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Economic Commission for Europe

Inland Transport Committee

Working Party on Customs Questions affecting Transport

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Item 3 of the provisional agenda

Activities of United Nations Economic Commission for Europe bodies and other United Nations organizations of interest to the Working Party:

Alignment of the work of the Working Party with the Inland Transport Committee Strategy

Inland Transport and Climate Change: Activities of the Inland Transport Committee and its Subsidiary Bodies

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.

The Committee at its eighty-fifth session, expressed its concern for the worsening situation globally due to the increasing frequency and severity of impacts from climate change that creates increased demands and opportunities for inland transport, the main transport contributor to CO₂ emissions, to become part of the solutions' mix (ECE/TRANS/328, para. 58). The Committee requested the secretariat to report biennially through in-depth reports to the Committee on climate change and inland transport, starting at the Committee's eighty-sixth session in 2024 (ECE/TRANS/328, para. 60(g)). This document has been prepared in direct implementation of this mandate.

At its eighty-fifth session, the Committee further requested the secretariat, in close cooperation with the Committee's Bureau and relevant subsidiary bodies, to develop an ambitious strategy document based on international United Nations legal instruments under the Committee's purview with priority actions for the Inland Transport Committee (ITC) and all its relevant subsidiary bodies, supported by a strong action plan with milestones, for consideration and possible adoption by the Committee at its eighty-sixth plenary session (ECE/TRANS/328, para. 60(a)). The zero draft ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport has been submitted to the Committee in

ECE/TRANS/2024/3. The present document contains submissions from ITC's subsidiary bodies that were taken into account in the development of the strategy.

The Committee may wish to take note of this document and request its subsidiary bodies to further align their Programme of Work with the ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport (ECE/TRANS/2024/2).

I. Introduction

1. Inland transport, particularly road transport, is the largest contributor to greenhouse gas (GHG) emissions from the transport sector and is therefore the most important factor in the success of transport-related climate change mitigation efforts globally. ITC has a unique role to play in ensuring this success, as the United Nations centre providing a comprehensive platform for consideration of all aspects of inland transport development and cooperation, with special attention to interregional and intraregional regulatory governance through the United Nations transport conventions and other means.

2. Clearly, more ambitious decarbonisation policies and comprehensive measures are needed in the transport sector. The International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) have already set examples in terms of goals for the reduction of CO₂ emissions from civil aviation and maritime transport. Annex II offers an overview of those measures. It is time for the inland transport sector to follow suit.

3. At its eighty-fifth session, the Committee recognized the worsening situation globally due to the increasing frequency and severity of impacts from climate change that creates increased demands and opportunities for inland transport, the main transport contributor to CO₂ emissions, to become part of the solutions' mix (ECE/TRANS/328, para. 57). The Committee (ECE/TRANS/328, para. 60):

(a) **requested** the secretariat, in close cooperation with the Committee's Bureau and relevant subsidiary bodies, **to develop** a strategy document for reducing GHG emissions in inland transport based on international UN legal instruments under the Committee's purview with priority actions for ITC and all its relevant subsidiary bodies, for consideration and possible adoption by the Committee at its eighty-sixth plenary session (2024);

(b) **requested** its relevant subsidiary bodies and treaty bodies to accord priority to timely amendments to the United Nations inland transport legal instruments to support safe and efficient achievements of the targets, commitments and solutions on climate change;

(c) **requested** its relevant subsidiary bodies to continue efforts towards harmonization of performance requirements and intelligent transport systems related legal instruments directly contributing to reduction of GHG emissions through improvement of fuel/energy use efficiency, efficient use of transport networks, shift from private cars to public transport when available, flexible load and storage resources for the power grid (electric cars) and automation;

(d) **requested** its subsidiary bodies and treaty bodies to intensify efforts towards digitalization of main inland transport conventions;

(e) **invited** its relevant subsidiary bodies to reflect on environmental and energy efficiency considerations;

(f) **expressed** its strong and active support towards the task initiated by the Working Party on Pollution and Energy (WP.29/GRPE) to develop a globally harmonized methodology to determine the life-cycle carbon footprint of road vehicles;

(g) **requested** the secretariat to report biennially through in-depth reports to the Committee on climate change and inland transport, starting at the Committee's eighty-sixth session in 2024;

(h) **requested** the secretariat to align its work programme to the ministerial declaration¹ and accord priority to its implementation.

II. Biennial report on climate change and inland transport

4. At its eighty-fourth session, the Committee had invited its Working Parties to submit to the secretariat their ongoing contributions, future plans and suggestions in support of climate change mitigation and requested the secretariat, in consultation with the Bureau, to prepare a comprehensive paper with these activities and action-oriented options for the Committee and Working Parties for consideration at the Committee's eighty-fifth plenary session (ECE/TRANS/316, para 51(c) and (d)). Following this request, the secretariat prepared ECE/TRANS/2023/21, which was considered by the Committee at its eighty-fifth plenary session (ECE/TRANS/328, para. 57).

5. Following this, at its eighty-fifth session, the Committee **requested** the secretariat to report biennially through in-depth reports to the Committee on climate change and inland transport, starting at the Committee's eighty-sixth session in 2024. The present document includes the submissions made by ITC's subsidiary bodies, which are reflected in full in Annex I to this document.

III. Existing activities undertaken by the Inland Transport Committee, its subsidiary bodies and the secretariat

6. Climate change is considered a cross-cutting subject in the Inland Transport Committee Strategy until 2030² (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 to this document. 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) and its Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport (WP.5/GE.3);

(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/GRSP);

(d) Regulatory framework by WP.29/GRPE for:

- measuring CO₂ emissions from road vehicles;
- the use of new technology to ensure minimum degradation from batteries;
- improving engine efficiency and reducing emissions, by WP.29;
- Life-cycle Assessment (LCA) regulatory framework to measure the life-cycle emission of carbon of vehicles, including during manufacturing, use and end-of-life phases of the vehicle (under development).

(e) Regulatory framework for greening inland water transport fleet, infrastructure and operations by WP.3/SC.3 (see Annex IV to this document for more details);

¹ "Harnessing the full potential of inland transport solutions in the global flight against climate change" (ECE/TRANS/2023/2).

² Paragraph 12, Page 6, Inland Transport Committee Strategy until 2030, 2019.

- (f) 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) (See Annex V to this document for a more complete list);
- (g) Promotion and facilitation of green transport and mobility by WP.5 (see Annex II to this document for a full list) and the Transport, Health and Environment Pan-European Programme (THE PEP);
- (h) Studies and publications, by WP.5 and THE PEP;
- (i) Capacity building, by SC.3, WP.5 and WP.29;
- (j) Development of tools, such as the For Future Inland Transport Systems model (ForFITS), the Intelligent Transport System Road Map and THE PEP handbook;
- (k) Inter-Working Party cooperation and coordination, between SC.1, WP.5, WP.15 and WP.29; and
- (l) Project on new energy, the secretariat.

7. Annex I contains a more detailed overview of ongoing activities of individual subsidiary bodies of ITC.

IV. Submissions for the ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport

8. The ITC Strategy for Reducing Greenhouse Gas Emissions from Inland Transport (ECE/TRANS/2024/2) was developed by the secretariat in close cooperation with the ITC Bureau and ITC's subsidiary bodies following the Committee's request at its eighty-fifth session (ECE/TRANS/328, para. 60(a)). It takes into account input submitted by ITC's subsidiary bodies. These submissions are reflected in Annex III - VII to this document.

V. Conclusion

9. The Committee may wish to take note of this document and **request** its subsidiary bodies to further align their Programme of Work with the ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport (ECE/TRANS/2024/2).

Annex I

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

I. Inland Transport Committee

1. 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. 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.

2. At its eighty-fifth annual session in 2023, the Committee decided to strengthen the role and contribution on this critical matter that is addressed horizontally by several of the Committee's subsidiaries, as well as the Committee itself, and requested the secretariat, in close cooperation with the Committee's Bureau and relevant subsidiary bodies, to develop an ambitious strategy document for reducing greenhouse gas emissions in inland transport based on international United Nations legal instruments under the Committee's purview with priority actions for the Committee and all its relevant subsidiary bodies, supported by a strong action plan with milestones (ECE/TRANS/328, para. 60(a)). The ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport (ECE/TRANS/2024/3) will be considered and possibly adopted by the Committee at its eighty-sixth plenary session in 2024.

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

3. 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)

4. SC.2 works on promoting the shift to rail as a tool to increase efficiency and as such combat climate change. This is done through several areas. Firstly, through its main legal agreements:

- the European Agreement on Main International Railways Lines (AGC), providing for an international network of E-railways; and
- The Model Rules on the Permanent Identification of Railway Rolling Stock, to make investment in railway equipment more secure and therefore cheaper, increasing the competitive position of operators and assisting in the financing of railway rolling stock.

5. 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. On the passenger front, the Group of Experts on International Railway Passenger Hubs has developed proposals to update the AGC 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 with special attention to energy consumption in the railways.

IV. Working Party on Inland Water Transport (SC.3)

6. Climate change mitigation is of particular importance for inland water transport, as it is more vulnerable to the impact of climate change and associated events, in particular, low water situation on the major European rivers in recent years. SC.3 and its subsidiary body, the Working Party on the Standardization of Technical and Safety Requirements in Inland Navigation (SC.3/WP.3) contribute to climate change mitigation by promoting the modal shift from road to inland waterways to reduce harmful emissions from inland transport and working on measures for decarbonization and greening of the inland fleet. SC.3 promotes the development of the E waterway network according to the European Agreement on Main Inland Waterways of International Importance and monitors progress through the Inventory of Main Standards and Parameters of the E Waterway Network (“Blue Book”).

7. The activities of both Working Parties, in accordance with the *White Paper on the Progress, Accomplishments and Future of Sustainable Inland Water Transport*, include (a) exchanging best practices, supporting programmes and pilot projects aimed at modernization and greening of the fleet, (b) supporting the initiative to reduce greenhouse gas emissions by 35 per cent compared with 2015 by 2035, reduce pollutant emissions by at least 35 per cent compared with 2015 by 2035, and largely eliminate greenhouse gases and other pollutants by 2050, (c) promoting the role of water transport using alternative fuels, low and zero emission propulsion systems and electromotion. This is being realized through the updates to the European Code for Inland Waterways, the Recommendations on Harmonized Europe-Wide Technical Requirements for Inland Navigation Vessels (annex to resolution No. 61) and other relevant resolutions. The impact of climate change on inland water transport and mitigation activities were addressed at the workshops of SC.3 and SC.3/WP.3:

- Climate change and the extreme water situation on European waterways and its impact on inland water transport (17 February 2021)
- Prevention of Pollution from Inland Waterway Vessels and Greening of the Inland Water Transport Sector (16 February 2022)
- Climate Change Mitigation Activities in Inland Water Transport (11 October 2023). The workshop focused on the international and national programmes, progress and lessons learned and priorities for future activities. The participants discussed proposals for the draft ITC strategy on reducing greenhouse gas emissions in inland transport until 2050 in the field of inland water transport and monitoring the implementation of the future strategy by member States.

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

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

- Expert round table on economic analysis of the transformation of urban transport systems in September 2020;
- Workshop on green urban transport in September 2021 co-organized by the Sustainable Transport Division and the Forests, Land and Housing Division;
- Inter-regional workshop on electrification of mobility – challenges and opportunities for transport, energy, and spatial planning in September 2022.

9. In 2020, WP.5 established a Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport (WP.5/GE.3) 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.

10. By Oct 2023, WP.5/GE.3 developed important knowledge material such as: (i) Stress test framework for evaluating the resilience of transport assets to climate change hazard, and (ii) Guide for adaptation pathways in transport.

11. WP.5/GE.3 continued then its work on (i) climate projections analysis based on selected weather phenomena thresholds, (ii) guide for networks criticality assessment, and (iii) costs and losses of rail and road infrastructure and operations due to climate change and extreme weather conditions.

12. WP.5 established a group of experts on cycling infrastructure module (WP.5/GE.3) in September 2021. 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 focuses 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.
- By Oct 2023, WP.5/GE.3 elaborated a draft guide for designation of cycling network, elaborated common definitions for various types of cycling infrastructure and developed proposals for modifications to 1968 Conventions on Road Traffic and Road Signs and Signals arising from these definitions.

