



Global Climate Action Agenda (GCAA) Transport Initiatives: Stock-take on action on the Implementation of the Paris Agreement on Climate Change and contribution towards the 2030 Global Goals on Sustainable Development

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List of Abbreviations

2DS	Two-Degree Scenario
ACA	Airport Carbon Accreditation
ACI	Airports Council International
A-S-I	Avoid-Shift-Improve
ATAG	Air Transport Action Group
BMUB	German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
CO2	Carbon dioxide
COP	Conference of the Parties
C40	C40 Cities Climate Leadership Group
CAEP	Committee on Aviation Environmental Protection
ECF	European Cyclists' Federation
ESPO	European, Smart Freight Centre and Sea Ports Organisation
EuDA	European Dredging Association
EV	Electric Vehicle
FAA	Federal Aviation Administration
FFEM	Global Environment Fund
GCAA	Global Climate Action Agenda
GFEI	Global Fuel Economy Initiative
GGFAP	Global Green Freight Action Plan
GHG	Greenhouse Gas
HDV	Heavy Duty Vehicle
HLC	High Level Champions
IAPH	International Association of Ports and Harbors
IATA	International Air Transport Association

IBTA	International Bulk Terminals Association
ICAO	International Civil Aviation Organization
IEA	International Energy Agency
IHMA	International Harbour Masters Association
IMarEST	Institute of Marine Engineering, Science & Technology
IMPA	International Maritime Pilots Association
ITS	Intelligent Transportation System
Km	Kilometer
LAC	Latin America and Caribbean
LC2RTI	Low Carbon Road and Road Transport Initiative
LPAA	Lima Paris Action Agenda
MDBs	Multilateral Development Banks
NDC	Nationally Determined Contribution
PIANC	World Association for Waterborne Transport Infrastructure
PIARC	World Road Association
PPMC	Paris Process on Mobility and Climate
SDG	Sustainable Development Goal
SUMP	Sustainable Urban Mobility Plan
SLoCaT	Partnership on Sustainable, Low Carbon Transport
UEMI	The Urban Electric Mobility Vehicles Initiative
UIC	International Union of Railways
UITP	International Association of Public Transport

UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WCA	World Cycling Alliance
ZEV Alliance	International Zero-Emission Vehicle Alliance

"In the run up to the Paris Agreement there were important commitments undertaken by individual governments, but also by the world of business, by local unions and collectives, by citizens themselves, by civil society, who all played a part. So what happened in Paris on the 12th of December of last year, and that success story and the hope that we fostered compels all of us today. We need to go yet further than the promises and pledges that were made then and the undertakings that we signed up to in Paris. We need to ensure that our words become actions because since the 12th of December, the urgency has not gone away."

François Hollande (President of France), High-level Signature Ceremony for the Paris Agreement, Opening session, April 22nd, 2016

I. Introduction

A. Background on this report

This report gives an overview of 15 voluntary multi-stakeholder initiatives on sustainable, low carbon transport, the manner in which they measure progress, and their alignment with the 2030 Agenda on Sustainable Development, the UN HABITAT III outcome and the Paris Agreement. It is an update of the May 2016 report and has been prepared in advance of the Marrakech Climate Conference (COP22) to be held in November 2016. The report covers the progress of the initiatives up until 31st October 2016.

B. Background to the climate transport action initiatives

Inspired by the call to action by Secretary General Ban Ki-moon in September 2014 and followed up by the Lima Paris Action Agenda (LPAA) 15 transport initiatives were developed by non-state actors in the transport sector that were showcased during COP21 at the [Transport Focus event](#) on December 3rd, 2015¹.

COP21 also decided to appoint High Level Champions (HLC) to *"facilitate through strengthened high-level engagement in the period 2016–2020 the successful execution of existing efforts and the scaling-up and introduction of new or strengthened voluntary efforts, initiatives and coalitions"*. Following the appointment of the first two High Level Champions in May 2016 and with a view to the longer term, the LPAA was renamed the Global Climate Action Agenda (GCAA).

These commitments were developed to trigger more ambitious action in all major parts of the transport sector. The selection of the initiatives followed a scientific and systematic approach and combines a top down with a bottom up approach. The systematic top down approach was based on IPCC and UNEP reports which defined the key sub sectors where action needs to be taken to remain on a 2° pathway. The bottom up process, through which organizations were invited to propose initiatives helped us to

¹ <http://newsroom.unfccc.int/lpaa/transport/press-release-lpaa-transport-transport-industry-drive-for-improved-energy-efficiency-and-electro-mobility-to-stem-high-growth-of-emissions/>

understand the initiatives that stakeholders are proposing. The underlying idea of the GCAA was to make sure all key sectors were covered with impactful initiatives, which could be joined by states as well as non state actors, so that the global ambition of countries to act on climate change can be scaled up. The GCAA is planned to be a living process: some initiatives might be added as they mature or as gaps are identified; some might exit.

