



Economic Commission for Europe**Inland Transport Committee****Eighty-fourth session**

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Item 9 (e) (ii) of the provisional agenda

Strategic questions of a horizontal and cross-sectoral policy or regulatory nature:**Environment, climate change and transport:****Inland Transport Committee acting on climate change****and the Paris Agreement: Decarbonisation and adaptation requirements****Climate change mitigation in inland transport at an inflection point****Note by the secretariat***Summary*

The worsening globally situation due to the increasing frequency and severity of climate change impacts, combined with the call for enhanced efforts to achieve the Sustainable Development Goals, including via mitigation policies and measures the limiting of global warming to below two degrees Celsius as set in the Paris Agreement on climate change, creates the most pressing demand for inland transport to become part of the strictest solutions. Particularly as inland transport is the main contributor to CO₂ emissions. The Committee may wish to consider this document which offers a brief analysis of the issue and possible ways to strengthen the role and contributions of the Committee on this critical matter which is addressed horizontally by several of the Committee's subsidiaries, as well as the secretariat.

The Committee may wish to request its subsidiary bodies to review their existing activities relating to climate change and discuss future plans and recommendations for enhancing support of the Committee to member States and contracting parties. The Committee may also wish to request its subsidiary bodies to communicate the outcomes of their discussions to the secretariat for consolidation and further analysis to submit to the 85th session of the Committee in consultation with the Bureau.



I. Introduction

1. The 2030 Agenda for Sustainable Development calls for urgent action to combat climate change and its impacts.¹ The Paris Agreement on climate change, adopted by 196 Parties at UNFCCC COP21 in Paris in 2015, sets its goal to limit global warming to well below two, preferably to 1.5 degrees Celsius, compared to pre-industrial levels. Under the Agreement, the global peaking of greenhouse gas emissions needs to be reached as soon as possible to achieve a climate neutral world by mid-century.

2. Globally CO₂, the major contributor to the greenhouse gas (GHG), emitted from the transport sector account for 24.5 per cent of the emissions from fuel combustion by all the economic sectors.² Within the transport sector, more than 78 per cent of CO₂ emissions are from inland transport, including about 73.5 per cent from the road subsector alone.³

3. To attain the goal set by the Paris Agreement, most governments exert multiple efforts to reach global peaking of greenhouse gas emissions as soon as possible and set a climate neutral target to 2050. Tough ambitious targets have been set for the transport sector, in particular road, to cut CO₂ emissions. For example, in July 2021 the European Commission (EC) proposed a ban on new cars with internal combustion engines from 2035. In November 2020, the United Kingdom of Great Britain and Northern Ireland announced its plan to ban the sale of new petrol and diesel cars and vans from 2030 to cut emissions to net zero by 2050.

4. On the other side, the International Transport Forum (ITF) predicts that by 2050 passenger transport will increase 2.3-fold and freight transport will grow 2.6-fold under the trajectory reflecting current efforts.⁴ CO₂ emissions from transport will increase by 16 per cent by 2050 even if today's commitments to decarbonise transport are fully implemented. ITF estimates that reduction of transport CO₂ emissions by almost 70 per cent in 2050 compared to 2015 would reach the goal of the Paris Agreement to limit global warming to 1.5° degrees Celsius. More ambitious decarbonisation policies and comprehensive measures are needed in the transport sector.

II. Existing activities undertaken by the subsidiary bodies and the secretariat

5. Climate change is considered a cross-cutting subject in the Inland Transport Committee Strategy until 2030⁵ (ECE/TRANS/288/Add.2). The Committee, its relevant Working Parties and the secretariat have been working to contribute to mitigation and adaptation measures of member States for climate change as shown in Annex I. The activities are summarized as follows:

(a) High-level policy, regulatory and institutional support at the level of the Committee's decisions and endorsed Ministerial Resolutions and Declaration.

(b) Assessment of impact on transport and adaptation measures, by the Working Party on Road Transport (SC.1), the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3) and the Working Party on Transport Trends and Economics (WP.5);

(c) Regulatory framework for deployment of safe electric and hydrogen vehicles, by the Working Party on the Transport of Dangerous Goods (WP.15) and the World Forum for Harmonization of Vehicle Regulations (WP.29);

¹ Goal 13, United Nations General Assembly resolution 70/1 Transforming our world: the 2030 Agenda for Sustainable Development, 2015.

² International Energy Agency, CO₂ Emissions from Fuel Combustion, <https://www.iea.org/subscribe-to-data-services/co2-emissions-statistics>, data of 2019.