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

- In October 2022, the secretariat issued a publication on Sustainable Inland Transport Connectivity Indicators (SITCIN) proposing a transport system assessment methodology which among its three assessment dimensions also offers a pillar on Environmental Sustainability containing a set of indicators designed to help governments to understand and evaluate measures aimed at reduction of greenhouse gas emissions, air pollutants and noise emissions, in doing so they consider modal split, alternative fuel share, average age of fleet, etc.
- 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.

14. At its annual session in September 2023, WP.5 held:
- A thematic discussion on general trends and developments surrounding electric vehicles and their charging infrastructure which will feed into the preparations of a designated Transport Trends and Economics publication to be issued in 2024
 - A thematic discussion with the involvement of both non-governmental bodies and representatives of member States on the critical role of inland transport in accelerating climate change mitigation which will feed into the preparations of the ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport.
15. WP.5 recognized that to facilitate progress in electric mobility, a dedicated informal task force focused on driving and coordinating efforts related to electric vehicle developments and their charging infrastructure both within ECE (and across its different sub-programmes) and in collaboration with other institutions should be established. In this regard it requested the WP.5 secretariat together with the Chair to develop draft terms of reference for such a task force in close consultation with other relevant Working Parties and relevant intergovernmental groups in the ECE Sustainable Energy Division and submit this to ITC for discussion and possible adoption at its next annual session.

VI. Working Party on the Transport of Perishable Foodstuffs (WP.11)

16. During its seventy-sixth session, WP.11 confirmed that its work and the ATP Agreement were fully in line with the ITC strategy, and that it would remain aligned as long as the ATP Agreement was kept relevant and up to date with technological progress. Also, ways to reduce global warming and climate change impact, particularly reduction of greenhouse gas emissions, and in general the 2023 agenda objectives were constantly considered as part of its work.

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

17. 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 would 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.

18. The Safety Committee of the European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterway (ADN) 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.

19. On 10 November 2022, the Working Party WP.15 held a round table discussion on the circular economy from the perspective of multimodal transport of dangerous goods¹, and

¹ See report ECE/TRANS/WP.15/260, paras. 45-51.

followed multiple presentations available at the website: <https://unece.org/info/Transport/Dangerous-Goods/events/364687>. As an outcome of the discussions it noted that further work was needed on provisions related to the circular economy, the sustainable use of natural resources and waste production reduction. These include the reduction of transport related emissions of greenhouse gases (e.g. use of electric vehicles) and the adoption of provisions for the safe transport of used cells and batteries for their recycling/repurpose.

20. The ADN Safety Committee organized during its January 2023 session a workshop on sustainable development and climate change from the perspective of the transport of dangerous goods by inland waterways². It expressed its appreciation of the discussions towards greening the inland navigation (presentations are available at: <https://unece.org/info/Transport/Dangerous-Goods/events/370093>). It noted a need for policies and clear guidance (e.g. regulations) to foster sound investments by vessel owners and industry in their inland water transport fleet greening efforts, and to so avoid the uncertainty of regrettable investments. It also noted that a call for flexibility is needed when referring to sustainable inland waterway transport and that vessels should have long lifetime while their propulsion systems should allow for an easy refitting, if necessary. At its August 2023 session, the ADN Safety Committee considered already several official requests for recommendation on the use of hydrogen fuel cells or methanol as fuel for the propulsion of vessels.

21. The RID/ADR/ADN Joint Meeting welcomed at its spring 2023 session the outcome of the discussions at WP.15 and the ADN Safety Committee. The Joint Meeting agreed to coordinate the activities on the safe and environmentally friendly carriage of dangerous goods by inland transport modes in close cooperation with OTIF and CCNR, in particular with respect to the work done on the Convention concerning International Carriage by Rail (COTIF) and on the European Committee for drawing up Standards in the field of Inland Navigation (CESNI).

22. During the session, the Joint Meeting requested the secretariat to publish on the ECE website a contribution to the United Nations 2030 agenda on sustainable development in particular through effective impacts of new requirements and technical innovations in the regulations on the transport of dangerous goods. This information [can be used by delegates as a basis to identify related impacts in their proposals](https://unece.org/transport/dangerous-goods/unece-bodies-dealing-transport-dangerous-goods) and is available at: <https://unece.org/transport/dangerous-goods/unece-bodies-dealing-transport-dangerous-goods>.

23. At the Autumn 2023 session, the Joint Meeting recalled that the priority of WP.15, the ADN Safety Committee and the RID/ADR/ADN Joint Meeting was to achieve regulations that warrant the safe transport of dangerous goods and facilitate an easy multimodal multinational carriage of these goods. Nevertheless, the reduction of greenhouse gas emission, the climate change and in general the 2023 Agenda objectives are constantly considered as part of this work.

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

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 handbook 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. WP.24 has been also working on digitalization and automation of intermodal transport. It has been preparing a framework for digitalization

² See report ECE/TRANS/WP.15/AC.2/84, paras. 56–67.

of freight intermodal transport. It has been developing a handbook for automation in intermodal transport. WP.24 has been also looking for solutions to electrification of road transport involved in intermodal transport.

Additionally, the Working Party on Transport Statistics (WP.6) is instrumental in identifying corridors where a modal shift away from road would be most advantageous.

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

25. 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 powertrains.

26. WP.29 activities also cover elements on circularity (detailed in ECE/TRANS/2023/5) 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.

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

28. GRPE is also working on zero-tailpipe technologies coming to the markets, as, for example, UN GTR No. 22 on in-vehicle battery durability. This UN GTR ensures 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.

29. 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.

30. In 2023, GRPE has continued its efforts on vehicle pollutant and GHG emissions, GRSP continued its work regarding safety and crashworthiness of zero polluting vehicles (battery electric vehicles and hydrogen fuel-cell vehicles) supporting shift to carbon emission free road transport with amendments to:

- (a) UN Regulation No. 100 on electric vehicle safety;
- (b) UN Regulation No. 134 and UN GTR No.13 on hydrogen fuel-cell vehicles;
- (c) Amendments to crashworthiness related UN Regulations Nos. 94 (Frontal impact), 95 (Lateral impact), 135 (Pole side impact), 137 (Frontal impact with focus on restraint systems) and 153 (Fuel system integrity and electric power train safety at rear-end collision) introduced specific requirements related to batteries and their post-crash behaviours (e.g. thermal runaway and self-ignition).

31. GRBP further contributed to climate change mitigation in 2023 by updating UN Regulation No. 117 related to rolling resistance, wet-grip and rolling noise requirements for tyres of passenger cars.

32. GRVA, the Working Party on Automated/Autonomous and Connected Vehicles, is working on innovations that will support new forms of mobilities and their use. GRVA also maintains existing active safety regulations to update the regulatory framework according to technical progress. GRVA is therefore reviewing the braking regulations as energy saving new braking technologies called Electromechanical Braking and Braking by Wire are under development. Such innovations are seen as an important element in the transition from vehicles employing internal combustion engines to alternatives powered by electrical energy. GRVA, similarly, is exploring the regulatory adaptation needed to allow electric regenerative braking system and/or a propulsion system mounted in trailers' axles, aimed to convert the kinetic energy of an axle to supply electric systems (e.g. cooling units for reefer) as well as to support the motor vehicle (e.g. the tractor) during start-stop manoeuvres or during accelerating/braking.

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

33. 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.

XI. For Future Inland Transport Systems (ForFITS)

34. 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.

35. Following a workshop held together with the Sustainable Energy Division on real-time upstream emissions of electric vehicles during recharge³ 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.

XII. Other Activities of the secretariat

36. 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. The Division is set to host the “Transport Data Commons”, a global open database on the transport sector’s CO₂ emissions. The initial

³ <https://unece.org/sustainable-energy/events/online-workshop-real-time-upstream-emissions-electric-vehicles-during>

emphasis is on gathering and reporting essential data from the transport sector needed to derive greenhouse-gas emissions estimates.

Annex II

Overview of Climate Change Mitigation Strategies of the International Civil Aviation Organization and the International Maritime Organization

I. International Civil Aviation Organization

1. The International Civil Aviation Organization (ICAO) Assembly at its fortieth session in 2019 reiterated the two global aspirational goals for the international aviation sector of two per cent annual fuel efficiency improvement through 2050 and carbon neutral growth from 2020 onwards. To achieve these goals and to promote sustainable growth of international aviation, ICAO is pursuing a basket of measures including aircraft technology improvements, operational improvements, sustainable aviation fuels (SAF), and market-based measures (CORSIA), a carbon offset and carbon reduction programme to lower CO₂ emissions for international flights. Furthermore, ICAO has established a global framework to facilitate the reduction in carbon footprint and explore the usefulness of targeting long-term CO₂ reduction.

2. At its forty-first session in 2022, ICAO also adopted a long-term global aspirational goal (LTAG) for international aviation of net-zero carbon emissions by 2050 in support of the UNFCCC Paris Agreement's temperature goal.¹ The LTAG does not attribute specific obligations or commitments in the form of emissions reduction goals to individual States. Instead, it recognizes that each State's special circumstances and respective capabilities (e.g., the level of development, maturity of aviation markets, sustainable growth of its international aviation, just transition, and national priorities of air transport development) will inform the ability of each State to contribute to the LTAG within its own national timeframe.

3. Other ICAO initiatives include:

(a) A CO₂ emissions reduction initiatives tracker tool that offers information relevant to initiatives for reducing the environmental footprint of aviation. This tool is developed as part of the International Coalition for Sustainable Aviation, consisting of several non-profit organisations is working on reducing air travel pollution. This is the only environmental civil society group recognised as an observer by the ICAO;

(b) The State Action Plan initiative launched in 2010 with the aim to provide States with the capacity and tools to take action;

(c) The development of State Action Plans and the implementation of CORSIA are supported through the development and maintenance of several tools that are made available to States and the general public. They include the Carbon Emissions Calculator, the Green Meetings Calculator, and the Fuel Savings Estimation Tool.

II. International Maritime Organization

4. The International Maritime Organization (IMO) has adopted mandatory measures to reduce emissions of greenhouse gases from international shipping, under the IMO pollution prevention treaty (MARPOL). In 2018, IMO adopted an initial strategy on the reduction of GHG emissions from ships that envisages, in particular, a reduction in carbon intensity of international shipping to reduce CO₂ emissions per transport work, as an average across international shipping, by at least 40 per cent by 2030, pursuing efforts towards 70 per cent

¹ 2022 ICAO 41st Assembly Resolution A41-21: Consolidated statement of continuing ICAO policies and practices related to environmental protection — Climate change. Available from: https://www.icao.int/environmental-protection/Documents/Assembly/Resolution_A41-21_Climate_change.pdf

by 2050, compared to 2008. Furthermore, total annual GHG emissions from international shipping should be reduced by at least 50 per cent by 2050 compared to 2008.

5. In July 2023, the Member States of the IMO adopted the 2023 IMO Strategy on Reduction of GHG Emissions from Ships² at the Marine Environment Protection Committee (MEPC 80). The revised IMO GHG Strategy includes an enhanced common ambition to reach net-zero GHG emissions from international shipping close to 2050, a commitment to ensure an uptake of alternative zero and near-zero GHG fuels by 2030, as well as indicative checkpoints for 2030 and 2040.

6. To support a strategy on reducing emissions across the maritime sector, IMO also developed a Ship Emissions Toolkit, which offers a well-defined framework along with decision support tools. The first practical guide of the Ship Emissions Toolkit is based on the “Rapid assessment of ship emissions in the national context”. The second practical guide of the Ship Emissions Toolkit is based on the incorporation of MARPOL Annex VI into national law³. The third guide of Ship Emissions Toolkit discusses the crucial planning, development and implementation phases that are involved in the creation of a national ship emissions reduction strategy.

7. The IMO Energy Efficiency Design Index (EEDI) further requires a minimum energy efficiency level per capacity mile for different vessels and has been made obligatory for all new ships.