There are now 15 initiatives which include both passenger and freight transport and touch on all transport sectors and modes: from roads to rail, from air to waterborne transport, and from motorized vehicles to cycling. They address both mitigation of, and adaptation to, climate change. Collectively these initiatives represent hundreds of partners and they bring together cities, regions, development organizations, the private sector and civil society. The initiatives contribute to all components of the Avoid-Shift-Improve approach and several of the initiatives actively support the principle of co-modality.

Collectively these initiatives, if widely supported by state-and non-state actors, and implemented at scale, can reduce the carbon footprint of an estimated half of all the passenger and freight trips made by 2025. Actions such as these can contribute to substantive savings associated with a shift to low carbon transport. The International Energy Agency (IEA) have [estimated](#)² that these could be as high as US\$70 trillion by 2050 as less money would need to be invested in vehicles, fuel and transport infrastructure reflecting the strong economic case for climate action in the transport sector.

The transport initiatives are harnessing the energy and interest created by the Paris Agreement to mobilizing global climate action and are voluntary commitments from a wide range of non-state actors.

There is an increasing, but not universal, recognition from national governments of the essential roles of non-state actors in achieving and even guiding the mitigation efforts needed to deliver on the Paris Agreement. Section V of the COP21 Decision “*Welcomes* the efforts of all non-Party stakeholders to address and respond to climate change, including those of civil society, the private sector, financial institutions, cities and other subnational authorities.” Numerous references to the role of non-party stakeholders can also be found in other parts of the COP21 Decision.

All of this bodes well for continued action on transport and climate change through a continued emphasis on the GCAA Transport Initiatives. During the summer of 2016 the HLC consulted widely on how to scale up and support non State action, they will present their proposals during COP22 in November 2016.

The transport initiatives are at various stages in terms of defining targets and indicators to monitor their commitments. An important objective of this report is to develop a better overview of how the GCAA Transport Initiatives define and monitor progress.

There is a developing understanding of the role GCAA can play in supporting and raising the level of ambition of the Nationally Determined Contributions (NDCs) in 2018, which are a key implementation mechanism of the Paris Agreement on Climate Change, as well as the transport related targets under Sustainable Development Goals (SDGs) adopted in 2015. Finally, those initiatives that have an urban

² <http://www.iea.org/publications/freepublications/publication/policy-pathways---energy-efficiency-in-urban-transport-systems.html>

focus will possibly also be able to get a lift from the follow up of the Habitat III Conference that took place in October 2016 in Quito, Ecuador. The report assesses the alignment of the GCAA Transport Initiatives with all three of these processes with the greatest emphasis on alignment with the NDCs.

C. Methodology

The preparation of this report was closely coordinated with the PPMC/SLoCaT secretariat and the French Ministry of Ecology, Sustainable Development and Energy, which is tracking the progress of the transport Initiatives on behalf of the GCAA.

Information collection involved the following steps:

- A physical meeting with about half of the Transport Initiatives on September 19th 2016 in Paris,
- Structured collection of information on progress since COP21 requested from all 15 initiatives,
- Bilateral follow-up by SLoCaT Partnership with some of the 15 Transport Initiatives,
- Consultation and approval of all initiatives on the draft report prior to publication.

In addition, the transport initiatives were asked to comment on various parts of analytical work product included in this draft report. This approach of actively engaging the initiatives in the various steps of assessment reflects the bottom-up approach of the GCAA to give the respective initiatives full control over the manner in which they structure the implementation of their initiatives and also how they monitor progress.

Participating transport initiatives were encouraged to contribute by providing information through linking the information collection for the report to renewed outreach efforts in the GCAA Transport Initiatives through a new flyer on the initiatives prepared for COP22 in Marrakesh, and the updating of individual pages for the 15 initiatives on the Paris Process on Mobility and Climate (PPMC) website (<http://www.ppmc-transport.org/transportinitiatives>).

The report will serve as the basis for showcasing the GCAA Transport Initiatives in a GCAA Thematic event on Transport on the 12th November 2016 in Marrakesh, Morocco. This meeting, which will be organized jointly by the Paris Process on Mobility and Climate (PPMC), the French Ministry of Ecology, Sustainable Development and Energy and the Moroccan Ministry of Transport will highlight the contribution of voluntary non State action in the Transport sector and promote a dialogue with UNFCCC Parties to facilitate mutual understanding and cooperation to increase the overall level of ambition for transport action in the NDCs that will be developed in 2018.

