

Transport Decarbonisation Alliance (TDA) Talanoa Dialogue Submission

2 April 2018

Note: This submission to the Talanoa Dialogue, focusing on the decarbonisation of the transport sector is made on behalf of the Transport Decarbonisation Alliance (TDA) that was established in 2017 and consists of a coalition of countries, cities/regions and companies including Costa Rica, France, Netherlands, Portugal, Alstom, ITAIPU Binacional, Michelin, and the Paris Process on Mobility and Climate.

1. Where are we?

The transport sector (including aviation and shipping) accounts for about 7.5 Gt of CO₂ emissions annually ("tank to wheel"). It occupies about 28% of global final energy demand, 14% of economy-wide global anthropogenic greenhouse gas emissions, and about 23% of emissions due to fuel combustion (Gota et al. 2018). In 2012 transport was the largest energy consuming sector in 40% of countries worldwide and the second-largest energy consuming sector in most remaining countries; thus, transport is a key sector for reducing overall emissions (Huizenga, et al. 2015).

Transport is currently off-track to meet Paris Agreement targets, with emissions projected to rise in most global 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 Celsius goal and more than nine times higher than a 1.5-degree goal. (Figure 1)

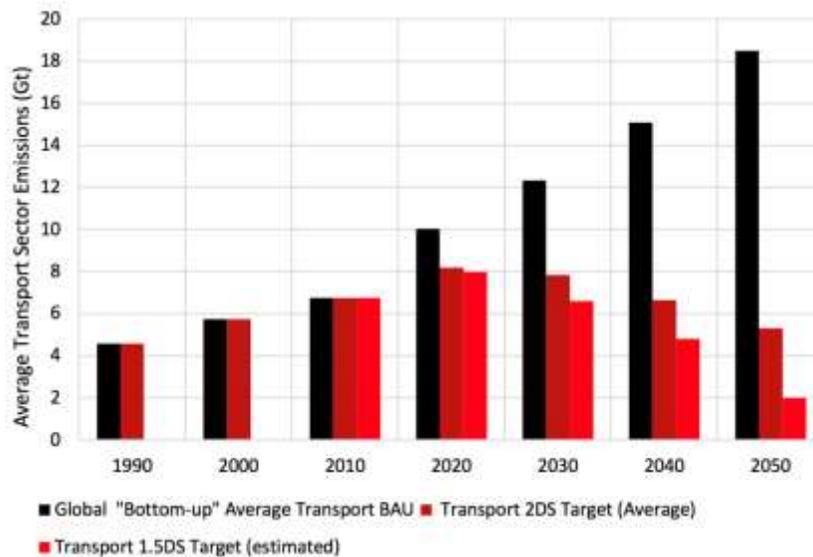


Figure 1: Transport Emission BAU Estimates and 2DS-1.5DS Targets

There is growing evidence, though, that transport can 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 NDC targets indicates that implementation of currently proposed measures will not keep emissions within a 2-degree Celsius scenario (2DS) (for both economy-wide and transport-specific emissions) (Gota et al. 2016).

2. Where do we want to go?

To achieve the 1.5-degree goal, we need to take an ambitious, pro-active low carbon transport approach, requiring a transformational change in the sector. Transport has the potential to decrease to 2.5 Gt by 2050 under an optimistic low carbon scenario, as determined in a tiered analysis of country-level mitigation potential studies (Gota et al. 2018). It is close to the estimated 2.0 Gt of transport emissions in 2050 required to achieve a 1.5-degree Celsius scenario (1.5DS) (Figure 2).