² 2023 IMO strategy on reduction of GHG emissions from ships, Resolution MEPC.377(80), adopted on 7 July 2023. Available from: [REDUCTION OF GHG EMISSIONS FROM SHIPS \(imo.org\)](https://www.imo.org/en/ourwork/energy-efficiency/energy-efficiency-design-index/2023-imo-strategy-on-reduction-of-ghg-emissions-from-ships)

³ The 1997 Protocol to the International Convention for the Prevention of Pollution from Ships, known as MARPOL Annex VI. This protocol controls air emissions from more than 95 per cent of the world’s shipping tonnage and sets limits on Nitrogen Oxide emissions while imposing strict measures that require ships to make use of fuel with low sulphur content.

Annex III

Submissions by the Inland Transport Committee's Subsidiary Bodies to the Inland Transport Committee Strategy on Reducing Greenhouse Gas Emissions from Inland Transport

I. Global Forum for Road Traffic Safety (WP.1)

1. Following the 2023 ITC request to the secretariat to develop an ambitious strategy document for reducing greenhouse gas emissions in inland transport based on United Nations legal instruments, WP.1 recommended the strategy document to include road safety efforts as a contribution for reducing greenhouse gas emissions in inland transport. Personal mobility devices and technological advances in urban mobility should also be considered.

II. Working Party on Transport Trends and Economic (WP.5)

2. The Working Party welcomed the thematic discussions on the role of inland transport in climate change mitigation. It noted the request of the Inland Transport Committee at its eighty-fifth annual session (Geneva, February 2023) inviting the secretariat to develop an ambitious "Strategy for reducing Green House Gas (GHG) emissions from inland transport" (hereinafter referred to as "Strategy"), supported by a strong action plan with milestones, for consideration and possible adoption at its eighty-sixth plenary session (in 2024).

3. The purpose of the thematic discussion was to enable representatives of member States as well international organizations, non-governmental bodies, private sector associations and academia working on decarbonization of the inland transport sector, to learn more about the ongoing development of the strategy and to share their insights, proposals, and feedback on possible future actions for climate change mitigation in inland transport.

4. An introductory presentation was provided jointly by the Secretary of the Inland Transport Committee and the Secretary of the Working Party on Pollution and Energy (under WP.29/GRPE) proposing the Avoid-Shift-Improve approach as a potentially useful framework to structure the strategy document as it allows to address the broad range of climate change mitigation measures being undertaken under purview of the ITC Working Parties.

5. Participants exchanged views on a broad variety of issues of which a non-exhaustive overview is provided below.

6. Inter alia, participants, representing member States as well as non-governmental bodies and private sector associations:

- Stressed the need for the various Working Parties under ITC purview to join efforts and take a coordinated approach in their climate change mitigation efforts. The importance of cooperation between the ECE sustainable transport and energy sub-programmes as well as with specialized organizations such as the International Energy Agency (IEA), ITF and SLOCAT was highlighted.
- Noted the difference between GHG emissions reduction commitments under the United Nations Framework Convention on Climate Change (UNFCCC), where inland transport is included, and those made by the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) as part of their decarbonization strategies.
- Recognized limitations for the forthcoming Strategy in terms of setting binding targets but expressed support for setting targets in the Strategy that are aligned with Nationally Determined Contributions (NDCs) to ensure global consistency. In this

regard referred to a potential role for ITC in helping countries to develop inland transport national decarbonization strategies in line with the UNFCCC framework.

- Advocated for cost efficient mitigation measures and stressed the importance for the Strategy to address access to finance and technology.
- Discussed the need for harmonized CO₂ measurement methodologies and highlighted the potential for addressing other environmental impacts such as air pollution in the future.
- Emphasized the potential of emissions reduction through modal shift and considered how to address the historic imbalance in investment favouring road infrastructure over railways and inland waterways. Realizing that a successful modal shift will require significant investments in infrastructure.
- Supported using the Avoid-Shift-Improve framework to categorize efforts and measures to reduce GHG emissions from inland transport, expecting all pillars to contribute to the decarbonization of the inland transport sector by 2050.
- Emphasized the importance of a data driven Strategy with specific targets and key performance indicators combined with the regular conduct of a solid review mechanism.
- Stressed the need for a Strategy that extensively covers the freight sector recognizing the need for more ambitious regulations in heavy-duty and medium duty freight vehicle sectors.
- Dwelled extensively on issues related to electrification of mobility and the need to expand EV charging infrastructure prioritizing seamless inter-operability of different charging systems through the development of global and open standards.
- Emphasized the essential role of batteries to lower the carbon footprint of electric vehicles, acknowledging that battery production can be emission intensive and make up a significant portion of the lifecycle emissions of vehicles.
- Discussed the potential for reducing emissions in multimodal transport corridors *inter alia* through electrification and the use of renewable energy in the railway sector and low carbon energy and fuels in the road freight sector.
- Recommended coordinating the Strategy development with existing initiatives such as the “Breakthrough Agenda”, “Accelerating to Net Zero” and “Race to Zero for Freight” thereby ensuring synergies.

7. WP.5 appreciated the opportunity to discuss and contribute to the draft strategy at this early stage of preparations and appreciated the fact that for this discussion and in accordance with its role and mandate as a think tank on latest trends and developments in the field of transport it had been joint by a broad range of additional stakeholders including non-governmental bodies, international partner organizations and the private sector.

8. In terms of its own role, the Working Party noted the significant efforts it is already making through several of its thematic clusters and in support of the “avoid-shift-improve” and “adapt” approaches to climate change, including through:

(a) Its cluster 1 on “Development of transport networks and links” by promoting multimodal transport corridor management;

(b) Its cluster 2 on “Transport and climate change” (amongst others the ongoing work of the Group of Experts on Assessment of Climate Change Impacts and Adaptation for Inland Transport (GE.4) which *inter alia* is generating GIS maps illustrating forecasts for impact of climate change on transport assets as part of the International Transport Infrastructure Observatory (ITIO) platform;

(c) Its cluster 3 on “Sustainable urban mobility, cycling and public transport” (amongst others the ongoing work of the Group of Experts on cycling infrastructure module (GE.5); and

(d) The stock taking efforts as part of its cluster 5 on review and monitoring of emerging issues” regarding electric vehicles and their charging infrastructure.

9. The Working Party also noted that tools developed under its realm such as the Sustainable Inland Transport Connectivity Indicators (SITCIN) platform which among its three assessment dimensions also offers a pillar on Environmental Sustainability which contains a set of indicators designed to help governments to understand and evaluate measures aimed at reduction of greenhouse gas emissions, air pollutants and noise emissions, in doing so they consider modal split, alternative fuel share, average age of fleet etc.

10. The Working Party further recommended that the aspect of adaptation and so its work on adaptation of transport to climate change is reflected in the strategy. It considered that this is important since inappropriate adaptation measures may negatively affect mitigation efforts. Mitigation objectives are on the other hand important to consider in adaptation work.

11. The Working Party recommended that in the list of priorities of the strategy its actions aimed at mitigation of climate change from transport are included and requested its chair together with the secretariat to communicate them to the ITC Chair and secretariat.

12. The secretariat informed that WP.5 representatives interested in submitting any further written feedback and comments for possible inclusion in the forthcoming ITC Strategy could do so by 30 September 2023.

III. Working Party on Transport Statistics (WP.6)

A. Introduction

13. In May 2023, the Chair of the Inland Transport Committee (ITC) and the Director of Sustainable Transport Division jointly issued a letter to all Working Party Chairs. The correspondence extended an invitation to all relevant Working Parties to contribute to the development of the ITC’s new Climate Change Mitigation Strategy (hereafter referred to as the “Strategy”). Specifically, input and feedback were requested on the following sections of the Strategy:

- I. Inland transport and climate
- II. ITC vision and mission for climate action
- III. Strategic objectives
- IV. ITC-administered instruments to assist in mitigating climate change
- V. ITC Climate Action Plan with milestones – ITC to help deliver on climate goals
- VI. List of priorities
- VII. Resource requirements for the delivery of this Strategy
- VIII. Strategic Partnerships for the delivery of this Strategy

14. It is crucial to highlight that the Working Party on Transport Statistics (WP.6) primarily serves a supportive role through its data collection and analysis activities. WP.6 has been gathering various types of data pertinent to climate change mitigation, such as modal shifts from road to rail and inland waterways. This data includes:

- International and national goods transport by road, rail, and inland waterways;
- National passenger transport by road and rail; and
- Vehicle statistics by fuel type.

15. Since 2020, WP.6 has also been gathering data on metro and tram passenger numbers to monitor the development of urban public transport as sustainable modes of transport.

16. In its most recent session, under the agenda item “Transport indicators and monitoring the Sustainable Development Goals”, the Working Party decided to add new indicators for

monitoring the transport-related Sustainable Development Goals in the ECE Region. These additional indicators include the *percentage of new passenger cars that are zero emission* and *trends in new passenger car vehicle weight*. It also decided to start collecting data on electric vehicle recharging infrastructure to monitor the development of the infrastructure that support the market adoption of electric vehicles.

17. This document aims to informally consult WP.6 members on potential contributions of WP.6 to the Strategy, given the ITC's plan to adopt it in February 2024, while the next session of WP.6 is scheduled for May 2024. The following section outlines potential inputs from WP.6.

B. Main strategy headings

1. Inland transport and climate

18. WP.6 suggests that this section should provide both historical data and future projections concerning inland transport and climate in the ECE region. To establish a robust baseline for measuring progress, it is crucial to include reliable data from a base year. This will enable more accurate tracking of changes over time and support the formulation of evidence-based policies and strategies. Most of the data have already been collated by various reputable institutions, which contributes to the credibility and reliability of the information used for analysis.

2. ITC vision and mission for climate action

19. WP.6 recommends that the vision and mission of the Strategy should be inherently data-driven. This means formulating a vision and mission that are not only ambitious but also anchored in reliable data, ensuring that the Strategy's implementation and monitoring are evidence-based.

3. Strategic objectives

20. WP.6 advises encouraging the use of data to develop an understanding of the shift to greener transport options. This is an area where ECE already maintains extensive data. This might include examining the use of public transport, non-motorised transport, and shared mobility for passengers, and any shift from road to rail and inland water transport for goods.

4. ITC-administered instruments to assist in mitigating climate change

21. Although there are no legal instruments under the purview of WP.6, the Working Party suggests continuing the development and maintenance of existing conventions and agreements that have been indirectly or directly contributing to climate mitigation efforts, such as the AGR.

5. ITC Climate Action Plan with milestones – ITC to help deliver on climate goals

22. Milestones should be set for 2030, 2040, and 2050, aligning with the 2030 Agenda and Net-zero GHG Emissions by 2050 goals. In developing these milestones, consultations with WP.6 experts and secretariat should be undertaken to ensure the availability of the required data and to incorporate their insights and expertise. A mid-term review every five years is also advisable, allowing for adjustments based on progress, evolving circumstances and any newly available data or insights.

6. List of priorities

23. Given WP.6's supportive role, its primary focus is on strengthening data collection and analysis capacities. WP.6 stands ready to assist with this as needed and proposes the following specific actions to be included in the Strategy:

- **Capacity building:** Intensify efforts to enhance the data collection capabilities of ECE member States, particularly those non-Eurostat countries that currently face challenges in providing comprehensive transport data. This remains a critical area for

improvement in measuring the efficiency and environmental impact of transport systems.

- **Open Data Initiatives:** Advocate for open access to transport-related data sets, which would allow for broader scrutiny and more extensive analysis by stakeholders beyond governmental bodies.
- **Data Harmonization:** Promote the standardization of data collection methods and metrics across ECE member States to ensure comparability and to improve the accuracy of cross-border analysis, particularly if new indicators pertinent to climate change are to be introduced.

7. Resource requirements for the delivery of this Strategy

24. The Working Party reiterates that its core activities revolve around collecting and analysing data essential for measuring the progress and effectiveness of the Strategy. Recognizing the pivotal role of reliable data in tracking progress toward strategic milestones, the Working Party strongly advocates for the allocation of additional human and financial resources to support its work. Specifically, these resources should encompass:

- **Additional Staff:** More human resources should be designated to the WP.6 secretariat to manage the expanded scope of data collection and analysis.
- **Financial support:** Provide funding to enhance the data collection capabilities of ECE member States, especially for monitoring transport related GHG emissions.

25. By securing these resources, WP.6 aims to better support the Strategy in achieving its objectives at each planned milestone, reinforcing the importance of a data-driven approach in combating climate change.

