Submission by the Partnership on Sustainable Low Carbon Transport (SLoCaT) on behalf of the Paris Process on Mobility and Climate (PPMC) and the SLoCaT membership

Talanoa Dialogue Submission

Question 1 – Where are we?

1. Where are we?

A. The <u>commitment (planned and/or announced)</u> as well as the <u>actions taken</u> so far that are in line with aims of Paris Agreement, the 1.5/2 degrees' goal and the transition towards a net-zero emission society by this mid-century

The transport sector (including aviation and shipping) in 2016 accounted for 7.5 Gt of CO_2 emissions (tank to wheel). It occupies about 28% of global final energy demand, 14% of economy-wide global anthropogenic greenhouse gas (GHG) emissions, and about 23% of emissions due to fuel combustion (Gota et al. 2018).

Transport is currently off-track to meet Paris Agreement targets, with emissions projected to rise in most global Business As Usual (BAU) scenarios, likely up to 13.6 Gt (ITF 2017) and potentially up to 18 Gt by 2050 under an average scenario (Gota et al. 2018) This increase would mainly stem from emissions growth in middle-income countries, although per capita emissions in high-income countries would still be three times as high. BAU transport projections would be roughly 3.5 times higher than a 2-degree scenario (2DS) goal and more than nine times higher than a 1.5-degree scenario (1.5 DS) goal (*Figure 1*).

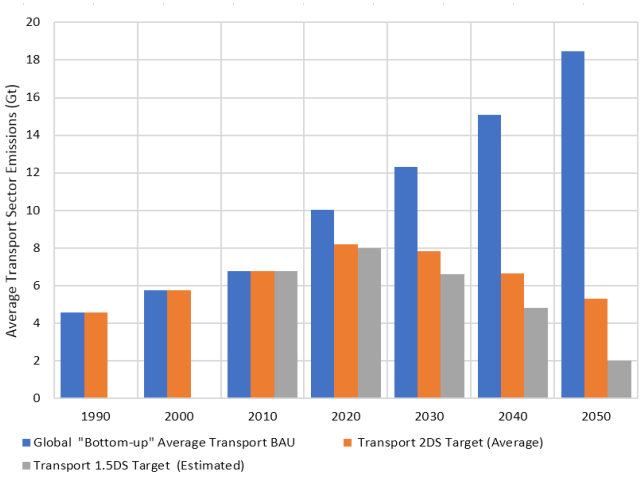

Figure 1: Transport Emission BAU Estimates and 2DS-1.5DS Targets

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There is growing evidence, though, that transport can help reverse current emissions trends, based in part on recent announcements on scaled up ambition. Since transport infrastructure related decisions "lock-in" transport demand for decades to come, policy decisions in the next two to five years will determine whether we are set on a course for a low-carbon transport future (Gota et al. 2015). However, analysis of the Nationally Determined Contributions (NDCs) targets indicates that implementation of currently proposed economy wide targets and measures proposed within NDCs will not keep emissions within a 2DS (for both economy-wide and transport-specific emissions) (Gota et al. 2016).

Nearly three quarters of NDCs propose transport sector mitigation measures, though a much smaller number include transport emission reduction targets (GIZ 2017). Passenger transport is well-represented in NDCs, included in 91% of NDCs identifying specific transport modes. Urban transport measures are mentioned in 74% of NDCs, while other areas receive less attention. Freight contributes around 40% of emissions but appears in only 29% of NDCs with transport measures (Gota, et. al 2016) (*Figure 2*).

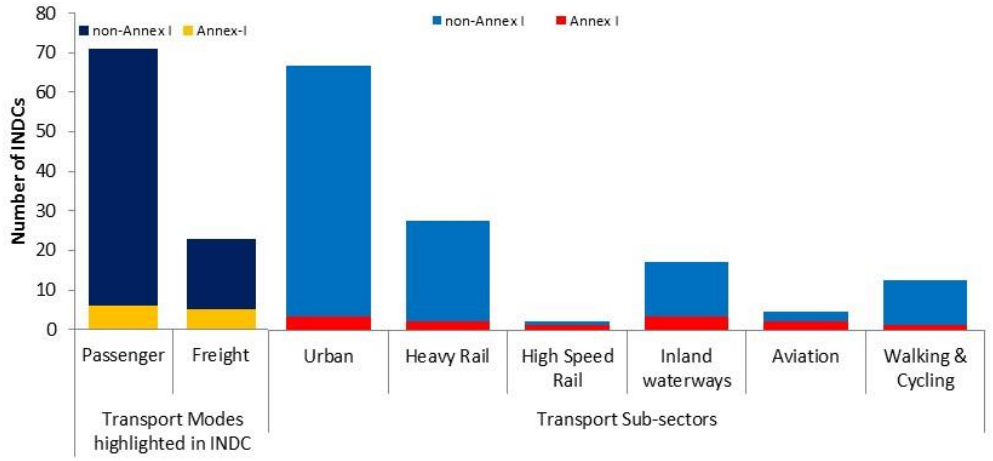

Figure 2: Share of Mitigation Measures in NDCs by Mode and Sub-Sector

Transport adaptation has received less attention than mitigation in NDCs. Though economy-wide adaptation is included in 160 INDCs, transport adaptation appears in only 16% of NDCs, and only 4% of NDCs identify specific transport adaptation measures (e.g. infrastructure resilience projects).