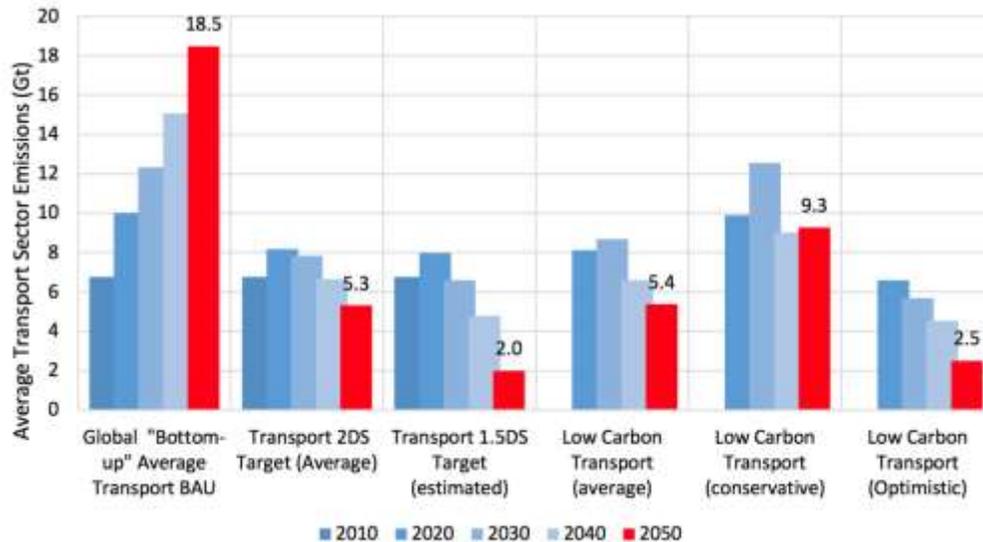


Figure 2: Low Carbon Transport Emission Trajectories

Improving the probability of reaching a 1.5-degree target will require higher ambition and more comprehensive measures in low-carbon transport plans. Realizing the full mitigation potential of transport will require the balanced implementation of low carbon policies that 'Avoid' (or reduce) the need for transport trips; promote a 'Shift' towards the most efficient travel modes; and 'Improve' environmental performance of vehicles and fuels. The chances that such a comprehensive approach is taken will increase if countries, cities and companies actively integrate sustainable development objectives in their policies on transport and climate change (Gota et al. 2018).

Climate change is generally not the most important factor in policy making on transport and investment related decisions in many countries, especially the developing world. Therefore, development co-benefits of a comprehensive set of 'Avoid,' 'Shift,' and 'Improve' measures may have greater value to policy makers than expected climate benefits (Gota et al. 2018). 'Avoid' measures alone can reduce travel volume by 10% in 2050 and lead to infrastructure cost-savings of at least USD 15 trillion globally (Dulac 2013). And accelerating a 'Shift' to public transport can reduce GHGs, air pollution and urban road congestion, while improving access and mobility.

Implementing the 17 SDGs in the 2030 Development Agenda will create the economic growth required to reduce poverty but it will also result in more demand for transport. This underscores the need for irreversible actions on transport and climate change to contribute effectively to the success of the Paris Agreement. 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.

Countries, cities/regions and companies are defining bold visions for broad expansion of low-carbon transport, through legislation and long-term planning supported by demonstrated short-term implementation successes,

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including these from entities that are members of the TDA or considering to do so (see additional examples under Question 3A):

- **Portugal** has introduced a country wide network of 1400 EV charging points, legislation to stimulate additional private charging points, and adopted regulations and fiscal incentives to expand car and bike sharing, along with public policies for public transport GHG emissions reduction.
- **France** hosted the One Planet Summit (with a commitment on zero-pollution transport) and carried out a participatory approach to identify transport policy priorities to accelerate the sector's ecological transition ("Les Assises de la Mobilité"). A similar participatory approach has recently been launched for the aviation sector.
- **The Netherlands** has submitted a letter to 7 EU states with request to raise ambition on transport, and has demonstrated best practices in electric buses, electric taxis and charging points at Amsterdam Airport Schiphol
- **Porto, Portugal** has created a Sustainable Energy Action Plan including mobility options (e.g. public transport, cycling/walking) to reduce CO₂ by 45% and has initiated a process to replace fossil fuel with electric vehicles
- **Rotterdam, Netherlands** has developed a Sustainable Urban Mobility Plan (e.g. water transport, car sharing) and has adopted a "local fuel vision" for its city (e.g. construction vehicles) and harbor (e.g. bio-based industry)
- **Alstom** has introduced the [Coradia iLint](#), the world's first hydrogen fuel cell-powered passenger train for use on non-electrified lines.
- **CEiiA** has designed [mobi.me](#), an integrated management platform for all urban mobility services with a real-time system to measure GHG avoided emissions and an agnostic and universal system that connects the electric energy suppliers to the charging point operators and to the billing system for each EV user
- **Itaipu Binacional/PTI** is conducting R&D in hydrogen and battery technologies and is working together with Foz do Iguacu City Hall to develop and implement an urban mobility plan guided by sustainability principles
- **Michelin** has created Open Lab, an innovative and collaborative "Think and Do Tank," aimed at promoting a better life through sustainable mobility, and has tested an internal carbon price for investments since 2016