8. Strategic Partnerships for the delivery of this Strategy

26. WP.6 has ongoing collaborations with esteemed institutions like Eurostat and ITF. For the successful implementation of the Strategy, fostering closer relationship with other organizations, such as UNFCCC, is essential.

IV. Working Party on Transport of Perishable Foodstuffs (WP.11)

A. Ideas for contributing to the ITC strategy on climate change mitigation

27. To provide inputs and feedback to the ITC secretariat, WP.11 may wish to identify which of their current and future activities could be listed in the ITC Climate Action Plan and propose milestones.

28. Examples of activities that can be undertaken by WP.11 where a positive effect in climate change mitigation is achieved are listed below:

(a) For greening the vehicles transporting perishable foodstuffs efforts are currently done to define the scope of the ATP agreement with the view of including provisions to enable the use of alternative energy sources for propulsion and refrigeration as well as the use of electrified vehicles;

(b) Adoption of provisions to streamline the replacement of refrigerants for those with lower Global Warming Potential (GWP), using as reference Chapter 6 of the 2022 Assessment Report from the Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee (see <https://ozone.unep.org/system/files/documents/RTOC-assessment%20-report-2022.pdf>);

(c) Promoting the correct use of temperature-controlled equipment for the transport of perishable foodstuffs to reduce food waste;

(d) Following closely the work done in standardization organizations related to refrigerated or insulated container used for last mile deliveries;

(e) Following the work of ISO related to maritime containers;

(f) Working to allow electronic versions of documents;

(g) Drafting guidance material for the transport of other perishable goods not included in the ATP agreement and sharing best practices for the transport of all perishable goods. This is especially important to prevent food waste and related CO₂ emissions;

(h) Future work might include considering alternative transport modes for perishable foodstuffs. So far, the ATP Agreement only includes road and rail;

(i) From an organisational point of view, the ITC strategy could be an opportunity for ITC to develop a framework for all its subsidiary bodies to become more climate neutral, by encouraging hybrid meetings.

29. Future work might include considering alternative transport modes for perishable foodstuffs. So far, the ATP Agreement only includes road and rail.

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

A. Introduction

30. In 2020 and 2021, the Inland Transport Committee (ITC) reiterated its wish to strengthen its contribution to the monitoring and implementation of the transport-related targets of the 2030 Agenda and requested its subsidiary bodies to align their work accordingly. In 2022 and 2023, discussions took place during the sessions of the Working Party on the Transport of Dangerous Goods (WP.15), the ADN Safety Committee (WP.15/AC.2) and the RID/ADR/ADN Joint Meeting (WP.15/AC.1) on possible follow-up actions and contributions to United Nations 2030 Agenda for sustainable development in relation to their work on the carriage of dangerous goods by inland transport modes.

31. At its February 2023 session and on the basis of document ECE/TRANS/2023/21, the Committee decided to strengthen its role and contribution on climate change, which is addressed horizontally by several of the Committee's subsidiary bodies as well as the Committee itself. It therefore requested the secretariat, in close cooperation with the ITC Bureau and relevant subsidiary bodies, to develop an ambitious strategy document for reducing greenhouse gas emissions in inland transport. The strategy document was based on international United Nations legal instruments under the purview of the Committee, with priority actions for the ITC and its relevant subsidiary bodies and supported by a strong action plan with milestones (ECE/TRANS/328, para. 60).

B. Contribution to the Strategy Document for Reducing Greenhouse Gas Emissions

32. To provide inputs and feedback to the ITC secretariat, WP.15, the Joint Meeting and the ADN Safety Committee agreed to insert on their agendas an item related to the United Nations 2030 agenda to ensure regular exchange of views on important subjects such as circular economy, the sustainable use of natural resources and climate change mitigation. On the reduction of transport related emissions of greenhouse, they discussed which of their current and future activities could be listed in the ITC Climate Action Plan and proposed milestones, and identified the following milestones:

- short-term actions are current activities depending on the progress in the discussions in the three bodies themselves and which could be expected to be finalized in the next two biennia (i.e. 4 years);

- long-term actions are future activities or already initiated ones, but still depending on the progress of work and decision by other committees and organizations and therefore their conclusions were difficult to predict; and
- permanent actions are ongoing activities discussed on a regular basis by the three bodies.

33. In this respect, some of examples of actions where a positive effect on climate change mitigation might be achieved are listed below:

(a) Short-term actions:

(i) First steps of work to allow a wider use of recycled plastics material in packagings for the transport of dangerous goods;

(ii) Adoption of provisions to accompany the development of greener vehicles (provisions for transport, packagings of lithium batteries and sodium ion batteries, complete vehicles, damaged batteries or vehicles, biofuels etc);

(iii) Ongoing efforts to allow in future e-learning for ADR drivers and ADN experts.

(b) Long-term actions

(i) Further steps to allow a much wider use of recycled plastics material in packagings for the transport of dangerous goods;

(ii) Adoption of provisions to accompany the development of larger energy storage systems (provisions for classification);

(iii) Consideration of options to enable the safe use of greener vehicles for the carriage of dangerous goods;

(iv) Work to allow electronic versions of transport documents and other documents.

(c) Permanent actions

(i) Adoption and implementation of a rationalized classification system for batteries (lithium or sodium ion and other chemistries as battery technology develops);

(ii) Harmonization of the regulations for land transport of dangerous goods to foster the use of intermodal transport by road, rail and inland waterways aiming at diminishing the gas emissions and simplifying the intermodal transport;

(iii) Future work includes sustainable solutions to move safely hydrogen from its point of renewable production to its end users and also safe shipping of captured carbon dioxide.

34. From an organisational point of view, the ITC strategy could be an opportunity for ITC to develop a framework for all its subsidiary bodies to become more climate neutral, by encouraging hybrid meetings. WP.15, the Joint Meeting and the ADN Safety Committee may wish to request ITC to study how to secure a standing mandate and resources to allow its subsidiary bodies to organize hybrid meetings. This would imply considering adapting current rules of procedures to a new format and providing guidelines. It would also help to facilitate and encourage broader participation.

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

A. Background

35. The Chair of the Inland Transport Committee (ITC) has written to all Working Party Chairs to obtain input into the new ITC Climate Change Mitigation Strategy. In particular,

the Chair provides an outline of what the strategy should look like and encourages input into these chapters. The outline is set out below:

- I. Inland transport and climate
- II. ITC vision and mission for climate action
- III. Strategic objectives
- IV. ITC-administered instruments to assist in mitigating climate change
- V. ITC Climate Action Plan with milestones – ITC to help deliver on climate goals
- VI. List of priorities
- VII. Resource requirements for the delivery of this Strategy
- VIII. Strategic Partnerships for the delivery of this Strategy

36. This document is prepared to assist the discussion of the Working Party on Intermodal Transport and Logistics (WP.24) at its sixty-sixth session on the ITC climate change mitigation strategy's outline and to agree on the input that WP.24 Chair would provide to this strategy of behalf of WP.24.

B. Possible inputs in the field of intermodal transport and logistics

37. WP.24 may wish to underline in its input that intermodal freight transport plays an important role in mitigating climate change from transport. This is because intermodal freight transport offers the possibility for moving freight in an effective and efficient way by modes of transport whose use generates lower external costs for human health and the environment and thus also lowest greenhouse gas emissions (GHG). In this context, WP.24 focus is on improving efficiency in freight transport or with other words avoiding inefficiencies, promoting shift to more efficient modes of transport (rail and inland waterways) but also working on improving transport infrastructure and operations, in particular through the legal agreements under its purview, namely the AGTC and the Protocol to AGTC. The legal instruments but also various guidance and handbooks are key in delivering on the WP.24 objectives.

38. In view of the above, WP.24 may wish to highlight the following two high-level comments in support of the development of the strategy:

(1) ITC is advised to focus its climate change mitigation strategy on three pillars for decreasing the transport footprint in climate change:

- (i) pillar 1: Avoid inefficient inland transport;
 - (ii) pillar 2: Shift to more efficient inland transport modes and operations,
- and
- (iii) pillar 3: Improve inland transport infrastructure and operations.

(2) Given the regulatory nature of the Inland Transport Committee, with its highly specialized Working Parties (among them WP.24 for intermodal freight transport and logistics), the strategy should focus on developing, where possible, regulatory solutions that support climate change mitigation. For doing so, each Working Party should concentrate on its strengths to develop solutions that can be translated in concrete impacts for transport as a whole. This latter task should be ensured through ITC.

39. The remainder of this document sets out some possible considerations on the individual sections of the strategy.

I. Inland transport and climate

40. WP.24 may suggest that this section briefly sets the scene for the climate change challenge and provides data why transport has a role to play in mitigating climate change.

II. ITC vision and mission for climate action

41. WP.24 may suggest that this section refers to and links strongly to the ITC strategy until 2030 agreed by member States as the basis for all ITC activities. WP.24 may also suggest that the three pillars (avoid-shift-improve) define the ITC mission for climate change.

III. Strategic objectives

42. WP.24 may suggest that, in developing any strategic objectives the regulatory work of ITC should be taken into consideration which allows ITC to make an impact beyond the ECE region. To this end, regulatory solutions should be emphasized with ITC and its Working Parties working on these solutions in the areas of their expertise.

IV. ITC-administered instruments to assist in mitigating climate change

43. WP.24 may wish to note that the legal agreements that it administers (the AGTC and the Protocol to AGTC) are already, intrinsically, contributing to climate change mitigation. WP.24 may also note that additional possible modernisation of the AGTC/Protocol to AGTC can contribute to climate change goals further in future. Therefore, emphasis should be put on developing existing instruments. Elaboration of new instruments should be only considered regarding transport issues not yet covered in conventions and agreements under the purview of ITC and its Working Parties.

V. ITC Climate Action Plan with milestones – ITC to help deliver on climate goals

44. WP.24 may wish to recommend that the Climate Action Plan with milestones should seek to develop clear actions that would allow to implement what is defined in the mission and objectives. Therefore, and building on what has been provided above, WP.24 may recommend that the action plan highlight key actions towards avoiding inefficient transport, encouraging modal shift to rail/inland waterways, and further improving transport operations. In doing this, and, within this framework, ITC should consider calling on the expertise of its Working Parties.

45. The following long-term action can be recommended per specific pillar.

(i) Avoid inefficient inland transport:

- Promote accession and implementation of legal instruments assisting in avoiding inefficient inland transport operations;
- Identify and help implement solutions for avoiding inefficiencies.

(ii) Shift to more efficient inland transport modes and operations:

- Promote accession and implementation of legal instruments assisting in shift to more efficient transport modes (rail and inland waterways) and promoting intermodal transport;
- Strive to set and implement modal shift targets or a target for intermodal transport;
- Assist digitalization and electronic information exchange for modal shift;
- Assist development and application of methodologies for modal shift.

(iii) Improve inland transport infrastructure and operations:

- Promote accession and implementation of legal instruments assisting in improving inland transport infrastructure and operations;
- Promote innovation for curbing transport emissions;
- Support inland transport electrification/use of alternative fuels.

VI. List of priorities

46. WP.24 may wish to note that an action plan and milestones that are envisaged in the previous section would be, by definition, multi-pronged and typically individual to the activities of each Working Party while ITC should build on these activities and coordinate them to ensure impact for inland transport as a whole.

47. WP.24 may then wish to propose the following actions to be included in the strategy relevant to its expertise of work:

- Under avoid inefficient transport/promote accession and implementation of legal instruments: accelerate accession and implementation of the AGTC and the Protocol to AGTC so that intermodal transport infrastructure is standardized and allows for optimal transit traffic as well as monitor progress.
- Under avoid inefficient transport/identify and help implement solutions for avoiding inefficiencies:
 - optimize infrastructure networks by better utilization of ITS or traffic management system for intermodal transport.
 - Work towards reducing pathing conflicts by elaborating solutions for equal and fair use of the railway network by freight and passenger transport,
 - Innovate to develop solutions for minimising empty runs,
 - Innovate on intermodal solutions for climate friendly city logistics.
- Under shift to more efficient inland transport modes and operations/promote accession and implementation of legal instruments:
 - Accelerate accession and implementation of the AGTC/Protocol to AGTC so that intermodal transport infrastructure is developed for shifting to rail or inland waterways and monitor progress in infrastructure improvements,
 - Share the AGTC experience beyond its geographical scope and open up the agreement or promote similar regional agreements for other regions.
- Under shift to more efficient inland transport modes and operations/set modal shift targets: strive to set a target for market share of intermodal transport for freight and monitor progress.
- Under shift to more efficient inland transport modes and operations/assist digitalization and electronic information exchange for modal shift: work towards efficient and seamless multimodal transport data and information digitalization and monitor progress.
- Under improve inland transport infrastructure and operations/support inland transport electrification and/or use of alternative fuels: consider additional parameters in the AGTC/Protocol to AGTC assisting electrification or use of alternative fuels or energy solutions and amend the instruments.