Long-term emission development strategies are essential for setting low-carbon transport trajectories to 2050. However, only 7 countries have long-term strategies submitted to the UNFCCC to date, and submissions are largely from the global North (with the exception of Benin). All long-term strategies cover transport, and Canada, France and the United States define transport mitigation targets for 2050, while Germany has a sector target for 2030.

B. Progress made so far against the above commitments, including success stories, case studies and gaps

The 21 Marrakech Partnership for Global Climate Action (MPGCA) initiatives are supporting early implementation of transport commitments. To illustrate the actions of one of the MPGCA initiatives, as of June 2017, examples of implementation could be reported in nearly all of the 80 cities that had pledged 350 actions under the International Association of Public Transport (UITP) Declaration on Climate Leadership since the UN

Climate Summit 2014, covering 73% of the interventions, an increase of 54% compared with 2016. UITP will work with cities to build capacity to report which can provide substantial input and insights for COP24 and the High Level Political Forum (HLPF) in 2018, which will review SDG target 11.2 on sustainable cities (UITP 2017).

Success stories in implementing low-carbon transport measures are well-documented. Progress toward implementation of NDC transport measures was highlighted by several countries in the UNFCCC NDC Spotlight series (e.g. 20% of new cars sold in Norway in 2017 were electric vehicles (EVs), relative to an NDC target for 100% new passenger cars sold to be zero emission in 2025). Other low carbon transport successes (not directly tied to NDCs) are described under Question 3B, including high speed rail (e.g. Germany, Japan, South Korea); congestion charging. (e.g. London, Singapore); fossil fuel subsidy reform (e.g. Indonesia); and global fuel economy standards (e.g. Brazil, Canada, China, European Union, India, Japan, Mexico, Saudi Arabia, South Korea, United States).

Transport-related commitments in NDCs and other plans are largely lacking quantifiable measures of progress. Only 9% of NDCs (14 of 160) include quantified transport emission reduction targets, and thus, it is difficult to assess ongoing progress in the transport sector (Gota, et. al 2016). National Communications submitted under the United Nations Framework Convention on Climate Change (UNFCCC) are an important channel to measure progress, but often reveal significant lags between collecting emission data and publishing national reports. Further, pre-2020 actions are focused more on intention than implementation.

Transport is underrepresented among climate finance instruments (CFIs). The share of transport projects among total projects by climate finance instruments (CFIs) varies from 0.6% for the Clean Development Mechanism (CDM), 1.8% for the Global Environment Facility (GEF), 3.2% for the International Climate Initiative (IKI) and 8.7% for the Clean Technology Fund (CTF). The activities of CFIs are still very limited for transport, and they have yet to emerge as significant contributor toward Sustainable Development Goals (SLoCaT 2016).

The **Multilateral Development Bank (MDB) Working Group on Sustainable Transport (WGST) is committed to increase support to more sustainable transport investments.** Under a 2012 Joint Statement the MDB WGST committed to provide more than US$175 billion of loans and grants for transport in developing countries over the coming decade (2012-2022) and the MDBs are currently on track to meet this commitment.

C. Quantitative impact so far with respect to mitigation, adaptation, resilience and/or finance

Oil is the primary fuel for passenger and freight transport by road, water and air, and accounts for nearly 95% of global transport fuel combustion (BP 2018). Electricity share in transport energy consumption has only increased marginally over 15 years, i.e. from 0.7% in 2000 to 1% in 2015. The main exception is railways which are powered by a significant share of electricity, i.e. about 39% by electricity compared to 56% by oil products (IEA and UIC 2017).

From 2005 to 2015, passenger transport energy intensity reduced by 27%, while the freight transport energy intensity reduced by only 5%. All modes of passenger transport show improvement, with light-duty vehicles (LDVs) showing least progress; however, significant heterogeneity exists among LDVs in relation to fuel economy in OECD countries, with Europe and Japan more efficient than Australia, Canada and the United States in 2015 (GFEI 2017).

Historically, growth in transport carbon dioxide (CO_2) emissions closely correlated to growth in income; however, there is evidence for weakening of this correlation. From 1970 to 2000, gross domestic product (GDP) increased with an annual average growth rate of 3.3%, while the transport CO_2 emissions increased at a rate of 2.4%, while post-2000, GDP and transport emissions have grown at an annual rate of 2.7% and 1.1% respectively (*Figure 3*).

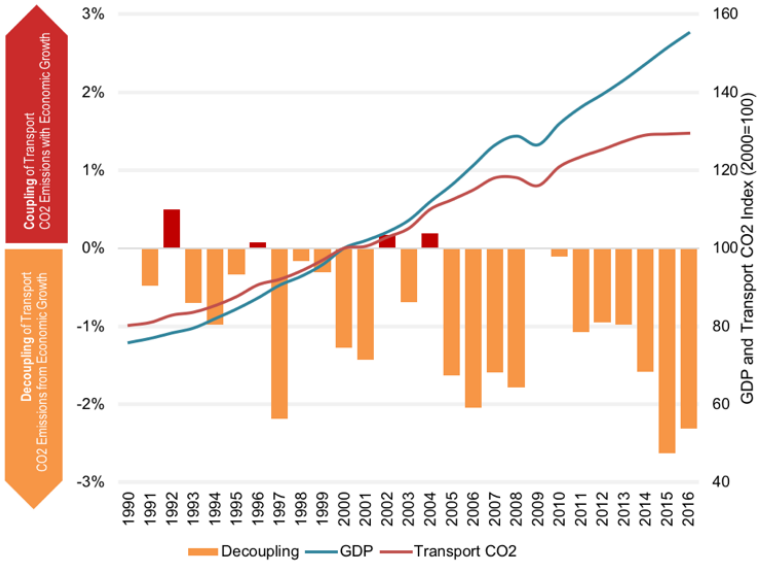

Figure 3: Low Carbon Transport Emission Trajectories

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Question 2 - Where do we want to go?

