vehicle Regulations (WP.29). The World Forum’s Round Table on Climate Change and Transport in June 2010 identified potential scenarios from which WP.29 would develop its future work.

4. In 2009 the UNECE Transport Division initiated a new project called ForFITS (For Future Inland Transport Systems) to study the impact of inland transport on climate change and called the UN Development Account (UNDA) for funds to build up this project together with all UN Regional Commissions. The funds for this 3 years project have been released in January 2011 and the work activities are in progress. The implementation of this project will be concluded in December 2013.

5. The main objective of the project is to enhance international cooperation and planning towards sustainable transport policies through the development and use of a standard monitoring and assessment tool for CO<sub>2</sub> emissions in inland transport including a transport policy converter. This first activity within this project is to develop an information and analysis tool based on a uniform methodology for the evaluation of the emissions of carbon dioxide (CO<sub>2</sub>) in the inland transport sector (road, rail and waterways except national and international aviation and maritime transport), taking into account climate-relevant indicators, new transportation trends and the implementation of regional, national or local policy measures. CO<sub>2</sub> emissions caused by international aviation and maritime transport are excluded from this project.

6. UNECE is taking coordinated steps to address climate change adaptation in the field of transport. The term adaptation refers to the ability of a system to adjust to climate change

(including climate variability and extremes) to moderate potential damage, to take advantage of opportunities, or to cope with the consequences. Adaptation responses have not been given, generally, as much priority as mitigation. It is however imperative that policy makers and stakeholders focus on this aspect of addressing the climate change challenge. A clear understanding of climate change potential impacts, risks and vulnerabilities are a pre-requisite for well designed, resilient systems and structures. Poor health of populations, lack of infrastructure, weakly diversified economies, missing institutions and soft governance structures expose poorer countries and communities not just to potentially catastrophic large-scale disasters but also to a more permanent state of economic stress from higher average temperatures, reduced water sources, more frequent flooding and intensified windstorms.

7. Developing effective adaptation strategies for climate change impacts on transport requires both policy action and collaborative research. Well targeted vulnerability studies, empirical studies and assessment of projected risks and related costs are a first step toward bridging the current knowledge gaps and identifying priority areas.

8. Adaptation action aims at reducing vulnerabilities and increases the resilience of transport systems to climatic impacts. Resilience refers to the ability of a system to withstand negative impacts without losing its basic functions. In the transport context, it is not only about physical strength and durability of a structure, but more importantly, it defines the ability of a system to recover from an incident quickly and at minimal cost. This means, in other words, that materials have to be cost-effective and easy to find, replace or repair. It follows that climate change impacts on infrastructure ought to be a key consideration in transport planning, design and construction, as well as in broader economic and development policies.

### **III. The Work of the Expert Group**

9. The Group of Experts is expected to complete its work within two years (2013) and to submit a full report of its accomplishments. This will include policy-oriented recommendations that aim to improve the long-term sustainability of transport with an emphasis on international connections and set best examples of national policies, address the issues of transport networks vulnerability amongst member Governments; including developing and landlocked countries, as well as small island States.

10. More specifically the work of the expert group will focus on the following:

(a) Identify potential climatic impacts on transport infrastructure, including ports and their hinterland connections, as well as on transport services and networks across the broader supply-chain, including their type, range and distribution across different regions and transport modes;

(b) Determine the costs of climatic impacts for inland transport networks, including the broader implications for trade and development of impacted countries as well as identify the requirements for corresponding adaptation responses;

(c) Identify existing best practices in national policies and risk management as well as formulation of relevant strategies to enhance the resilience of transport networks, through changes in infrastructure design and operation planning and management, taking into account specific risks and vulnerabilities.

11. Following the approval of the establishment of the Expert Group by EXCOM in May 2011, the group met twice, in September and November 2011, respectively. The group attracted the attention of 28 governments, governmental and non governmental organizations, such as the World Meteorological Organization, the Eurasian Economic

Community, the International Union of Railways, the International Road Transport Union, the International Road Federation and academia. Through the allocation of some modest funding, the secretariat has been able to ensure the services of a consultant in support of the work of the group.

12. Under the chairmanship of Mr Jerzy KLENIEWSKI (POL) and Mr. André LEUXE (FR) as vice-chair the group so far has addressed the following topics:

- (a) agreed its program of work,
- (b) developed the structure of final report,
- (c) developed with the help of the external consultant the scientific questionnaire for the collection of information needed,

(d) delivered by the external consultant the first part of the report. UNECE is planning the organization of an international prestigious conference on “Adaptation of Transport Networks to Climate Change” to be held in 2012. The Greek Chambers of Commerce and Industry have offered to host the Conference in Greece. The main objective of the conference is to raise awareness on the subject and contribute to the work of the group.

13. Recognizing that climate change impacts and adaptation on transport networks is a global issue, as well as the unique character of the work of this group and the importance of the issues at stake, the group requested the secretariat to invite other UN regional commissions and UN agencies including UNCTAD, and WMO as well as the EC to contribute to its work.

14. The activities that the group will undertake throughout the whole period of its work with the support of the secretariat, is as follows:

(a) Take stock of the available data and analysis of climate change impacts on transport networks in the ECE region and beyond;

(b) Collect information on all relevant planning, management, organizational and other initiatives for adaptation of transport networks to climate change;

(c) Prepare, in a coordinated manner, recommendations or proposals to member Governments, with a view to improving the adaptability of transport networks to climate change in areas such as: infrastructure, risk-assessment methodology, evaluation of adaptive measures, risk management, training tools, and cross-border information sharing by national transport authorities;

(d) Prepare and present a final report of its work.

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