VII. Resource requirements for the delivery of this Strategy

48. WP.24 may wish to reiterate that all its activities have a direct or indirect impact on mitigating climate change. As such it may recommend that additional, new resources are allocated to its work so that actions on mitigating climate change are implemented swiftly.

VIII. Strategic Partnerships for the delivery of this Strategy

49. WP.24 may wish to note that it is already partnering with a number of external parties in its activities. These partnerships should be continued.

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

A. Inputs and feedback from WP.29 to the outline of the ITC climate change strategy and to the biennial report*

50. For a successful inland transport climate change mitigation strategy, WP.29 has categorized its contribution to the draft ITC outline in two ways:

(a) What WP.29 and its subsidiary bodies¹ can do to contribute to the ITC climate mitigation strategy, labelled “WP.29 contribution” in the rest of this document: WP.29 agreed to assess the GHG effect of its proposals. The exact procedure to perform such assessment would be defined after the endorsement by ITC of the proposal by WP.29 (paras. 64 and 76). WP.29 agreed to contribute to the strategy by setting three overarching goals to help achieve reduction of GHG emissions from vehicles by

- Looking at the carbon footprint of vehicles over the lifetime, from cradle to grave (para. 65)
- Lowering and robustly measuring the GHG emissions and energy consumption of vehicles and their components during their use phase (paras. 66–71)
- Ensuring the safe deployment of carbon neutral technologies and powertrain (para. 22)

(b) What WP.29 recommends ITC to consider for an impactful climate mitigation strategy and/or what would be needed from ITC to help WP.29 achieve the ambition of the strategy, labelled “WP.29 recommendations to ITC” in the rest of this document: WP.29 recommends ITC to:

- Develop a data driven strategy, with quantifiable metrics to measure progress and monitor its impact on GHG emissions of the inland transport sector (paras. 0, 0, 82, 88 and 93)
- Invite Contracting parties to share their inland transport decarbonization action plans in order to guide ITC and its subsidiary bodies into its priority actions to mitigate GHG emissions (paras. 73, 83 and 90)
- Ensure all legal instruments and the meetings of ITC and its subsidiary bodies are fit for hybrid meeting configuration in order to reduce GHG emissions from meeting attendance (paras. 74 and 079)

B. Introduction

51. At its 85th session, ITC “requested the secretariat, in close cooperation with the Committee’s Bureau and relevant subsidiary bodies, to develop an ambitious strategy document for reducing Green House Gas (GHG) emissions in inland transport based on international United Nations legal instruments under the Committee’s purview with priority actions for The Inland Transport Committee (ITC) and all its relevant subsidiary bodies, supported by a strong action plan with milestones, for consideration and possible adoption by the Committee at its 86th plenary session (2024)” (Decision 44 (a)).

* Note prepared by the WP.29/GRPE informal task force on the ITC Strategy on Reducing Greenhouse Gas Emissions from Inland Transport. It represents WP.29’s collected thinking based on our existing understanding, and further considerations of the proposal might be needed. Annex IV – VII of this document were submitted as part of WP.29’s input.

¹ Throughout this document, reference to “WP.29” should be understood as “WP.29 and its subsidiary bodies”

52. ITC also “requested the secretariat to report biennially through in-depth reports to the Committee on climate change and inland transport, starting at the Committee’s 86th session in 2024” (Decision 44 (g)).

53. In a letter sent to all chairs of ITC working parties on 9 May 2023, the Chair of ITC and the Director of the Sustainable Transport Division invited “to provide your inputs and feedback to the outline of the climate change strategy as contained in the Annex to this letter as well as the biennial report for the 86th ITC session to Ms. Franziska. Hirsch (franziska.hirsch@un.org) by Friday 29 September 2023”.

54. At its 89th session, GRPE agreed to create an informal task force on ITC climate change mitigation strategy. The informal task force, open to all GRPE participants, aimed at developing the inputs as requested by ITC, and submitted to GRPE via a written procedure to deliver on time for the deadline of 29 September 2023.

55. At its 190th session, WP.29 agreed to have GRPE to consolidate the inputs to the ITC climate change mitigation strategy for WP.29 and its subsidiary bodies. All interested parties were invited to join the informal task force and/or to submit their inputs to GRPE to have them reflected in a consolidated input to be endorsed by WP.29 at its November 2023 session.

C. Inputs and feedback to the outline of the climate change strategy

56. The inputs and feedback from WP.29 are split into two categories for each section of the outline:

(a) What WP.29 can do to contribute to the ITC climate mitigation strategy, labelled “WP.29 contribution” in the rest of this document.

(b) What WP.29 recommends ITC to consider for an impactful climate mitigation strategy and/or what would be needed from ITC to help WP.29 achieve the ambition of the strategy, labelled “WP.29 recommendations to ITC” in the rest of this document.

1. Section 1: Inland transport and climate

WP.29 recommendations to ITC

57. WP.29 recommends the ITC strategy to first introduce past and present data on the evolution of greenhouse gas (GHG) emissions of the inland transport sector, and its contribution to overall GHG emissions.

58. WP.29 recommends the ITC strategy to show latest forward-looking projections as performed by the most prominent institutions, such as the IPCC, IEA or ITF, to show expected trends for the decades to come. WP.29 recommends the ITC strategy to then introduce the efforts needed to contribute to reaching the target set by the Paris agreement to limit “global temperature increase to well below 2 degrees Celsius, while pursuing efforts to limit the increase to 1.5 degrees”.

59. WP.29 recommends the ITC strategy to be data driven, and to rely on quantified / quantifiable targets for its vision, missions, objectives, milestones and priorities. Those targets should ideally directly contribute to climate change mitigation and GHG emission reduction.

60. WP.29 recommends, as an early milestone of the implementation plan of the ITC strategy and as complimentary information to the background document prepared together with the draft strategy, that a review of what has been achieved during the last decades in terms of transport policies affecting GHG emission reduction is contemplated in order to identify the best practices and the potential lessons learnt. These elements could potentially inform the work done in implementing the ITC strategy.

2. Section 2: ITC vision and mission on climate action

WP.29 recommendations to ITC

61. WP.29 recommends the ITC strategy to adopt a clear vision supporting the trajectory toward decarbonization of global inland transport by 2050.

62. WP.29 recommends the ITC strategy to consider any available means towards carbon neutrality to enable choosing the most adequate solution for each use case and place and take into account the specificities of each jurisdiction.

63. WP.29 recommends the ITC strategy to include a mission to monitor progress on the decarbonization of inland transport globally, via a data collection mechanism, and/or provide regular updates as part of the biennial report (para. 92).

64. WP.29 recommends the ITC strategy to also consider a mission to assess the contribution of its subsidiary bodies to climate change mitigation. Such mission would potentially identify gaps and ways to improve the contribution from its subsidiary bodies and, if needed, to adapt/amend the ITC-administered instruments to maximize the mitigation potential of the activities of the subsidiary bodies.

3. Section 3: Strategic objectives

WP.29 contribution

65. As an overarching objective, WP.29 agreed to assess the GHG effect of its upcoming regulatory initiatives, keeping vehicle safety at equal importance. The aim of such assessment would be to ensure that activities performed by WP.29 are consistent with the decarbonization of inland transport and to increase awareness and transparency about GHG impact of WP.29 proposals and decisions. Implementation of such GHG effect assessment would be developed once the strategy is adopted by ITC.

66. WP.29 has identified three main strategic objectives to support the decarbonization of inland transport related to its existing and forthcoming activities:

- (a) Looking at the carbon footprint of vehicles over the lifetime, from cradle to grave;
- (b) Robustly measure and lower the GHG emissions and energy consumption of vehicles and their components during their use phase;
- (c) Ensure the safe deployment of carbon neutral technologies powertrain, and modes of transport.

67. Below are examples of existing and forthcoming activities in subsidiary bodies to WP.29, for each strategic objective identified:

(a) Looking at the carbon footprint of vehicles over the lifetime, from cradle to grave

68. To fully capture emerging technologies and their impact on GHG emissions, GRPE agreed to develop an internationally-harmonised procedure to determine the comprehensive carbon footprint lifecycle of all types of road vehicles, covering all phases of the vehicle life, from cradle to grave (from material extraction and processing, to manufacturing, use and dismantling/recycling) as well as energy chain (Well-to-Tank) in the years to come. GRPE notes the importance of harmonized definitions of the vehicles being addressed by the strategy, as different meanings are used in many countries / regions .

(b) Robustly measure and lower the GHG emissions and energy consumption of vehicles and their components during their use phase

69. GRPE contributed to globally-harmonized GHG tailpipe emissions measurement with the developments of UN GTRs Nos.2, 4, 15 and UN Regulations Nos. 101 and 154 that all represented an important step forward in making CO₂ emission measurements more robust, vehicle specific and comparable.

70. GRPE agreed to continue developing and refining tailpipe GHG measurement methodologies, considering how to better reflect real world emission performances, and considering the need for developing such methodologies for inland transport modes under its portfolio that are currently not covered.

71. GRPE would initiate discussions to collect information on the state of practice from the different countries/regions and explore the feasibility and potential benefits of globally harmonized regulatory tools to limit / set reduction targets to tailpipe GHG emissions, as already done in many countries/regions across the globe.

72. Vehicle lighting is one of the contributors to the energy efficiency. WP.29 and its Working Party on Lighting and Light-Signalling (GRE) have had preliminary discussions on reducing the power consumption of lighting devices. In the 85th session of GRE on 26-29 October 2021, GTB (The International Automotive Lighting and Light Signalling Expert Group) made a presentation GRE-85-37 titled "How to reduce power consumption in existing lighting functions without reducing safety".

73. The use of LED's has been a very good first step, but even more efficient solutions are necessary. Amendments to the regulatory provisions will be necessary to allow new technical solutions and lamp operation conditions. For that GTB is conducting independent research studies to assess the effective energy saving measures.

74. Last time GRE reviewed its subjects under consideration in the 87th session on 25-28 October 2022. The document GRE-87-26-Rev.1 includes attention to environmental aspects and zero emission mode light-signalling as potential future priorities.

75. Latest amendments to UN Regulation No. 117 (ECE/TRANS/WP.29/2023/8) provide a reduction of the maximum rolling resistance of tyres for all vehicle categories offering between 5% and 15% the rolling resistance coefficient, starting in 2024, for all tyres on the market, including aftermarket tyres. The estimated CO₂ savings are expected to be equivalent to removing 1 million vehicles from the road (GRBP-75-30).

76. To lower replacement needs of tyres, latest amendments to UN Regulation No. 117 (ECE/TRANS/WP.29/2023/8) also introduced wet grip performance requirements for worn tyres so their performance is constant over the lifetime. This is expected to reduce the need to prematurely replace tyres and improve their durability (GRBP-69-09).

77. GRVA works on regulatory developments under the 1958 Agreement to allow new braking technology, employing both electric control transmission and electric energy transmission. This technology is seen as an important element in the transition from vehicles employing internal combustion engines to alternatives powered by electrical energy.

78. It is recognized that trailers, while not directly emitting GHG at standstill or in motion, contribute to the emissions of heavy duty vehicles. GRVA, with the support of GRSG, is exploring the potential role of trailers to reduce these emissions. One of these measures/technologies for a reduction of these emissions is to equip trailers with an electric regenerative braking system and/or a propulsion system in its axle. These new axles in trailers have the potential to convert the kinetic energy of an axle to supply electric systems (e.g. cooling units for refrigerated trucks) as well as to support the motor vehicle (e.g. the tractor) during start-stop manoeuvres or during accelerating/braking. Such axles have the potential to lower energy consumption of the motor vehicle or the cooling units and therefore lower their CO₂ emissions. Such axles would have an impact on the safety concepts governing the braking of trucks and their trailers, hence the activities of GRVA.