2. Where do we want to go?

A. Vision of the future for your organization and/or sector in terms of its possible role in achieving the 1.5/2 degrees' goal and a net-zero emission world by this mid-century

Transformational change for transport is required to deliver on the sector's potential contribution to achieving a 1.5-degree target. Transport has the potential to decrease emissions to about 2.5 Gt by 2050 under an *optimistic* low carbon scenario (representing an ambitious, pro-active implementation of low carbon transport), according to a tiered analysis of country-level mitigation potential studies (Gota et al. 2018). This is in the range of the estimated 2.0 Gt of transport emissions in 2050 required to achieve a 1.5DS, based on a *proportional* contribution, noting that the transport pathway will be highly dependent upon other sectors in each country (*Figure 4*). For example, Germany's long-term strategy has an overall 2050 target of an 80-95% reduction compared to 1990 (based on EU's GHG goal), and transport has a 2030 target of a 42% reduction compared to 1990 (BMUB 2017).

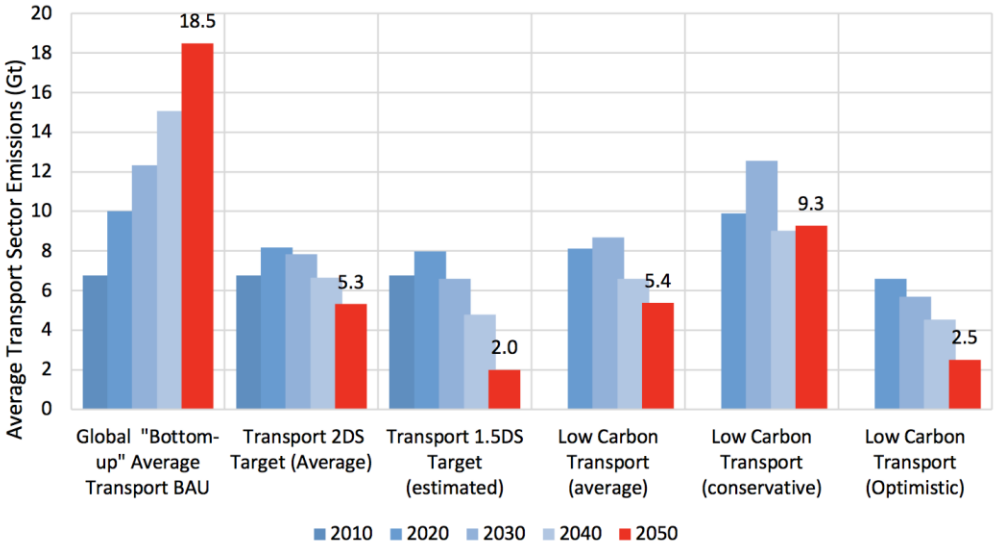

Figure 4: Low Carbon Transport Emission Trajectories

To deliver significant emission reductions, fleet electrification must be broadly deployed in parallel with the decarbonisation of power generation. Carbon-intensive electricity grids offset potential reductions (e.g. in China, electric cars are still more CO_2 intensive than diesel cars (IEA 2017)). If all subsectors of road transport were electrified by 2050 in combination with a decarbonised grid and hydrogen supply, a 1.5DS could be reached; however, it is by no means certain yet that the rapid deployment of EVs and parallel decarbonisation of energy

supply will be realized under the required timeframe. (Gota et al. 2018). Bio-fuels and sustainable synthetic fuels must also be mainstreamed, especially for applications requiring high energy density fuels. Shipping could achieve decarbonization by 2035 with current technologies (e.g. alternative fuels, renewable energy, energy efficiency) (ITF 2018), and sustainably sourced bio-fuels could lead to significant GHG reductions for aviation (IRENA 2017).

B. Possible and potential new commitments and pledges of to achieve the 1.5/2 degrees' goal and a net-zero emission world by this mid-century

Improving the probability of reaching a 1.5DS target will require higher ambition and more comprehensive measures in low-carbon transport plans. This will involve defining and implementing a balanced set of strategies to 'Avoid' unnecessary transport trips; to 'Shift' existing trips to more efficient means, and to' Improve' those trips that are not easy to 'Avoid' or 'Shift' (as shown in the following *examples*). 'Avoid' measures can reduce travel volume by 10% in 2050 and lead to infrastructure cost-savings of at least US$ 15 trillion globally (Dulac 2013).

'Avoid' measures: Economic instruments, compact planning, sharing schemes. In addition to carbon pricing, other economic instruments such as electronic road pricing, parking policies, CO_2-based vehicle taxation, number plate auctioning and fuel prices have proven their effectiveness in reducing kilometers travelled or accelerating adoption of low-carbon vehicles. It is expected that front runner countries could put these measures in place by around 2020, and that 'fast followers' could do the same soon after 2025. To fully realize the 'Avoid' potential, economic measures should be supplemented by compact integrated urban planning strategies, and policy frameworks could be adopted to advance Shared Mobility Principles and practices (PPMC 2017) .