³ Based on data of International Energy Agency in 2019.

⁴ International Transport Forum (ITF), Transport Outlook 2021, 2021.

⁵ Paragraph 12, Page 6, Inland Transport Committee Strategy until 2030, 2019.

- (d) Regulatory framework for measuring CO₂ emissions from road vehicles, by WP.29;
- (e) Regulatory framework for the use of new technology to ensure minimum degradation from batteries, by WP.29;
- (f) Regulatory framework for improving engine efficiency and reducing emissions, by WP.29;
- (g) Intermodal system and modal shift from road to more environmentally sound modes, by the Working Party on Rail Transport (SC.2) and the Working Party on Intermodal Transport and Logistics (WP.24);
- (h) Promotion and facilitation of green transport and mobility, by WP.5 and the Transport, Health and Environment Pan-European Programme (THE PEP);
- (i) Studies and publications, by WP.5 and THE PEP;
- (j) Capacity building, by SC.3 and WP.5;
- (k) Development of tools, such as the For Future Inland Transport Systems model (ForFITS), the Intelligent Transport System Road Map and THE PEP handbook;
- (l) Inter-Working Party cooperation and coordination, between SC.1, WP.5, WP.15 and WP.29; and
- (m) Project on new energy, the secretariat.

III. Preliminary analysis of the activities undertaken by the subsidiary bodies and the secretariat

6. It is clear that the Committee plays a key role in combating climate change and has significantly contributed to the global agenda and member States' efforts. There are still areas to be explored further to support member States, such as:

- (a) Infrastructure to support deployment of electric and hydrogen vehicles;
- (b) Ensuring safety in the transportation of batteries and hydrogen for vehicles, in light of the increased frequency, quantity and varied ways of these transports;
- (c) Promotion of cooperation between member States;
- (d) Improvement of transport operations like better fleet management;
- (e) Additional regulatory areas, such as possible amendments to road signs and traffic rules for cycling;
- (f) Development of more tools; and
- (g) Innovations and new technologies.

7. There are also areas to be enhanced, for example:

- (a) Cooperation and coordination between working parties;
- (b) Mitigation measures for road and inland water transport;
- (c) Support to member States for accelerated modal shift;
- (d) Sharing experience and elaboration of best practices;
- (e) Capacity building; and
- (f) Projects to support member States.

IV. Way forward

8. Facing ambitious targets on zero emission from transport set by governments, the transport sector must make greater efforts at the national level and needs more support and

cooperation at the regional and global levels. The Committee and its subsidiary bodies have already made important contributions and have potential to provide more comprehensive support to member States and contracting parties with their expertise and mandates.

9. The areas to be explored and enhanced from the afore-mentioned preliminary analysis and diverse levels of actions taken by different subsidiary bodies show the needs for the same understanding of the urgency for actions, a common vision, a clear strategy or road map and coordinated actions. These actions would augment the Committee's support to member States and contracting parties in combating climate change.

10. The Committee may wish to review the existing activities of its subsidiary bodies and the secretariat and discuss the ways to enhance the support for member States and contracting parties to achieve global and national goals on climate change.

11. The Committee may also wish to request its subsidiary bodies to communicate the outcomes of their discussions to the secretariat for consolidation and further analysis in order to submit a comprehensive document to the 85th session of the Committee in consultation with the Bureau.

Annex I

Climate Change-Related Activities of the Inland Transport Committee, its Working Parties and the Secretariat

I. Inland Transport Committee

The Inland Transport Committee (ITC) is the highest decision-making body of ECE on transport related matters. Climate change is a key cross-cutting area in the Inland Transport Committee Strategy until 2030 (ECE/TRANS/288/Add.2). Ministerial segments during its plenary meetings and high-level documents (Ministerial Resolutions and Declaration) derived from them and endorsed by the Committee have addressed the issue and created relevant mandates for further work in this area (for more details see Annex II to this document). The Committee has consistently advanced Climate Change as a key agenda item during its regular session and its decisions have contributed to establishing specialized intergovernmental platforms and advancing regulatory work, technical knowledge and tools with the aim of tackling the causes and consequences of Climate Change in the broader area of inland transport.

II. Working Party on Road Transport (SC.1)

SC.1 restructured its agenda with effect from its 115th session in October 2020 to better reflect an alignment with the Inland Transport Committee Strategy until 2030. This included the addition of an agenda item on “safe and sustainable road infrastructure” which includes interaction with the Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport (WP.5/GE.3) through the sharing of information related to climate change impacts on transport infrastructure by the latter. One of SC.1’s key functions is to be a platform for the sharing of best practices and emerging trends for road transport and infrastructure.