79. GRVA agreed to consider the potential of connected vehicles / vehicle connectivity to address sustainability and circular economy.

80. As per the comments received from the expert from China and the reports of IPCC (https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_Chapter10.pdf), the impact of Automated Driving Systems and Intelligent and Connected Vehicles (ICV) technologies is difficult to evaluate. Such vehicles may have a positive impact on the single vehicle energy consumption and operation efficiency. They may have no obvious impacts on the vehicle ownership. They may have a negative effect on the total mileage and. Proper policies and technical measures could support that the overall impact of ICV technologies on reducing GHG emissions from inland transport would be positive and contribute to the achievement of the ITC's GHG reduction strategic objectives.

81. GRSG has developed UN Regulations No. 122 on radiant warmers that allow to reduce energy consumption of the heating system of vehicles. GRSG also allowed in UN

Regulation No. 46 the use of camera/monitor systems instead of large mirrors in trucks to reduce aerodynamic drag and reduce energy consumption.

(c) Ensure the safe deployment of carbon neutral technologies, powertrain, and modes of transport

82. The development and innovation in the field of automated and connected vehicles is ongoing. GRVA's input, actions and milestones might need to be revised, recognizing the nascent nature of the ADS technology and the high level of uncertainty regarding the ADS performance and impact.

83. GRSG, contributes to incentivizing the use of alternative mode of transport through activities improving accessibility of buses for all, specific safety for child transport in buses, and through activities to ensure better protection of vulnerable road users (often using active mobility modes of transport).

84. GRSP contributed to the development of the regulatory framework for the deployment of safe electric/hybrid-electric and hydrogen and fuel-cells vehicles (HFCV). UN GTRs Nos. 13 (HFCV), 20 (EVS), United Nations 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 (extracted from ECE/TRANS/2023/21).

WP.29 recommendations to ITC

85. WP.29 recommends the ITC strategy to provide top->down guidance on GHG matters to its subsidiary bodies:

(a) To help WP.29 and other subsidiary bodies to act on high-priority items, a detailed action plan from contracting parties (CPs) on their inland transport decarbonization strategy would help identify the most crucial elements to consider and to prioritize.

(b) ITC may invite some of its subsidiary bodies to pay closer consideration of non-vehicle parameters having a high impact on GHG emissions for road transport sector such as modal shift towards lower carbon transport modes, shared vehicle or distance covered, vehicle ownership (as already indicated in Annex III. to ECE/TRANS/2023/21. ITC and its subsidiary bodies might be willing to increase activities related to the deployment of the infrastructure needed to allow for a wide adoption of low-carbon technologies.

86. WP.29 recommends the ITC strategy to also ensure systematic provision of hybrid meeting possibility for its subsidiary bodies to reduce business travel and lower related GHG emissions; a monitoring mechanism of GHG emissions saved by remote participants might also be considered to quantify the related GHG emissions saved thanks to avoided travel.

87. The CO₂ emissions related to automated and connected vehicles may differ from the typical CO₂ emission of traditional road vehicles in their whole life cycle especially during their development and their use. It may be expected that the GHG/CO₂ emissions (or fuel/energy consumption) will be optimized and will not provide the same variability that drivers may cause.

88. The ITC strategy may wish to consider addressing unnecessary diversities and variabilities in terms of transport policies that could lead to a sub-optimum use of automated transport.

89. The automotive sector has already informed GRVA of the impact of small variations that occurred in the local implementations of international traffic rules set in road transport conventions. By comparison, it may already be anticipated that strategic differences in terms of transport management and rules may have a strong impact on harmonization and performance optimization. The impact of the vehicle environment on the vehicle performance may increase and might need to be considered.

4. Section 4: ITC-administered instruments to assist in mitigating climate change

WP.29 contribution

90. WP.29 conventions and agreements are appropriate for the existing tasks to deliver on globally harmonized methodologies to measure GHG impact of vehicles, as performed by GRPE as the main working party for coordinating the assessment all matters related to environmental impact of vehicle design, construction, use and dismantling (covering the “Improve” of the Avoid/Shift/Improve approach). Working parties other than the GRPE may be required to engage for areas outside of the GRPE’s expertise or authority.

91. WP.29 is ramping up the digitalization of the administrative processes as part of the three vehicle agreements, and fully digital solutions could potentially reduce the GHG footprint of the certification process. WP.29 administrative/certification processes could be reviewed with an aim to reduce GHG emissions.

WP.29 recommendations to ITC

92. WP.29 recommends ITC to:

(a) Provide continuous support to WP.24 to further contribute to freight inter modal transport;

(b) Support the creation of dedicated activities looking at the interactions between vehicles/infrastructure and energy sector to accelerate the deployment and adoption of carbon neutral alternatives. Establish a link with urban city leaders such as through the UNECE forum of Mayors and relevant external networks.

93. To ease the wider deployment of hybrid meeting options, WP.29 recommends the ITC strategy to also review ITC-administered tools to allow for the possibility for remote participants to have the same rights and obligations as in-person participants. For example, all ITC-administered instruments should be fit for remote adoption/voting procedure.

5. Section 5: ITC Climate Action Plan with milestones – ITC to help deliver on climate goals

WP.29 contribution

94. By 2025, WP.29 would develop a methodology to determine carbon footprint over the whole life of new automotive products, from cradle to grave (as part of the A-LCA activities).

95. By 2030, WP.29 would assess the feasibility and potential benefits to further globally harmonize tailpipe GHG measurement methodologies for all vehicle categories, including heavy-duty vehicles.

WP.29 recommendations to ITC

96. By 2028, ITC to collect (either from existing sources or with dedicated data collection mechanisms) inland transport GHG emissions evolution over the years. Regular progress monitoring would also be covered (e.g. as part of ITC climate change mitigation biennial report).

97. By 2030, ITC to provide guidance to its subsidiary bodies on CPs inland transport decarbonization strategies. Such country/regional plans to decarbonize inland transport adopt similar approach to UNFCCC Nationally Determined Contributions (NDCs), also using similar timeline as UNFCCC’s NDC submission cycle.

6. Section 6: List of priorities

WP.29 contribution

98. WP.29 commits to actively contribute to the following regulatory priorities as listed in ECE/TRANS/2023/21:

(a) Para. 14. (a): Decreasing carbon intensity over the vehicles’ life; defining harmonized methodologies to determine the climate impact of vehicles during their lifetime

that can then inform the corresponding regulatory framework; developing Carbon life cycle assessment (LCA) of vehicles a critical stepping stone

(b) Para. 14. (b): Developing of the harmonized international regulatory framework for facilitating the transition to alternative fuels and greening

(c) Para: 14 (c): support the acceleration of electrification. Enhancing vehicle fuel efficiency and increasing the adoption of EVs can play an essential role in combating climate emissions whilst improving air quality.

(d) Para 14. (h): Accelerated regulatory framework for digitalization of the sector, and integration of innovations and new technologies.

[WP.29] commits to:

(a) Speed up the delivery of on-going GHG related activities from the latest work programme (ECE/TRANS/WP.29/2023/1/Rev.2)

(b) Continuously explore new topics for future considerations and inclusion into the WP.29 work programme.

(c) Encourage the mobilization of sufficient resources to fulfil GHG-related priorities in a timely matter.

7. Section 7: Resource mobilization for the delivery of the strategy

WP.29 contribution

99. In order to deliver on the strategic objectives, action plan with milestones and list of priorities, WP.29 would benefit from greater implication and additional resources from all CPs signatories to the WP.29 agreements, together with a strong mandate from their responsible authority to develop those activities as part of ITC and their subsidiary bodies. More resources for type approval authorities and accredited technical services would help deliver more quickly on the ambitious ITC climate change mitigation strategy. Additional resources could include experts on climate change, energy production, vehicle assembly and disassembly, in-use assessment, and operator activity, including vehicle fuelling and charging in addition to the vehicle technical expertise normally provided by stakeholders to address vehicle emissions.

WP.29 recommendations to ITC

100. WP.29 recommends the ITC strategy to include the creation of a dedicated ITC secretariat staff to work on the implementation of the ITC strategy on climate change mitigation. This dedicated staff would be responsible for the implementation of the ITC climate change mitigation strategy and would coordinate actions:

(a) in between all ITC subsidiary bodies;

(b) with other UNECE divisions, such as Energy, Environment, Statistics, ...;

(c) with other international activities and initiatives working on inland transport climate change mitigation, such as UNFCCC, ITF, SLoCaT, ...

101. WP.29 recommends the ITC strategy to mobilize resources to ramp up data collection capabilities on GHG emissions from inland transport (in-house, or in cooperation with other bodies). this would make the deployment of the data driven strategy (para. 59) possible.

8. Section 8: Strategic partnerships for the delivery of this Strategy

WP.29 contribution

102. To help deliver on the strategy on climate change mitigation, WP.29 commits to regularly invite key global / international initiatives working on vehicle decarbonization to update WP.29 on their latest activities. Initiatives like the Breakthrough Agenda, the ZEV Transition Council, the WEF Circular Car Initiative, the G7 Transport Ministers' meeting, the G20 Transport Task Group, ... are examples of some of the most relevant activities related to some activities of WP.29.

WP.29 recommendations to ITC

103. WP.29 recommends the ITC strategy to consider the inclusion of a closer working relationship with the UNFCCC secretariat on inland transport, on the following activities, among others:

(a) Inland transport emission inventories: for example, electrification of the inland transport sector might require new approaches to attribute the use of electricity to end-use sectors, such as inland transport.

(b) Decarbonization plans and objectives: knowing CPs plan to decarbonize their inland transport sector would be key to a successful strategy; given the similarities with the UNFCCC NDCs, some bridges would be beneficial to ease the burden of CPs to submit their contribution. This is not meant to be a substitute for CPs determination of their individual contributions.

104. GRVA recommends, learning from the coordination challenges posed by the number of partnerships and projects on Automated Driving Systems (ADS), to carefully implement (a limited number of) partnership projects to facilitate implementation and maximize benefits.

D. Feedback to the biennial report on climate change and inland transport

WP.29 contribution

105. As done as part for the 85th session of ITC (Annex III. to ECE/TRANS/2023/21), WP.29 commit to update its contribution on the latest progress made on the activities performed under the framework of WP.29 for the biennial report. The WP.29 work programme / list of priorities of the GRs would also be used to update on the GHG-related activities.

106. For other vehicle-specific GHG-related activities not developed under the framework of WP.29, some key information would also be shared to be included in the biennial report, using different ways to collect the information:

(a) Information included in publication from external sources, such as the Global EV Outlook published annually by the International Energy Agency, and the accompanying EV policy tracker, ...;

(b) Sending a survey to WP.29 participants to enquire about latest GHG-related policy development in their jurisdiction for CPs, for their product/field of interests for NGOs.

WP.29 recommendations to ITC

107. WP.29 recommends ITC to prepare the biennial report to include a GHG emissions data progress part from its 2028 edition (para. 77), in order to show the evolution of GHG emissions from the global inland transport sector.

E. Conclusions

108. Given the challenge ahead to limit the impact of climate change, WP.29 congratulates ITC to take this initiative to develop the ITC climate change mitigation strategy and encourages an ambitious strategy, as requested to the secretariat. Through this contribution, WP.29 tackles both bottom-up (what can WP.29 do to contribute to the strategy) but also top-down (what WP.29 would recommend ITC to consider for a successful strategy).

109. WP.29 wishes every success to ITC for the adoption of this strategy and ITC can count on WP.29 to continuously contribute to this important task.

X. Working Party on Customs Questions affecting Transport (WP.30)

(forthcoming)

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

110. The Working Group on Road Transport (SC.1) promotes the development and simplification of international road transport — cargo and passengers — by harmonizing and simplifying rules and requirements for transport. To achieve this goal, SC.1 develops, manages and updates international legal documents. SC.1 is the main body for technical expert groups, in particular concerning the implementation of digital tachographs or the transport of passengers by intercity buses. It also develops recommendations for the implementation of best practices in the field of international road transport, such as the Consolidated Resolution on the Simplification of International Road Transport (R.E.4). Finally, SC.1 is working on improving the third-party motor insurance system (Green Card system), etc.