3. How do we get there?

A. Conceptual Frameworks for Transport Decarbonisation:

The Paris Process on Mobility and Climate (PPMC) (a joint initiative of Movin' On by Michelin and SLoCaT Partnership) has crafted a comprehensive [global macro roadmap](#) (GMR) to reach a net-zero emissions transport sector by 2060-2080. The roadmap presents a technically feasible vision in eight components coordinated through a phased action process (*Figure 3*). The roadmap contains an operational focus for all transport modes (i.e. people/freight; urban/rural; road/rail/aviation/shipping) and is designed to be applied to all regions (e.g. Europe, Africa roadmaps in the works). Morocco has adapted a [country-level roadmap](#) (Growing Markets 2018) and other national, city and company roadmaps for decarbonisation are envisioned.



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Figure 3: Eight Components of Global Macro Roadmap on Transport Decarbonisation

The GMR provides a global framework to achieve a net zero-emission transport sector, considering the Paris long term horizon to inform short- and middle-term conditions enabling structural changes of transport (PPMC 2017). In addition to this comprehensive vision, the decision-making process can be informed by modelling tools and approaches developed to investigate specific aspects related to transport decarbonization and deliver relevant quantitative insights supporting concrete implementation of the Paris objective. The International Transport Forum's Decarbonising Transport project can help governments close gaps between commitments and mitigation actions, through quantitative outputs that can be integrated into national climate mitigation strategies and used to support updated NDCs. Participants in the World Wildlife Fund's Science-Based Targets initiative (Science-Based Targets Initiative 2015) are considering ambitious 2050 transport emissions targets with development co-benefits; realizing these targets will require detailed short- and medium-term milestones for a range of low carbon measures. The Deep Decarbonization Pathways Project for Transport developed by IDDRI analyses Paris-compatible strategies for passenger transport that can inform the 2018 Talanoa Dialogue and preparation of more ambitious NDCs by 2020.

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, to accelerate progress to transport decarbonisation as described in the GMR. These actions have the potential to reduce carbon emissions, while providing key development co-benefits such as improved access, increased efficiency, and enhanced safety.

Policy makers can enact a range of short-term decarbonisation projects to reduce transport emissions (examples from TDA members/participants in bold):

- Establish pathways for phase-out of internal combustion vehicles (e.g. **France**, Norway, **Netherlands**, **Portugal**, Sri Lanka, United Kingdom) and phase-in of electric/hydrogen vehicles (e.g. Chile, **France**, Indonesia, Malaysia, South Africa) in both the road and rail sectors
- Adopt fuel economy standards for light/heavy-duty vehicles (e.g. Brazil, Canada, European Union, Mexico, Saudi Arabia, South Korea)
- 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, **Netherlands**)
- Invest in rural road maintenance and transport services to reduce global food loss and waste (e.g. India).

UNFCCC [pre-2020 action commitments](#) can be aligned with transport quick wins to bridge implementation and ambition. Transport is highlighted in a number of these commitments, including those from Argentina, Brazil, Indonesia and Morocco.