'Shift' measures: 'High Shift' scenario to public transport, walking, cycling. Urban transport accounted for about 2.3 Gt of CO_2 in 2010, more than one quarter of carbon emissions from transport. Rapid urbanization— especially in countries like China and India— could cause these emissions to nearly double worldwide by 2050 under BAU. A 'High Shift scenario' for increased use of public transport, walking, and cycling could eliminate about 1.7 Gt of CO_2 annually (a 40% reduction of urban passenger transport emissions), which would cut these emissions cumulatively by about 25% by 2050 (Replogle and Fulton, 2014). A High-Shift Scenario is projected to save more than US$100 trillion in public and private capital and operating costs worldwide. Another example is shifting freight to more efficient modes. Bangladesh, where road transport dominates freight, established a target of 10% for rail and 20% for inland waterways from 2009-2014. Continuing this policy to achieve mode shares of 25% rail and 25% inland waterways by 2050 could reduce transport CO_2 emissions 23% below BAU by 2050 (Gota and Anthapur 2015).

'Improve' measure: Electric mobility, higher energy efficiency modes, renewable energies To achieve a 1.5DS, studies indicate that passenger cars must be almost completely electrified by 2050 (with the last fossil fuel-driven passenger cars to be sold in 2030-2040) (Lindegaard et al. 2014), and to achieve a 2DS, about 40% of the passenger fleet (i.e. nearly 1 billion vehicles) would need to be electric by 2050 (IEA 2016d). IEA has estimated that to reach net-zero GHG emissions from transport shortly after 2060, the global EV stock must reach 25 million by 2020 and must exceed 200 million by 2030, and by 2060 EVs would need to account for 85% of global vehicle stock (Gota et al. 2018; IEA 2017). A transition to electric freight vehicles could reduce fuel life-cycle emissions by 80%, and it is expected that by 2030 heavy-duty electric vehicles will cost 30% less than diesel vehicles (Moultak et al. 2017).

C. Foreseen positive impact of these commitments once they are realized, including contributions to the sustainable development agenda

Climate change is still generally not acknowledged as the most important driver in policymaking on transport and investment related decisions in many countries, especially the developing world. Emphasizing linkages to more immediate and tangible sustainable development priorities (e.g. clean air, congestion, access, cost savings) can help to accelerate low-carbon transport investments.

The MPGCA Transport Initiatives represent a range of multi-stakeholder coalitions working to reduce emissions from all modes of transport and to strengthen resilience of transport infrastructure. These initiatives, if supported by state-and non-state actors and implemented at scale, could reduce the carbon footprint of an estimated half of all passenger and freight trips by 2025. Clear linkages exist between the 21 MPGCA Transport Initiatives and the transport-related SDG targets under the 2030 Agenda for Sustainable Development, with the strongest linkages existing between these initiatives and SDG Targets 3.9 Air Pollution, 7.3 Energy Efficiency, 9.1 Sustainable Infrastructure, 11.6 Sustainable Cities, and 13.2 Climate Change Mitigation *(Table 1).*

MPGCA Transport Initiatives	SDGs (Direct Targets)					SDGs (Indirect Targets)						
	3	7	9	11	12	2	3	6	11	12	13	13
	3.6 Road Safety	7.3 Energy Efficiency	9.1 Sustainable Infrastructure	11.2 Urban Access	12.c Fuel Subsidies	2.3 Agricultural Productivity	3.9 Air Pollution	6.1 Access to Safe Drinking Water	11.6 Sustainable Cities	12.3 Food Loss and Waste	13.1 Climate Change Adaptation	13.2 Climate Change Mitigation
Airport Carbon Accreditation		■	■				■					■
Aviation's Climate Action Takes Off		■										■
below50	■	■	■	■	■		■		■			■
C40 Cities Clean Bus Declaration		■	■	■			■		■			■
Cycling Delivers on the Global Goals	■		■	■			■		■			■
EcoMobility Alliance	■	■	■	■	■		■		■		■	■
EV100		■					■		■			■
GFEI		■			■		■		■			■
Global Green Freight Action Plan		■	■		■		■		■			■
Global Sidewalk Challenge	■		■	■					■			■
Global Strategy for Cleaner Fuels and Vehicles		■					■		■			■
ITS for the Climate	■		■	■			■		■			■
LC2RTI			■	■			■		■	■	■	■
MobiliseYourCity	■	■	■	■	■		■		■			■
Navigating A Changing Climate			■				■				■	■
Taxis4SmartCities	■	■	■	■	■		■		■			■
TUMI	■	■	■	■	■		■		■		■	■
UEMI		■	■				■		■			■

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UIC Low-Carbon Sustainable Rail Transport Challenge												
UITP Declaration on Climate Leadership												
ZEV Alliance												

Table 1: Linkages between MPGCA Initiatives and Sustainable Development Goals and Targets

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Question 3 - How do we get there?