Contribution of SC.1 to the ITC 2050 Climate Change Mitigation Strategy:

111. Currently, work is underway to amend the AETR in terms of transferring the Agreement to Global status and opening it for accession by other contracting parties, and long-term work is also underway to develop technical requirements for the introduction and installation of smart tachographs on cars.

112. Continue to promote accession to transport legal instruments, especially CMR and eCMR (ongoing). With the emerging digital economy, transformation in the road transportation sector is crucial. The shift from a paper format of transport documents to a fully digital one will contribute to reducing the pollution generated by the road transport industry. Digitalization of transportation documents is first and foremost an environmentally friendly measure.

113. Continue to be a platform for Member States, NGOs and private sector companies working together with SC.1 on quality road infrastructure to share best practices, educate and raise awareness of safe and sustainable road infrastructure policies and practices (ongoing/expanding effort).

114. Consider the development of road transport with a view to the electrification of light and heavy-duty vehicles (HDV) and, if appropriate, make proposals on the best way to develop charging station infrastructure. In this regard, collaborate with WP.24 to find potential solutions that serve last-mile transportation and delivery (starting in 2023).

115. In particular with regard to the European Agreement on the main international transport arteries (AGR), continue to develop the characteristics of the international network "E" in the EEC region in terms of technological development and traffic flows, as well as strengthen its aspects of safety and environmental protection. This includes holding discussions where/when appropriate on the validity and relevance of the AGR text, as well as ensuring the relevance of the agreement and promoting best practices in road safety, environmental sustainability and technology (ongoing/long term).

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

A. Introduction

116. The Chair of the Inland Transport Committee (ITC) has written to all Working Party Chairs to obtain input into the new ITC Climate Change Mitigation Strategy. In particular, the Chair provides an outline of what the strategy should look like and encourages input into these chapters. The outline is set out below:

- I. Inland transport and climate;

- II. ITC vision and mission for climate action;
- III. Strategic objectives;
- IV. ITC-administered instruments to assist in mitigating climate change;
- V. ITC Climate Action Plan with milestones – ITC to help deliver on climate goals;
- VI. List of priorities;
- VII. Resource requirements for the delivery of this Strategy;
- VIII. Strategic Partnerships for the delivery of this Strategy.

117. The Working Party will recall that the Working Party on Rail Transport (SC.2) has long been working on climate change mitigation and has long espoused the climate change friendly credentials of the rail sector, also seeking to facilitate modal shift to the railways to further reduce the environmental impacts of transport.

118. As recently as the seventy-sixth session of the Working Party, SC.2 had a dedicated workshop on “The impact of climate change on the railways: how to protect, adapt and mitigate”. This workshop highlighted many of the difficulties faced by the sector as a result of climate change as well as the steps that are being taken to mitigate the effects of climate change.

119. Based on the information the workshop and the result of the standing agenda item within the sessions of SC.2, the Working Party would like to highlight the following high-level comments in support of the development of the strategy:

- The strategy should put at its centre rail as the most environmentally friendly mode of transport.
- The strategy should focus on encouraging modal shift and especially to rail as only efforts to move traffic to less polluting modes of transport will provide a long term solution to reducing the negative effects of the sector as a whole on the environment.
- For many freight and passenger movements, rail remains the most efficient mode. As such the strategy should also ensure that there is emphasis placed on avoiding inefficient transport.
- Given the regulatory nature of the Inland Transport Committee, the strategy should focus on developing regulatory solutions that support climate change mitigation with the aim of improving transport operations across all modes. Each Working Party should concentrate on its relative strengths and comparative advantage in this area to develop “local” (transport mode specific) solutions that can have “global” (transport sector as a whole) impact. Given the cross-cutting nature of climate change mitigation, it would not be appropriate to have one overarching body looking at climate change nor to allocate single working parties priority over certain areas of implementation.

120. The remainder of this document sets out some possible considerations on the individual sections of the strategy based on the overarching themes mentioned in the bullet points above. The Working Party may wish to consider these points and whether it should be submitted to ITC as the contribution from the Working Party on Rail Transport.

B. Main strategy headings

I. Inland transport and climate

121. The Working Party would suggest that this section provides background data on inland transport and climate and the projections going forward.

II. ITC vision and mission for climate action

122. The Working Party suggests that this section refers to and links strongly to the ITC Strategy to 2030 agreed by member States as the basis for all ITC activities. It should also

highlight those aspects that are already being addressed within Working Parties drawing on the annual reporting that was provided last year.

III. Strategic objectives

123. The Working Party suggests that, in developing any strategic objectives for the document, strong emphasis should be placed on encouraging modal shift to rail as well as ensuring that sufficient attention is placed on ensuring that rail is resilient to climate change. Furthermore, sufficient attention should be placed on making rail more competitive especially in the transportation of freight, but also for passengers. Any strategic objectives should focus on capitalizing on the comparative advantage of individual Working Parties within ITC. Therefore, ensuring that the sector specific experts (in the case of the Working Party, rail specific experts) are left to decide on how best to respond to climate challenges using their specific skillsets, leaving ITC to ensure that there are no conflicts or inconsistencies between them.

IV. ITC-administered instruments to assist in mitigating climate change

124. The Working Party notes that the legal agreements that it administers (the AGC and the Model Rules) are already, intrinsically, contributing to climate change mitigation and the amendment modifications proposed this year to the AGC strengthen this contribution further by promoting changes that facilitate international passenger rail transport. SC.2 notes that additional modernization of the AGC will contribute to these climate change goals further in future. The developments in relation to Unified Railway Law will also further contribute to climate change mitigation by facilitating border crossings and encouraging further modal shift.

125. The Working Party notes that this is also the case for a number of other Working Parties and the legal instruments that they administer directly or through Administrative Committees. Therefore, the Working Party strongly recommends to continue developing the existing conventions and agreements to better address climate change mitigation in the fields of their focus. At the same time, the Working Party would not support elaboration of an overarching instrument on climate change mitigation, should be such proposed, as it would be difficult to understand how such an over-arching legal instrument would interact with these existing agreements.

V. ITC Climate Action Plan with milestones – ITC to help deliver on climate goals

126. The Working Party recommends that the Climate Action Plan with milestones should seek to develop clear actions that implement what is being developed within the strategic objectives. Therefore, and building on what has been provided above, the Working Party recommends that the action plan highlight key actions towards encouraging modal shift to rail coupled with initiatives aimed at avoiding inefficient transport (highlighting the efficiency of increased rail transport). This should be supported by regulatory and policy initiatives that focus on improving transport movements and operations which are targeted at quick win solutions that can have a direct impact on climate change mitigation. In doing this, and, within this framework, ITC should consider calling on the expertise of SC.2 to develop possible actions to accelerate this process.

VI. List of priorities

127. The Working Party notes that an action plan and milestones that are envisaged in the previous section would be, by definition, multi-pronged and individual to the activities of each Working Party. This parallel approach, which also capitalizes on the synergies between Working Parties, means that while creating an indicative list of actions would be useful, prioritizing them would be counter-productive as this would create bottlenecks in the implementation of the Strategy. Having said that, the Working Party notes that the following actions could be included in the strategy relating to the activities of SC.2:

- Accelerate accession to and implementation of the rail related legal instruments that have a direct impact on the reduction of climate change impacts including the AGC and its harmonised technical parameters and standards, the Model Rules on the Permanent Identification of Railway Rolling Stock and other legal instruments currently under development.

- Encourage the optimisation of the rail infrastructure network in order to be able to absorb further traffic from other modes and further increase (improve) its efficiency through improved signalling, telematics, traffic management and other innovative solutions on the network and in stations.
- Encourage the improvement of capacity allocation for freight and passenger services, allowing the segregation of flows where possible and prioritising the more efficient, national and international flows on the network.
- Develop new and innovative solutions, supported by regulatory initiatives aimed at reducing empty running.
- Noting that there is always room for improvement, even in relation to the environmental impact of the rail sector, facilitate the introduction of track access charges that reward the use of more efficient and less polluting technologies in providing passenger and freight services.
- Encourage member States to set concrete targets for rail transport for both passenger and freight transport.
- Seek to further standardize the E-Railways (the routes of international importance) to further aid modal shift and efficiency.
- Extend the key E-Railway parameters included in the AGC to include the requirement for new infrastructure to be built to be either electrified or that it requires that the majority of trains running on it use alternative fuels or energy solutions.
- Ensure that the climate change impacts on rail are also considered to ensure the resilience of transport infrastructure whilst also developing robust contingency management and international crisis management strategies for rail.

VII. Resource requirements for the delivery of this Strategy

128. The Working Party reiterates that all the activities of SC.2 have a direct impact on mitigating climate change. As such it recommends that additional, new resources are allocated to the Working Party to ensure that all the areas mentioned above can be effectively implemented within the activities of SC.2 to increase the direct impact of the railways on mitigation.

VIII. Strategic Partnerships for the delivery of this Strategy

129. The Working Party notes that it is already partnering with a number of external parties in all its activities and that it has a Memorandum of Understanding (MoU) with UIC that is also working extensively in sustainability aspects for the sector. The Working Party suggests that the secretariat may wish to update its MoU with UIC to include this aspect in more detail.

XIII. Working Party on Inland Water Transport (SC.3)

A. Outcome of the workshop “Climate Change Mitigation Activities in Inland Water Transport” held at the sixty-seventh session of SC.3

130. Following the decision of SC.3 at its sixty-sixth session (ECE/TRANS/SC.3/217, paragraph 104), delegations took part in the workshop on 11 October 2023 dedicated to activities on mitigating climate change from inland water transport, strategies, programmes and projects in this field, progress made by countries, international organizations and other key stakeholders, and the way forward. The workshop focused on: (a) climate change mitigation activities in inland water transport, strategies, programmes and projects in this field, (b) progress made by countries, international organizations and other key stakeholders, and lessons learned, (c) priorities for future activities in this field and (d) milestones to be included in the Climate Action Plan of the Inland Transport Committee (ITC) in the field of inland water transport. The key speakers were: Mr. L. Wyrowski, secretary of the Working Party on Intermodal Transport and Logistics (WP.24), Mr. R. Janssens, secretary of the

Working Party on Transport Trends and Economics (WP.5) and the secretariat. The presentations were followed by questions and topics for further consideration.

131. The respondents were of the opinion that the efficiency of the climate change mitigation policy in inland water transport was:

- At the European level – 63 per cent
- At the national level – 61 per cent.

132. The respondents considered that the efficiency of climate change mitigation policy in the sector could be improved by means of:

- Increased investments
- Broader introduction of climate change mitigation measures into the national policy
- Development of national programmes
- Development of the regulatory framework.

133. The participants stressed the need for developing common measures coordinated at the level of the Economic Commission for Europe (ECE) that will become the basis of the relevant national programmes.

134. Among the main obstacles for improving climate change mitigation activities were mentioned:

- Lack of coordination between the structures involved in climate change mitigation activities
- Insufficient funding
- Need for the public support
- Insufficient regulatory and legislative framework.

135. The participants agreed that priority should be given to the following areas of climate change mitigation strategies for inland water transport:

- Intergovernmental support
- Regulatory basis
- Institutional arrangements
- Policy support.

136. In the field of the policy support, the following priorities were mentioned:

- Supporting the modal shift to inland water transport
- Optimizing infrastructure and transport operations
- Supporting digitalization in the sector
- Increasing efficiencies in the freight transport and logistics systems
- Improving the fleet management
- Supporting sectoral activity changes such as a reduced demand for fossil fuels, increased energy efficiency and circular economy
- Developing more tools to monitor and providing a wide range of information relevant to initiatives for reducing the environmental footprint of inland water transport. Enhanced cooperation/coordination between the key players

137. Among the necessary institutional arrangements, the participants indicated (a) enhanced cooperation and coordination between the key players, (b) partnerships and (c) central coordination. It was mentioned that the Working Party already had long term partnerships with the river commissions and other key players on the various aspects on inland navigation.

138. The participants agreed that examples of lessons learned in the climate change mitigation policy were:

- Risk of increasing costs due to the delay in the implementation of climate change mitigation measures
- Need for strengthening the capacities of climate change units in ministries and agencies
- Need for multiple forms of international cooperation
- Need for raising awareness and building strategic capacity
- More engagement of the private sector.