II. Getting to know the GCAA Transport Initiatives

This chapter gives an overview of the initiatives through presenting their objectives, what the initiatives have committed to and who are part of the initiatives. The overview also includes the activities since COP21 and activities planned for 2017. This is followed by three mapping activities:

- a. By type of signatories and partners: this includes an assessment on whether new signatories or partners have been added since COP21 and a closer look at the extent to which the initiatives have added specifically government signatories or partners;
- b. In terms of alignment with the Avoid – Shift – Improve approach: this to give a better overview of the approach initiatives have undertaken to reduce CO₂ emissions;
- c. By type of activity: whether the initiatives are focusing more on enabling activities like capacity building, knowledge management or more focused on impact through changing policy and actual implementation.

A. Overview of Initiatives

1. Airport Carbon Accreditation

Airport Carbon Accreditation:

Reducing carbon emissions & increasing airport sustainability

Objective

Airport Carbon Accreditation was developed and launched by Airports Council International (ACI)-Europe in 2009. As of late 2014, Airport Carbon Accreditation had expanded world-wide to all ACI regions. Today it is the only global carbon management standard for airports. The objective of the initiative is to reduce carbon emissions and achieve best practice in carbon management from operations fully within the control of the airports, with the ultimate target of becoming carbon neutral.

Commitment

The initiative aims to increase airport accreditations in all regions with a commitment for 50 carbon neutral airports in Europe by 2030. In 2015/2016 accredited airports reduced CO₂ emissions under their direct control by 206,000 tons compared to the average emissions of the 3 previous years. Emissions per passenger have decreased by 7% from 2.26 kg CO₂ in 2014/2015 to 2.10 kg CO₂ in 2015/2016. Since January 2016, four more airports achieved carbon neutrality in Europe. Furthermore, two airports in other world regions have become carbon neutral.

The program is endorsed or supported by UNFCCC, UNEP, ICAO, FAA, European Commission, etc. The administrator of the program is WSP Parsons Brinckerhoff.

2016 Activities

Outreach and Capacity building:

- Since January 2016, 23 more airports have been accredited. As of September 2016, 170 airports have been accredited in total, representing more than 36% of the world's passenger traffic.

- A series of dedicated workshops are being delivered to the ACI regions, meetings are taking place, while the Guidance Document (i.e., the manual that explains the step by step process and requirements of accreditation) was revised. The initiative's plan for 2016/2017 will continue to progress towards additional carbon neutral airports with new accreditations through continued cooperation with UNFCCC and the SLoCaT Partnership.
- The Airport Carbon and Emissions Reporting Tool (ACERT), provided by ACI World in collaboration with Zurich Airport, has been upgraded to allow for an easier input of the required carbon footprint information into the *Airport Carbon Accreditation* online application tool. ACERT is available at no cost to airports and can in particular help small airports become *Airport Carbon Accredited*.

The development of *Airport Carbon Accreditation* is shown in the graphs below.

Airport Carbon Accredited Airports



Distribution of *Airport Carbon Accredited Airports*



2. Aviation's Climate Action Takes Off

Aviation's Climate Action Takes Off:

Collaborative climate action across the air transport sector

Objective

The Aviation's Climate Action Takes Off initiative aims to control international aviation CO₂ emissions through a basket of aviation CO₂-reduction measures, including a goal of carbon-neutral growth through a global market-based mechanism.

Commitment

The initiative supports short-, medium- and long-term goals to cut emissions from aviation. It showcases action by industry and states in addressing CO₂ emissions from international aviation. Measures include supporting developing new, more efficient aircraft technology and sustainable alternative fuels while promoting and deploying operational improvements to reduce CO₂ emissions from aircraft already in service. It calls for better use of infrastructure, especially in air traffic management. Through ATAG the aviation industry also provided strong support to the development of ICAO's Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), a landmark agreement, adopted at the last ICAO Assembly in October 2016, making the aviation industry the first sector to adopt a global market-based measure to address climate change³.

ICAO represents 191 Member states and ATAG represents 29 private sector companies or associations from the aviation industry.