3. How do we get there?

A. Ways in which the UN Climate Change process can help you achieve your vision and goals, and how your actions can help in expediting sustainable transitions to climate neutral societies

Transformational change in the transport sector will require clear incentives for a rapid and sustained rollout of sustainable low carbon transport measures within developed and developing countries. The UN Climate Change process can help to achieve this vision by promoting discussion among Parties of adopting the below strategies on a broad geographic scale (e.g. through the Technical Expert Meeting process, through endorsement of country, city and company decarbonisation roadmaps, and through sector-specific dialogues between Parties and non-State actors). Non-state actors have developed actionable roadmaps for resilience and decarbonization; what is needed now is a quick adoption by Parties of suggested action plans. In addition, national and sub-national policymakers can boost implementation of short-term quick wins and long-term roadmap components (e.g. by including low-carbon transport strategies in NDCs and enacting enabling legislation to facilitate implementation at local levels).

The Quick Wins on Transport, Sustainable Development and Climate Change (Peet et al. 2016) **offer a course of immediate bold and ambitious action to kick-start the transformation of the transport sector and limit the lock-in effects of a high-carbon business-as-usual scenario.** A list of 20 transport quick win actions have been proposed for implementation at scale in the pre-2020 period, which set a proper trajectory for the global roadmap on transport decarbonization described above. These actions have the potential to reduce carbon emissions, while providing key development co-benefits such as improved access, increased efficiency, and enhanced safety.

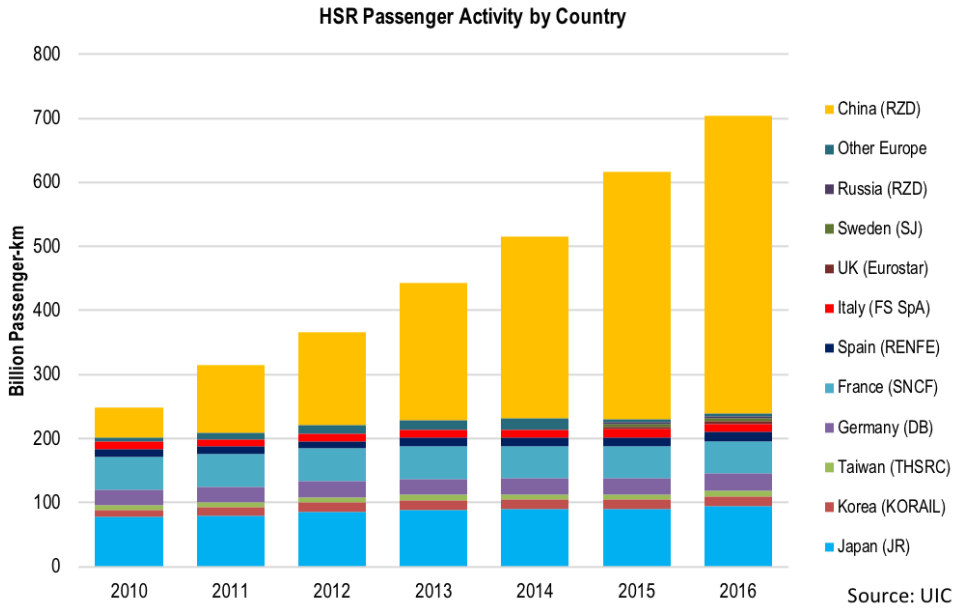
To scale up action and meet the Paris objectives, the PPMC has crafted a global macro roadmap with a goal to achieve a net-zero emissions transport sector by 2060-2080. This roadmap presents a technically feasible vision in eight components (e.g. urban transformation, low-carbon energy supply, modal efficiency, optimized supply chains, unnecessary travel reduction, rural solutions, adaptation investments, and economic instruments) that are coordinated through a phased action process. The roadmap contains an operational focus for all transport segments (people/freight; urban/rural; road/rail/aviation/shipping). The roadmap is designed to be applicable to all regions (with Europe/Africa roadmaps in the works) and Morocco has adapted a country-level roadmap (Growing Markets 2018). India and Kenya are next in the list of early adopters.

Other areas in which UNFCCC can contribute include support for an expanded set of MPGCA Transport Initiatives to accelerate implementation of tested low carbon transport solutions (as described under Question 2C above) and continued engagement in the Transport Decarbonization Alliance (TDA) to demonstrate that net-zero emission mobility before 2050 is achievable in some regions through bold joint leadership on low carbon transport from countries, cities, and companies (as described under Question 3C below).

B. Concrete solutions that have been realized while implementing your commitments, including lessons learnt from success stories and challenges, and case studies that are in line with the 1.5/2 degrees' goal and can support the Parties in achieving their NDC goals, enable higher ambition and inspire engagement of other non-state actors

Policy responses been successfully implemented in developed and developing countries, demonstrating the potential of the transport sector to contribute to rapid steps toward decarbonization on a global scale. There is no silver bullet to decarbonize transport, instead it is a range of strategies that have to be embraced in a comprehensive manner covering all modes of transport. Following are some key examples for illustration.

High speed electric rail (HSR). HSR activity, initially developed in France and Japan, has risen sharply in China since 2000 and has expanded in other markets including broader Europe, Germany, Japan, and South Korea. In 2016, China HSR activity exceeded 450 billion passenger-kilometers.