139. The Working Party agreed that the following actions could be included in the ITC strategy on reducing greenhouse gas emissions in inland transport until 2050:

- Continue exchanging best practices and support programmes and pilot projects aimed at modernization and greening of the fleet and monitor their implementation
- Continue promoting the role of water transport using alternative fuels or electromotion and encourage member States to support them through taxation incentives, regulatory and other relevant measures
- Support and encourage research studies and activities, aimed at maintaining and further increasing the inland water transport competitive edge in environmental performance
- Facilitate accession to and implementation of the European Agreement on Main Inland Waterways of International Importance (AGN) and other legal instruments of the United Nations under the purview of ECE that directly affect climate change mitigation
- Encourage member States to set concrete targets for inland water transport in reducing emissions of greenhouse gases and air pollutants as set out in the *White Paper on the Progress, Accomplishments and Future of Sustainable Inland Water Transport*
- Encourage the optimization of the inland waterway infrastructure network in order to facilitate the modal shift to inland water transport from other inland transport modes
- Facilitate the development of new and innovative solutions, supported by regulatory initiatives.

140. Discussion went on (a) monitoring of progress achieved by countries and (b) a desirability of highlighting the role of ECE as a platform for sharing the experience and best practice and its regulatory work in the draft strategy, in particular, in the field of inland water transport. The secretariat was asked to prepare a proposal on monitoring the implementation of the ITC strategy in the field of inland water transport by member States.

Annex IV

European Association of Automotive Suppliers (CLEPA) position on Life-Cycle carbon footprint methodology for Vehicles.

1. CLEPA supports the activities initiated under the framework of the Working Party on Pollution and Energy (WP.29/GRPE) to determine an internationally-harmonized procedure to determine the comprehensive carbon footprint lifecycle of all types of road vehicles, covering all phases of the vehicle life, from cradle to grave
2. CLEPA believes there is a need for a harmonized collaborative bottom-up methodology
3. According to CLEPA, the methodology shall be:
 - (a) Component centred, instead of material-mass centred
 - (b) Bottom-up with a collective & cumulative supply chain approach
 - (c) Enable competition as CO₂e reduction driver
 - (d) Reflecting responsibilities for all intermediate product within the supply chain
4. More details on the CLEPA position on this matter can be found in [A-LCA-01-15-Rev.1](#)

Annex V

International Motorcycle Manufacturers Association (IMMA) perspective toward Carbon Neutrality by 2050

1. Please find below the suggestions by IMMA, to adequately consider Powered Two Wheelers (PTWs) in the ITC climate change strategy and biennial report. This involves considering the regional diversities in the fleets of vehicles, different needs and preferences of the users as well as different vehicle purposes.

2. A combination of diverse approaches towards decarbonization is required to reach the global goals towards climate neutrality. This will foster innovation, healthy competition and empower the market to decide on the most successful solution for each application. IMMA suggests the following three pillars:

1. Promote PTW mobility as PTWs are light, lean and efficient

3. Motorcycling is one of the most common and popular modes of transport around the world, thanks to its affordability and flexibility. PTWs provide a practical mobility solution on their own and an efficient alternative solution to underserved public transport, within urban, peri urban and rural settings. In crisis situations, PTWs are means to provide emergency response services and disaster relief in hard-to-access areas. A modern, well maintained and properly operated PTW has a relatively low environmental footprint. Improved traffic management and infrastructure can further enhance their environmental benefits.

2. Adopt the Multi-Pathway Approach

4. The Multi-Pathway approach enables choosing the most adequate solution for each use case and place and take into account the specificities of each jurisdiction.

5. The decarbonisation of PTWs requires a technology-neutral approach encouraging the promotion of low-carbon fuels for internal combustion engines (ICE) as well as the advancement of electrification for short-range urban mobility PTWs. PTW decarbonization policy requires separate attention from the policies for cars, to consider adequately the specifics of PTWs such as relatively small size, low weight, and limited space. Also, some alternative fuel and design modifications may induce constraints and have significant impact on handling, braking and manoeuvrability.

6. Combinations of technologies may also be envisioned e.g. hybrid powertrain configurations. WP.29 activities in this direction continue among others in the Informal Working Group EPPR on the harmonization of global environmental performance requirements under GRPE.

3. Facilitate and create the enabling conditions for decarbonization.

7. Carbon neutral road transport depends on commitment from stakeholders from diverse sectors and their successful cooperation on issues as energy sourcing, infrastructure, and distribution network. Efforts at global, regional, national and local levels are needed:

8. For example, biofuels are readily available, and their promotion and application largely depend on socioeconomic aspects and availability of natural resources. With adequate government support, biofuels can make a significant contribution to decarbonization on the short and medium term.

9. Synthetic fuels such as e-Fuels are not yet available in sufficient quantities due to their high production cost and the currently limited availability of renewable energy sources.

Investments in R&D and support from global institutions and governments are needed to make these fuels applicable, affordable and available for PTWs.

10. Institutional and government support is also needed to support EV affordability, develop technology to reduce battery size and increase their range.

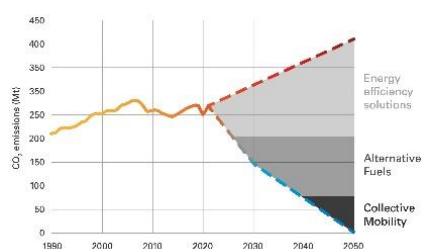
11. Urban policies will be highly influential on progress towards decarbonization. PTW-inclusive urban traffic plans are an essential component.
12. IMMA and its members continue to be engaged in the world Forum for Harmonization of Vehicle Regulations (WP.29), the Global Forum for Road Traffic Safety (WP.1) and other groups or activities under the Inland Transport Committee, as necessary or requested.

Annex VI

International Road Transport Union (IRU) Green Compact project

A realistic and cost-effective pathway to fully decarbonise the commercial road transport industry.

1. The commercial road transport industry, providing an essential service to economies and communities, is committed to fully decarbonise the sector by 2050.
2. Representing a responsible industry, IRU and its members have adopted a clear roadmap to decarbonise the industry as outlined in the IRU Green Compact.
3. The Green Compact research, tests and scales up realistic operational solutions to decarbonise commercial road transport as effectively as possible, while continuing to meet demand for passenger and goods transport services.
4. With five pillars, the Green Compact covers a comprehensive set of actions with a holistic approach, factoring in growing transport demand, regional flexibility, and energy availability.
5. There is no one single solution to reduce CO₂ emissions in road transport.



Each Green Compact pillar demonstrates varying approaches and actions depending on the economic and social development of a country, how primary energy is produced, the availability of alternative fuels and the structure of the road transport sector (size of companies, financial standing, geography), but all play a crucial role in collectively achieving net zero emissions.

6. One similarity for all regions and economies is a "duplex" approach: to both drive efficiency wins and continue to develop alternative fuel availability and infrastructure in parallel. This approach results in the most cost effective and efficient way to reach carbon neutrality by 2050.

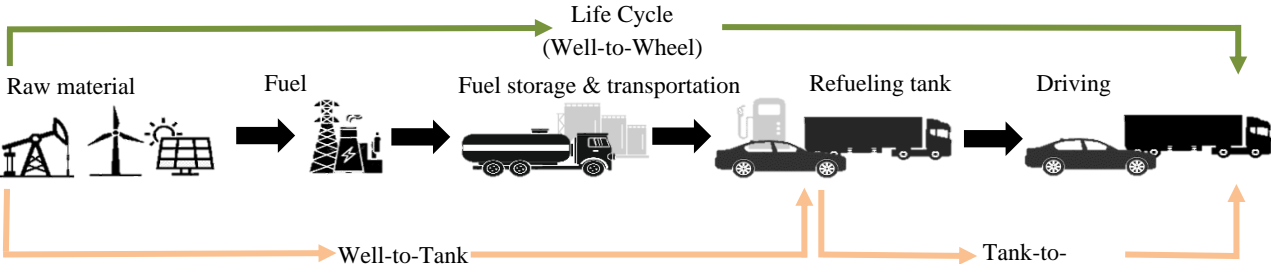
(a) **Efficiency wins:** Making logistics, vehicles, and drivers more efficient, using proven technology and approaches, has been demonstrated to reduce CO₂ emissions from commercial road transport by approximately 50%.

(b) **Alternative fuels:** New alternative fuels are also needed. The wide range of transport needs across the globe means that all types of alternative fuels are needed during the transition to 2050, including electric, hydrogen and carbon neutral fuels for internal combustion engines such as bio and e-fuels.

A technology-neutral approach is essential. Business incentives are required to expedite the penetration of clean technologies, and mitigate high upfront costs for new investments, especially by small and medium sized transport operators. Adequate alternative fuel infrastructure needs to be effectively deployed.

(c) **Collective mobility:** CO₂ emission reductions from efficiency wins and alternative fuels need to be bolstered by the switch from private to collective transport, for example to buses and coaches.

7. Tracking CO₂ emission use over time is essential to deliver carbon neutrality. This must be done using the well-to-wheel approach. A zero-emission vehicle is not truly a zero-emission vehicle until the source of its energy is carbon neutral.



8. Global coordination and open-minded policymakers with a strong disruptive political will to scale up existing pragmatic decarbonisation solutions are needed. The duplex approach necessitates action on all fronts now, both efficiency wins and alternative fuel development.

Annex VII

International Organization of Automobile Manufacturers (OICA) contribution to Carbon Neutrality by 2050

1. OICA wishes to contribute with some cues collected among members of our association, to the definition of the note on “Inputs and feedback from GRPE/WP.29 to the outline of the ITC climate change strategy and to the biennial report”.
2. We would like to propose some priorities/prerequisites required for electrification and alternative propulsion systems, and to strengthen the environmental benefits from them.
3. We would recommend ITC to pursue:
 - (a) the deployment of public and private infrastructure in line with EV adoption;
 - (b) achieve interoperability to ensure seamless customer charging experience based on common standards;
 - (c) bi-directional charging, especially for LDV:
 - (i) Will enable a more effective power distribution grid with lower peak loads
 - (ii) Will enable a higher energy mix of renewable energy sources
 - (iii) Harmonized regulations and standards, based on clearly identified use and business cases, to ensure electric vehicle grid integration;
 - (d) the use of all possible alternative carbon neutral fuels, especially for Heavy Duty vehicles, able to reduce the carbon footprint, also looking at carbon neutral Hydrogen and relative development of suitable infrastructures;
 - (e) the promotion of alternative mobility solutions, establishing effective communication between different working groups, essential to develop sustainable transport systems, and to achieve significant GHG emission reductions.
4. OICA also recommends emphasizing the work done in the Automotive-LCA working group under UNECE: Overarching international guidelines for vehicle LCA methodology are urgently needed and any further national approaches not in line with this UNECE activity should be avoided. For effective decarbonization of automotive products, cooperation along the whole value chain is essential and requires an internationally harmonized and practical LCA methodology, including a definition of the responsibility of each stakeholder of an automotive product life-cycle stage.
5. Another reflection, from OICA point of view, is linked to the topic of the Heavy-Duty Fuel Economy.
6. We have made some attempts in the past to draw the attention of the GRPE to the importance of having harmonized procedures in the framework of the UNECE, proposing the creation of an IWG dedicated to the development of a GTR related to measurement methodologies.
7. Unfortunately, at that time, none of the contracting parties showed interest in becoming the main sponsor of this activity, so the topic, despite still being on the GRPE agenda, remained without a concrete outlet.
8. It is hoped that input to the ITC on the need for harmonization of standards for HD fuel consumption will improve this situation and facilitate intergovernmental harmonization activities.
9. A last point, addressing the topic of trying to achieve more efficient type approval procedures.
10. As OICA we see that there are pretty much always new additional tests added but only very rarely is something removed, even where the tests are pretty much outdated.

11. The broader application of alternative procedures (as for example we have in UN-R154 Level 1a) could make type approval more efficient and by doing so reduce GHG emissions during the type approval process.

12. More information can be found in OICA position paper on carbon neutrality by 2050: <https://www.oica.net/wp-content/uploads/OICA-Position-Paper-on-Carbon-Neutrality-by-2050-NOV2022.pdf>