III. Working Party on Rail Transport (SC.2)

SC.2 works on promoting the shift to rail as a tool to combat climate change. This is done through several areas. Firstly, through its main legal agreement, the European Agreement on Main International Railways Lines (AGC), providing for an international network of E-railways. Secondly through activities aimed at increasing the competitiveness of rail such as the development of the new convention on unified railway law aimed at breaking down the administrative barriers at the border between the two existing legal regimes in the movement of freight and in the promotion of international passenger rail transport to draw traffic away from more polluting modes of transport. Furthermore, work is ongoing on the preparation of rules for the permanent marking of railway rolling stock to make investment in railway equipment more secure and therefore cheaper, increasing the competitive position of operators. On the passenger front, member States are also developing a legal instrument to improve accessibility of stations with the aim of encouraging further modal shift. Thirdly through several other policy initiatives such as around innovation aimed at reducing the already low carbon impact of the rail sector.

IV. Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3)

SC.3/WP.3 at its 58th session held a workshop in February 2021 entitled “Climate change and the extreme water situation on European waterways and its impact on inland water transport”. The purpose of the workshop was to (a) highlight the impact of climate change and associated events on European waterways, ports and the operation of inland fleet; (b) address the data sources and methodologies for climate projections; (c) share experiences in risk assessment

methodologies, actions, measures and strategies aimed to cope with climate change impacts on inland navigation; (d) exchange best practices in this field; and (e) consider actions that could be undertaken by SC.3 to assist countries in addressing this challenge.

V. Working Party on Transport Trends and Economics (WP.5)

WP.5 provides inter-governmental dialogues on green urban mobility issues, such as the events in conjunction with the WP.5 sessions:

- Expert round table on economic analysis of the transformation of urban transport systems in September 2020, and
- Workshop on Green Urban Transport in September 2021 co-organized by the Sustainable Transport Division and the Forests, Land and Housing Division.

In 2020, WP.5 established a Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport to further the work of the Group of Experts on Climate Change Impacts and Adaptation for Transport Networks and Nodes. The Group of Experts is tasked to continue to raise awareness, build capacity and integrate knowledge from countries and the scientific community on climate change impact assessment and adaptation for inland transport. It is also tasked to further advance the state of knowledge on, and the analysis of climate change impacts on inland transport, and the identification of suitable and cost-effective adaptation measures.

WP.5 proposed the establishment of a group of experts on cycling infrastructure module in September 2021 for approval by the Committee. The group of experts is tasked to advance the elaboration of the infrastructure module in close liaison with THE PEP Partnership on Cycling Promotion/Active Mobility. It will focus on:

- Collection of data on national cycling networks, data analysis and proposal of ECE routes based on national routes forming a ECE cycling network, and
- Elaboration of acceptable definitions for various types of cycling infrastructure as well as new road signs which in addition to existing signs of the 1968 Convention on Road Signs and Signals should be used for signposting the routes.

The secretariat issued the following publications in the framework of WP.5:

- In February 2020, the secretariat issued a publication in the framework of WP.5 on “Mobility as a Service (MaaS)”.
- In September 2020 the secretariat launched the Handbook on Sustainable Urban Mobility and Spatial Planning – Promoting Active Mobility.
- In December 2015, the secretariat issued a publication on Sustainable Urban Mobility and Public Transport.

VI. Working Party on the Transport of Dangerous Goods (WP.15)

WP.15 established a task force in 2020 to consider the use of battery electric vehicles and hydrogen fuel cell vehicles for the transport of dangerous goods, with the participation of the secretariat of the Working Party on Passive Safety (GRSP) and the Working Party on General Safety Provisions (GRSG) of the World Forum for Harmonization of Vehicle Regulations (WP.29). In May 2021, WP.15 decided to continue the work in an informal group led by the Netherlands. It adopted the terms of reference for the informal working group to develop, in full cooperation with other working parties (e.g. WP.29), appropriate provisions of the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR) for the construction of the battery electric vehicles (BEV) and hydrogen fuel cell vehicles (HFCV) and their trailers with a view to ensuring the safe transport of dangerous goods in these vehicles. The provisions will particularly focus on: (i) the electrical equipment of these

vehicles; (ii) the prevention of fire risks; and (iii) the prevention of other risks caused by fuels.