Increased bicycle use to reduce urban transport emissions. Cycling as a fully-fledged means of transport is underrepresented in most cities, while urban transport demand and emissions are increasing rap idly. To increase priority of cycling as a mode of transport, many cities are taking active measures to improve bicycle infrastructure and increase bicycle use. For example, 15 km of bike lanes were built in the Ukrainian city of Lviv in line with German recommendations for construction of biking paths, and more than 20 Ukrainian cities are implementing strategies for improved bicycle traffic based on guides and best practices in cycling strategy (GIZ 2018).

E-mobility. Increasing targets to scale up e-mobility are complemented by pledges/targets to phase out sales of new internal combustion engine (ICE) vehicles (or to ban them outright), with most current targets on a 2025-2040 timeframe. China, France, Japan, South Korea are leading the production of EVs, and charging station infrastructure and incentives to buy EVs are a key complement, with Norway setting an ambitious example.

Low emission zones (LEZs), congestion charging, and zero emission urban freight. Following Tokyo, a few hundred cities have now successfully implemented LEZs to restrict ICE use. After implementing congestion

charging in 2003 and LEZ in 2008 (along with complementary transit improvements), London's public transport share increased from 25% to 37% from 1995-2015, while its private vehicle share decreased from 49% to 36%. Singapore's introduction of congestion pricing in the 1970's contributed to reducing vehicle-km by 16% by 1998 and reducing transport CO_2 emissions per capita by 21% from 1991-2014. Zero-emission last-mile delivery systems have large potential as well, as urban freight is responsible for 6% of CO_2 emissions in European cities (CIVITAS 2015) and up to 50% in Chinese cities (Herzog 2015). Deutsche Post DHL's GoGreen program has introduced cargo bicycles in 58 cities in Europe, and 10% of DHL Express services are already handled on bicycles (Hannappel 2017).

Fossil fuel subsidy reform. Under the Paris Agreement, 80% of all proven fossil fuel reserves will be made uneconomical by regulation or technological change; thus, fossil investments risk becoming stranded assets. Indonesia's fossil fuel subsidies reforms in 2015 resulted in savings of US$ 15.6 billion, or 10% of the state budget. Savings were used to increase government resources towards infrastructure needs including the Ministry of Transport's budget which increased by 45%, focusing on transport to remote areas. (Pradiptyo et al. 2016). It is estimated that fossil fuel subsidy removal could reduce global CO_2 emissions about one third (Stefanski 2014).

Global fuel economy CO_2 emission standards. Currently 10 governments (including the European Union) have established fuel economy (or CO_2 emission standards) for light duty vehicles. These are Brazil, Canada, China, India, Japan, Mexico, Saudi Arabia, South Korea and the United States, as well the 28 EU countries, and other countries that follow these regulations (e.g. Norway, Iceland) (*Figure 5*). In total, these countries account for around 80% of all sales globally. Implementation of fuel economy policies improved average fuel economy of new vehicles by 20% in Organisation for Economic Co-operation and Development (OECD) countries and by 2% in non-OECD countries between 2005 and 2013, and have the potential to reduce transport CO_2 emissions by around 25% (GFEI 2016). Fewer countries have adopted standards for heavy duty vehicles (e.g. Canada, China, Japan, United States), which should be broadly deployed and strengthened to ensure significant improvements in heavy-duty vehicle (HDV) engine efficiency (GFEI 2016; Sharpe 2017). Further policies are needed to reach achievable levels of 50 gCO_2/km (well to wheel) by 2035/2040 and 25 gCO_2/km by 2050, and standards should be extended to all transport modes.

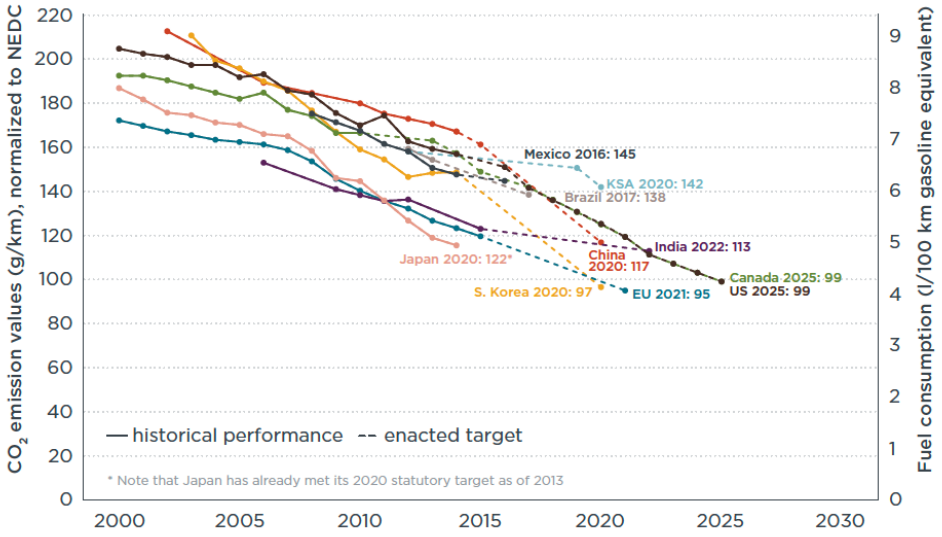


Figure 5: CO_2 Emissions Performance and Standards for Light Duty Vehicles (2000-2015)

Increasing detail and ambition of transport measures in NDCs. Transport could be given further attention in NDCs to optimize the sector's mitigation potential. As an example, the Vietnamese government aims to submit an updated NDC in 2019, and the Ministry of Transport (MoT) is furthering attention to transport data, MRV and

emissions in the context of the Advancing Transport Climate Strategies project, with support from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMUB). Though transport was listed briefly and without in-depth analysis in Vietnam's pre-Paris INDC, the MoT is aiming to set a sectoral emission reduction target and to link it directly to transport sector mitigation strategies (GIZ 2018).