³ <http://www.icao.int/environmental-protection/Pages/market-based-measures.aspx>

2016 Activities

Outreach and Capacity building:

An intense capacity building strategy was put in place to facilitate the development, refinement and ultimately adoption of the CORSIA including two series (2015 and 2016) of five Global Aviation Dialogues ICAO/GLADS on market-based measures to address climate change with participations of states, civil society and aviation stakeholders in Africa, Middle East, Europe and North Atlantic, Asia-Pacific and the Americas, and ATAG roundtables for industry in seven cities worldwide. In addition, ATAG held a Sustainable Aviation Forum, and held ICAO High-level Meeting and a series of additional informal negotiations where a global market-based mechanism was further refined and agreed at the 39th ICAO Assembly in October 2016. The historical market-based measure agreement to address international aviation CO2 will complement the ambition under the Paris agreement NDCs.

ICAO has worked with governments, industry and civil society to deliver the world's first [CO₂ Standard for Aircraft](#) in February 2016. This is the very first 'global design Standard' for CO2 emissions for any sector, and it was realized after six years of intensive work by many of the best experts in the world. The Standard guarantees up to a 10% fuel efficiency gain for each new type developed from 2020, relative to the average of current production aircraft types. It also addresses new deliveries of those aircraft that are already in-production from 2023. If they have not complied with the standard by 2028, they cannot be produced anymore. For context, approximately 40% of current production airplane type designs will need to be improved to meet the Standard.

3. C40 Clean Bus Declaration

C40 Clean Bus Declaration:

Raising ambition and catalyzing markets

Objective

The C40 Clean Bus Declaration is led by the C40 Cities Climate Leadership Group (C40). It is aimed at influencing manufacturers, public transport operators, leasing companies, multilateral development banks and other funding agencies to support city ambitions to decarbonize urban mass transport.

Commitment

The cities that are part of the initiative will incorporate over 160,000 buses in their fleet by 2020, of which they have committed to switching 42,000 buses to low emission. GHG savings will be almost 900,000 tons per year, with a potential overall savings of 2.8 m tons each year if the cities managed to switch their entire bus fleet.

Twenty-six cities around the world have signed up to the Clean Bus Declaration so far to demonstrate the strong global demand for clean buses.

2016 Activities

Outreach:

The initiative continues to support cities by making use of media, event and other communication platforms to highlight the significant market opportunity for hybrid and electric buses and explore whether they could be made available at an affordable price for cities.

The initiative will continue to conduct meetings with manufacturers to highlight demand from cities,

and to encourage movement in the price of low emission buses.

Capacity Building:

C40 has facilitated several study tours and information exchanges during 2016 between signatory cities to build capacity in cities who are just starting out on a clean bus journey.

Increasing the number of signatories:

Paris has come on board as the latest signatory, bringing the total number of cities signed up to twenty-seven. Many other cities have expressed interest in signing up.

Knowledge building:

In recent months, signatory cities have continued to collaborate through C40, by sharing data on plans and targets, technology performance and how challenges in introducing these technologies at a large scale are being overcome in other cities around the world.

Specific deliverables (events, workshops, reports, action) since COP21:

Currently in the process of supporting the city of London in delivering a Zero Emission Bus conference in late November 2016, and a C40 Finance Academy in 2017, with a key focus on clean buses.

4. Global Fuel Economy Initiative (GFEI)

Global Fuel Economy Initiative:

100 Countries 50 by 50

Objective

The Global Fuel Economy Initiative (GFEI) assists governments and transport stakeholders to improve vehicle fuel economy and reduce emissions of carbon dioxide.

Commitment

GFEI aims to double the average fuel economy of new light duty vehicles globally by 2030, and all vehicles by 2050.

For COP21, GFEI launched '100 for 50 by 50' to encourage new countries to commit to GFEI's fuel economy improvement goals. This commitment involves developing and adopting national fuel economy policies, and to dedicate time and resources to supporting GFEI's work. At COP21 GFEI announced funding for 40 new countries joining their work, with more that have expressed interest.

2016 Activities

Outreach and Capacity building:

GFEI has continued to raise global awareness about the benefits of fuel economy in 2016, by working closely with governments and policy makers and showcasing our work at major conferences, such as TRB in Washington DC, ITF in Leipzig, Automotive Megatrends in Detroit, Better Air Quality in South Korea, and SIMEA in Sao Paolo. GFEI partners provide expert guidance and training, including at the GFEI global training and networking event in Paris in June, which involved 70 participants from 50 countries, as well as thorough regional and in-country training and policy development support.

Knowledge Building

GFEI has continued its series of working papers, publishing new data (Working Paper 12) on average fuel economy globally which includes in-depth analysis for major markets. It has also published a new analysis of potential growth in EVs (Working Paper 13), and a report on fuel economy in HDVs (Working Paper 14).