B. Collaborative Mechanisms for Transport Decarbonisation

The Transport Decarbonisation Alliance (TDA) brings together countries, cities/regions and companies ("3 C's") as the major drivers in sustainable, low carbon mobility, who want to form a "coalition of the willing" to accelerate the global transformation of the transport sector towards a net-zero emission mobility system before 2050. The TDA has the ambition to become the most visible and influential forum for public and private cooperation and to be the game changer that will ensure the transport sector's contribution to the Paris Agreement's objectives. The TDA builds on the commitments and the stated ambition of Heads of States, Mayors and CEOs to decarbonize transport before 2050, targeting emissions from all modes of passenger mobility and freight transport, including land transport, aviation and maritime transport.

A transformation of the transport sector consistent with Paris Agreement targets cannot be achieved without strong collective and collaborative action. An open, good-faith based collaboration between countries, cities, and

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companies is a pre-requisite to steer action on low-carbon transport in a pragmatic, successful direction. The TDA will bring together these “3 C's” to identify and deploy scalable solutions consistent with objectives and constraints of participating entities, without impose pre-determined "solution packages" to reduce emissions from transport.

Countries are bound by the Paris Agreement to meet the emission reduction objectives and 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. The cost of implementation and level of effort will be lower if a significant number of cities, throughout the world, move synergistically in the same coherent direction. Much of the cost of transport sector transformation will need to be borne by **companies**, which are expected to invest massively in new technologies and services. The private sector also has the potential to disseminate low-carbon transport oriented economic and behavioural paradigms throughout the world, in particular through the operations of multi-national companies.

The TDA is composed of like-minded entities committed to ambitious action on transport and climate change, with a phased membership to be organized around the following commitments:

- Making a public commitment to take action to decarbonise transport before or by 2050, and to develop ambitious short- (i.e. 2020); medium- (i.e. 2030-2040); and long-term (i.e. 2050) strategies and actions;
- Providing up-to-date public information about objectives, actions, progress and experiences in decarbonising transport, particularly along the overall principles and directions of the GMR on transport decarbonisation
- Sharing information and experiences about transport decarbonisation activities with other TDA members;

The TDA can help to accelerate transformation of the transport sector in concert with complementary initiatives such as:

- 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 and to facilitate the delivery of four primary objectives of sustainable transport, including Universal Access, Efficiency, Safety, and Green Mobility.
- The [MPGCA Transport Initiatives](#) represent a range of coalitions to reduce emissions from all transport modes and strengthen resilience of transport infrastructure.

These initiatives, if supported by state-and non-state actors and implemented at scale, can reduce the footprint of an estimated half of all passenger and freight trips by 2025.

References

Dulac, J. (2013). Global Land Transport Infrastructure Requirements. Estimating Road and Railway Infrastructure Capacity and Costs to 2050. Retrieved from <https://bit.ly/2pBKj4K>

Gota, S., Huizenga, C., Peet, K. & Kaar, G. (2015). Emission Reduction Potential in the Transport Sector by 2030. PPMC. Retrieved from <https://bit.ly/2pvZKwi>

Gota, S., Huizenga, C., Peet, K. & Kaar, G. (2016). Nationally-Determined Contributions (NDCs) Offer Opportunities for Ambitious Action on Transport and Climate Change. Retrieved from <https://bit.ly/2IMA8mH>

Gota, S., Huizenga, C., Peet, K., Medimorec, N. & Bakker, S. (2018). Decarbonising Transport to Achieve Paris Agreement Targets. Energy Efficiency (accepted for publication).

Growing Markets (2018). Project Feuille de Route pour une Mobilité Durable au Maroc. Retrieved from <https://bit.ly/2FZxOuX>

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Huizenga, C., Peet, K., Gota, S. (2015). Analysis on National Transport Sector Emissions 1990-2012. Retrieved from <https://bit.ly/2ydEz42>

Peet, K., Huizenga, C., Gota, S. & Major, M. (2016). Quick Wins on Transport, Sustainable Development and Climate Change Kick-starting the Transformation of the Transport Sector. <https://bit.ly/2G4nPQW>

PPMC (2017). A Global Macro Roadmap Outlining an Actionable Vision Towards Decarbonised, Resilient Transport. Retrieved from <https://bit.ly/2FW8jux>