C. Collaboration models with other stakeholders and, in particular, between non-Party stakeholders, national governments and the UN Climate Change process that have been successful in helping you, or can help you, achieve your commitments

Stakeholders from the public and private sector, UN organizations, MDBs, non-government organizations (NGOs) and other transport-related entities are forming collaborative mechanisms to mobilize actions on transport and climate change. These initiatives demonstrate the potential of non-state actors in implementing sustainable transport, measuring progress of transport in addressing climate change, and raising awareness of policy-makers on global processes.

The Transport Decarbonisation Alliance (TDA) is a "coalition of the willing" consisting of countries, cities/regions, and companies. By bringing together frontrunners on transport and climate, the TDA will facilitate a much-needed synergy between the transport and energy sectors. A critical mass of front runners will also help to raise ambition and accelerate action on sustainable transport through the UNFCCC and in other relevant global processes, with the aim to achieve a net-zero emission mobility system by 2050 (see also 'Lessons Learned' below).

The International Transport Forum (ITF)'s Decarbonising Transport (DT) project will provide modeling tools to help track global progress towards decarbonisation of transport. The project will help governments to close the gap between their commitments and mitigation actions and to establish commonly acceptable pathways to reduce transport CO_2 emissions by 2050. These quantitative outputs, generated from a suite of transport models developed by ITF, can be integrated into national climate mitigation strategies and can be used to support updating NDCs and long-term strategies (together with IDDRI methodologies and PPMC roadmaps).

A set of 21 multi-stakeholder MPGCA initiatives have been developed that collectively engage thousands of organizations in taking action on climate change mitigation and adaptation for a range of transport modes. As one example, the Transformative Urban Mobility Initiative (TUMI) is an initiative of the German Federal Ministry of Economic Cooperation and Development (BMZ) which intends to support activities in sustainable urban mobility towards accessible transport systems for economic growth and prosperity, and the mitigation of transport related GHG emissions, with an objective to mobilize US$ 1 billion per year for sustainable transport. In addition, the MPGCA initiatives can provide technical support and capacity building, for instance in supporting implementation of UITP public transport interventions in Annex II countries as outlined in NDCs (as described under Question 1B).

The **Sustainable Mobility for All (SuM4All) Initiative** was established in 2017 as a multi-stakeholder platform to advance sustainable mobility at global, national, and local levels. SuM4All aims to facilitate the delivery of four primary objectives of sustainable transport, including Universal Access, Efficiency, Safety, and Green Mobility, in support of the 17 SDGs, the New Urban Agenda and the Paris Agreement.

The **Multilateral Development Bank (MDB) Working Group on Sustainable Transport (WGST)** is committed to increasing support for more sustainable transport investments. Under a 2012 Joint Statement the MDB WGST committed to provide more than US$175 billion of loans and grants for transport projects in developing countries over the coming decade (2012-2022), and the MDBs are currently on track to meet this commitment, with increasing efforts to incorporate mitigation and adaptation components in transport investments.

D. Opportunities to further scale up action and means to address barriers that can enable even further action by non-Party stakeholders based on the actions you have taken to implement your commitments. ("We've made progress and have made new commitments as described above. This is what I need from national governments, other non-Party stakeholders and the UN Climate Change process to take even further action…"):

i. Policy levers

Policy makers can enact the following *short-term measures* to reduce transport emissions (as drawn from SLoCaT's transport quick win actions and other sources):

- Establish pathways for phase-out of GHG-emitting ICE vehicles (e.g. France, Norway, Netherlands, Sri Lanka, United Kingdom) and phase-in of electric/hydrogen vehicles (e.g. Chile, Indonesia, Malaysia, South Africa)
- Adopt fuel economy standards for light/heavy-duty vehicles (e.g. Brazil, Canada, European Union, Mexico, Saudi Arabia, South Korea, et al.)
- Phase out fossil fuel subsidies (and/or support global efforts for subsidy reform) and reinvest in improved transport services (e.g. Canada, Costa Rica, Finland, France, Indonesia, Netherlands, United Kingdom)
- Scale up bike-sharing systems as a low-cost strategy to increase equitable mobility (e.g. China, Portugal)
- Improve walking and cycling infrastructure to increase low-carbon travel options (e.g. Colombia, Denmark, Netherlands)
- Invest in rural road maintenance and transport services to reduce global food loss and waste (e.g. India).
- Establish monitoring systems with indicators to measure progress in the transition towards sustainable low carbon transport and mobility at regional, national and local levels

Policy makers can enact the following *long-term measures* to reduce transport emissions (as drawn from the eight components of the PPMC global macro roadmap and other sources):

- Create zero emission cities
- Improve modal and system efficiencies
- Optimize freight and logistics supply chains
- Increase low-carbon energy supply in concert with projected e-mobility demand and remaining internal combustion solutions
- Pursue transformation of urban transport and land use to drive decarbonization
- Deploy transport sector pricing mechanisms (e.g. electronic road pricing, parking policies, emissions-based vehicle taxation, number plate auctioning) on a broad scale to catalyze sectoral transformation and de-risk long term investments in low carbon technologies
- Avoid vehicle kilometers traveled through greater intermodality, shared transport, and new work patterns
- Expand low-carbon solutions for non-urban and rural populations

- ***Collaboration/cooperation opportunities:***

There is no single group of actors that can be expected to take full responsibility for the transformation of the transport sector to align it with the Paris Agreement, and a transformation cannot be achieved without strong

collective and collaborative action. An open, good-faith based collaboration between "3 C's": **countries, cities, and companies** is a pre-requisite to steer action on low-carbon transport in a pragmatic, successful direction.