The Safety Committee of the European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway (AND) is assessing the need for additional provisions for the safe transport of dangerous goods with vessels using electric propulsion installations. The Recommended ADN Classification Societies have been invited to report back at the forthcoming session taking into account the ongoing work by the European Committee for the Development of Standards in the Field of Inland Navigation (CESNI) to avoid duplication. The discussion on the transport of hydrogen as a cargo will be addressed at a later stage, once requests for carriage of hydrogen are received. The informal working group on substances could start more detailed discussions on the transport conditions.

VII. Working Party on Intermodal Transport and Logistics (WP.24)

WP.24 promotes the shift to rail for freight transport. In this regard, WP.24 encourages implementation of the European Agreement on Important International Combined Transport Lines and Related Installations (AGTC) to create the network and related installations for enabling seamless intermodal transport – with long-distance freight carriage by rail and last mile carriage by road – across the ECE region. The Working Party also elaborated a book for national master plans for freight transport and logistics, whose aim is to assist national authorities in charge of freight transport and logistics with potential actions in accompanying the sector development to follow a sustainable and decarbonized path in support of national economic development.

VIII. World Forum for Harmonization of Vehicle Regulations (WP.29)

WP.29 and its subsidiary Working Parties, especially GRPE (Working Party on Pollution and Energy) and GRSG, heavily contribute to climate change mitigation measures by elaborating the automotive related regulatory framework on both reduction of energy consumption and GHG and pollutant emissions of road and off-road vehicles as well as on the safety of alternative propulsion systems such as electric / hybrid-electric and hydrogen.

WP.29 activities also cover elements on circularity by not only UN Regulation No. 133 on recyclability of motor vehicles but also by UN Regulations Nos.108 and 109 on re-treaded tyres for cars and commercial vehicles or UN Regulations Nos. 103, 114 or 132 and 143 on replacement pollution control devices, replacement air bag modules or retrofitting emission control devices for cars and heavy-duty vehicles. An important element is provided by UN Regulation No. 156 on software updates, which allows vehicle performance adjustments to latest developments without the need to change the physical vehicle.

GRPE has developed worldwide harmonized test cycle for most vehicle categories (motorcycles, cars, vans and engines from trucks and buses) to be able to measure tailpipe CO₂ emissions in the most representative and realistic way, allowing the implementation of robust fuel economy improvement regulations by contracting parties.

GRPE is also working on zero-tailpipe technologies coming to the markets, as, for example, it just endorsed a new UN GTR on in-vehicle battery durability. This new UN GTR will ensure minimum degradation from batteries in electric vehicles reducing waste and need for raw material extraction and associated carbon emissions. Such regulation is also expected to increase the trust in electric cars, further supporting a fast and successful adoption of such technology by car owners.

GRSP, the Working Party on Passive Safety, contributed to the development of the regulatory framework for the deployment of safe electric/hybrid-electric and hydrogen and fuel-cells vehicles (HFCV). Since, the main hurdle for the deployment of these kind of vehicles is safety, UN GTRs Nos. 13 (HFCV), 20 (EVS), UN Regulations Nos. 94 (Frontal collision), 95 (Lateral collision), 100 (Electric power trained vehicles), 134 (HFCV), 135 (Pole side

impact), 136 (Electric Vehicle, L category), 137 (Frontal impact with focus on restraint systems), 146 (HFCV of category L) and 153 (Fuel system integrity and electric power train safety at rear-end collision) pave the way to the de-carbonization of road traffic in all categories of vehicles ensuring the effectiveness of their roadworthiness systems.

IX. The Transport, Health and Environment Pan-European Programme (THE PEP)

THE PEP has at its core the goal of making transport more sustainable and, as such, reducing its environmental impact, mainly in cities but also in rural communities. In supporting THE PEP activities related to climate change the Sustainable Transport Division has led studies on the creation of Green and Healthy Jobs in Transport, Recommendations for Green and Health Sustainable Transport, the development of Managed Mobility Solutions, as well as a Handbook on Best Practices in Urban Transport and Spatial Planning and the development of a Pan-European Cycling Infrastructure Plan to supplement the Cycling Promotion Masterplan finalised in 2021. The Division continues to drive a number of the mandated initiatives and partnerships in THE PEP with the aim of implementing the goals of the Vienna Declaration and supporting green transport.

X. For Future Inland Transport Systems (ForFITS)

ForFITS modelling is used in ECE Environmental Performance Reviews (EPRS) to analyse and quantify the potential impacts of a set of policies on GHG emissions. Low carbon scenarios are developed to show quantitatively what is needed at the country level and to mitigate carbon emissions and climate impacts from the transport sector.

Following a workshop held together with the Sustainable Energy Division on real-time upstream emissions of electric vehicles during recharge⁶ held in May 2021, the secretariat is developing a ForFITS add-on module to look at the real-time emission of EV during recharge, together with a paper looking at the potential impacts of time resolution and user behaviour on CO₂ emissions during EV recharge. As part of the climate change related activities the Division also contributes to the development of the EPRs by preparing the transport chapter of the EPRs for each country.

XI. Other Activities of the Secretariat

The Division is also involved in the cross-Divisional nexus activities on “sustainable use of natural resources”, for which some activities are on-going in Ukraine from Regular Programme of Technical Cooperation (RPTC) funding to look at e-mobility, Mobility- as-a-Service and Resource-as-a-Service to lower the environmental and climate impacts from electric mobility over the whole supply chain.

⁶ <https://unece.org/sustainable-energy/events/online-workshop-real-time-upstream-emissions-electric-vehicles-during>

Annex II

Excerpts on Climate Change from the Recent ITC Declaration and Resolutions

I. ECE/TRANS/2020/2 – Ministerial Declaration on enhancing sustainable inland transport solutions to global climate and environmental challenges – a united call to action

Relevant excerpts:

“We, the ministers and other heads of delegation of contracting parties to United Nations conventions under the purview of the Inland Transport Committee, attending its eighty-second plenary session,

(...)

Declare:

(a) Our united stance on the need to leverage sustainable inland transport as an effective tool to respond to global climate and environmental challenges;

(b) Our commitment to implementing the relevant decisions articulated in the previous ministerial resolutions endorsed by the Committee, in particular in paragraph 4 of the ministerial resolution of 2017 on embracing the new era for sustainable inland transport and mobility, in which we decided to use the platform of the Committee to address the challenges faced as a consequence of climate change, and in paragraph 5 of the ministerial resolution of 2019, in which we pledged to support the harmonization of new technologies that would reduce pollution and greenhouse gases;

(c) Our readiness to promote the sustainability of inland transport systems through the development and dissemination of innovations in technology, especially in clean energy, sustainable mobility management or governance that may reduce the environmental impact of the sector and to encourage adaptations to current transport systems that ensure their continued viability through, inter alia, provisions of finance and capacity to developing Member States;

(d) Our resolve to strengthen the role of the Inland Transport Committee as the United Nations platform for inland transport and, through it, to foster an urgently needed, truly holistic and integrated approach to all inland transport modes;

(e) Our determination to continue using the Committee’s relevant regulatory functions to reduce harmful emissions and promote harmonized solutions to climate issues and environmental degradation, in accordance with the United Nations Framework Convention on Climate Change and its Paris Agreement, while adhering to the principles of openness, inclusivity, and respective capabilities with regard to the contributions of all States Members of the United Nations;”

II. ECE/TRANS/2019/2 – Ministerial Resolution on Enhancing cooperation, harmonization and integration in the era of transport digitalization and automation

Relevant excerpts:

“We, the Ministers and their representatives attending the eighty-first plenary session of the Inland Transport Committee,

(...)

[Decide to] 5. Express our conviction that harmonization, supported by common specifications and transparency of the criteria for decision-making on automated/autonomous and connected vehicles, is the cornerstone of trusted and interoperable transport systems, and

that the greater use of new technologies in inland transport has vast potential to provide solutions that improve efficiency, prevent road accidents, increase intermodality and reduce pollution and greenhouse gases.”

ECE/TRANS/2017/2 – Ministerial Resolution on Embracing the new era for sustainable inland transport and mobility

Relevant excerpts:

“We the Ministers, having come together to celebrate the seventieth anniversary of the UNECE Inland Transport Committee on 21 February 2017,

(...)

Committing to the advancement and fulfilment of the Sustainable Development Goals as these are inextricably linked to transport; also in relation to the challenges that we are facing as a consequence of climate change,

Acclaiming the critical role of the Committee and its relevant subsidiary bodies as platforms to which Governments will increasingly resort to develop and implement effective solutions to tackle climate change mitigation and adaptation, air pollution, and overall environmental performance of transport, including, but not limited to, the construction of vehicles and the transport of dangerous goods,

(...)

[Decide] 4. To address the challenges faced as a consequence of climate change, to pay special attention to the promotion of sustainable transport, and to ensure the safety and capacity of international transport corridors by supporting intergovernmental transport and transport related multi-disciplinary cooperation within the platform of the Inland Transport Committee”