Countries, as Parties to the UNFCCC, are bound by the Paris Agreement to meet the emission reduction objectives and must establish the national legal framework within which transformation of their transport sector will take place. This will be helped by coordinating national low-carbon transport frameworks at the international level, which can greatly facilitate the overall efforts of the transport sector. Additionally, in many countries, national or local governments (as owners) have more than a say in the management of transport and/or energy assets and operations. National government policies also set the stage for transport climate action by companies and cities.

Cities will play an increasingly important role in implementing new low-carbon mobility of people and the transport of goods, as the world population becomes more and more urban (an estimated ~70% in 2050). The cost of implementation and level of effort will be lower if a significant number of cities throughout the world move synergistically in a similar direction. Although cities (like companies) are not a formal Party to the UNFCCC, their experience in taking action on climate change is essential, and based on this their voices should be ampilified in shaping the global response to climate change.

Much of the significant costs for the transformation of the transport sector will need to be borne by **companies**, which are expected to invest massively in new technologies and services in the coming decades. It is also the private sector which, through the operations of multi-national companies in particular, has the potential to disseminate new low carbon transport-oriented economic and behavioral paradigms throughout the world. It is therefore critical to mobilize companies to scale up action on low-carbon transport.

The key to success for effective collaborative action among countries, cities and companies lies in creating global synergy and phasing between needed policies and required investments in sustainable transport; the United Nations, G7, G20 and other global/regional bodies can help immensely in this effort.

- ***Lessons learned based on the experience and progress so far:***

The Transport Decarbonisation Alliance (TDA) builds on statements of intent by those Heads of States, Mayors and Chief Executive Officers (CEO) that have expressed their will to decarbonise before 2050, their respective countries, cities and companies, ahead of targets set by the Paris Agreement, and have already embarked on significant moves to make this happen. The TDA does not impose any pre-determined "solution package' to reduce emissions from transport.

To help TDA members access relevant methodological frameworks and tools on transport decarbonisation the TDA proposes a “TDA ecosystem” that includes those organizations that have developed or are developing relevant guidance for TDA members. Such a TDA ecosystem is expected to be supportive without being prescriptive. In addition, a governance system that combines transparency, effectiveness, efficiency and agility, was approved at the TDA kick-off meeting in February 2018. The initial TDA governance structure will include an interim Steering Committee which amongst others will oversee efforts to increase and diversify membership over time.

The PPMC macro-roadmap has proved to be a pertinent framework for building regional adaptations (e.g. Africa) and national adaptations (e.g. France, India, Kenya, Morocco). A recent manifesto to European leaders published by the Jean Monnet Foundation also chose to use it.

- ***Public and private financing models:***

A significant change is required in almost all parts of transport related funding and financing arrangements to realize sustainable low carbon transport on the scale required for the transport sector to be in line with a 2DS. With major development needs projected for motorized economies and developing countries alike, the challenges for sustainable development are considerable, as recognized in the SDGs and UN 2030 Development Agenda. While new transport infrastructure and services will require trillions of dollars of investment, sustainable transport solutions can substantially reduce the level of investment required, leading to cost reductions over time.

Private investment has an important role to play in scaling up sustainable transport. Even with a reasonable share of available climate finance there will be a huge shortfall in transport related funding that could only come from national governments and, more importantly, the private sector. While the MDB Working Group on Sustainable Transport's US$175 billion Rio+20 Commitment (described in Section C3 above) is a helpful start, financing from MDBs and bilateral agencies, via official development assistance (ODA), will be dwarfed by the overall need. It is therefore imperative that available climate finance, as well as ODA, be used more strategically to leverage and scale-up public and private funding sources directed at developing more sustainable and low-carbon transport.

While international climate finance cannot solve all challenges to investment in sustainable transport in developing countries, it can usefully fill a financing gap through a variety of instruments. These include providing low-cost (concessional) debt financing, risk coverage through (partial risk) guarantees, and equity financing structures, which can mitigate foreign exchange exposure. It is also extremely important to finance technical assistance, project preparation and capacity building during the project development stage (Sayeg et al. 2015).

- ***Impact on non-Party stakeholders if these actions by national level governments and the UN Climate Change process and other opportunities are implemented and how much further they could go:***

While many non-Party stakeholders are ready to move toward low carbon transport paradigms, they are still waiting for Parties to formally express their resolve to move irreversibly towards a net-zero emission economy. Parties can also increase their will to offset remaining emissions that cannot easily be addressed through low carbon transport measures. In sum, stronger signals are now needed from Parties to build a level playing field to enable the transformation change in the transport sector that is required to achieve Paris Agreement targets.

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