Increasing the number of signatories:

40 countries signed to work with GFEI up at COP21, taking the total to over 65. Contracts and work plans have been established to take this forward, including planned workshops and vehicle data collection. GFEI has a list of further countries who are interested in working with us, and so are exploring opportunities for new funding to enable this expansion.

Monitoring and reporting:

The initiative has introduced detailed reporting requirements in contracts as the first step to establish impact assessment and progress monitoring system. In addition to the global networking event, there have been national or regional workshops in Kenya, Botswana, Philippines, Vietnam, Sri Lanka, South Korea, Peru, Jamaica, Macedonia and Ukraine, with more planned. GFEI has also been providing support to Turkey and South Africa.

5. Global Green Freight Action Plan

Global Green Freight Action Plan:

Reducing the climate and health impacts of goods transport

Objective

The Global Green Freight Action Plan (GGFAP) aims to enhance the environmental and energy efficiency of goods movement in ways that significantly reduce the climate, health, energy, and cost impacts of freight transport around the world. The three main objectives are: 1) To align and enhance existing green freight programs; 2) To develop and support new green freight programs globally; and 3) To incorporate black carbon reductions into green freight programs.

Commitment

GGFAP commits to dramatically reduce emissions of greenhouse gases, black carbon and air pollutants in the freight sector by 2025 through a greener and more energy efficient multimodal global supply chain.

Steering group partners include Canada, United States, International Council on Clean Transportation, Clean Air Asia, Smart Freight Centre, and the World Bank. The initiative has received support from 24 countries, 28 IGOs/NGOs/CSOs, and 4 companies from the private sector.

2016 Activities

Outreach and *Capacity* *Building:*

The initiative has launched the online platform www.globalgreenfreight.org which aims to cultivate an active online community and resource that will be a primary resource in the freight sector. This online

platform includes essential information to assist countries in designing and improving green freight programs (e.g., guidance documents, technical documentation on multiple technologies and operational strategies to reduce freight emissions, relevant events). The initiative also participated and presented the Action Plan at a regional [Workshop on Sustainable Freight Transport and Finance](#) organized United Nations Conference on Trade and Development (UNCTAD) in Nairobi, Kenya in March 2016, with the objective of assisting the Northern Corridor of Africa in developing a green freight program. The initiative also presented and participated at the Green Freight Day at the Better Air Quality Conference organized by Clean Air Asia in Busan, South Korea in August 2016, and at the ADB Transport Forum in Manila, Philippines in September 2016. The initiative will continue to organize two more regional workshops in, Europe and Latin America in 2016 and 2017 to explore the status and opportunities for development and harmonization of regional green freight programs. New capacity building training materials were created by US EPA SmartWay to train countries to develop Technology Verification programs. This new content supplements EPA's Green Freight program development training and will be used in more workshops in 2017.

Knowledge building:

Through the Global Logistics Emissions Council (GLEC), the initiative finalized a Framework for Logistics Emissions Methodologies, which will assist industry to calculate logistics emissions consistently and transparently across the global supply chain. In addition, other activities include freight assessments in Brazil, Mexico, and other regions to characterize the freight industry and support the development of green freight programs. Other future developments include a methodology to account for black carbon and CO₂ emissions in green freight programs; quantitative assessment of a green, multimodal, international supply chain; and establishing essential technology verification programs to ensure confidence that efficiency technologies will work for their applications. To support the first goal of the GGFAP, EPA and NRCan moved forward with SEMARNAT to plan for the expansion of SmartWay to Mexico, with the aim of creating a single North American SmartWay program in the 2017-18 timeframe.

6. ITS for Climate

ITS for Climate:

Using Intelligent Transportation Systems (ITS) to deliver big results at a small cost: leveraging

Objective

ITS for Climate Initiative aims to take a stand in favor of using ITS solutions to work towards a low-carbon, resilient world and to limit global warming below the 2-degree target and contribute to adaptation to climate change in large cities and isolated territories.

Commitment

The initiative will spread awareness about ITS, and deliver accurate information; train and develop experts; promote "cross-fertilize" to build on past successes, develop incentive programs for ITS project deployment.

The ITS for Climate initiative is carried out by ATEC ITS France and TOPOS Aquitaine, who represent a few hundred members; more partners and supporters are expected to join in coming years.

2016 Activities

Outreach and Capacity building:

The initiative expects to have more partners and supporters joining in this year and will seek support across all continents, through different actions such as communication during ITS, smart cities and climate change congresses.

The initiative has launched in 2016 a « Digital Mobility Ideas Box », which results will be announced at Marrakech COP22 transport day and a Hackathon (taking place early 2017).

Knowledge building :

The initiative is presently building « ITS for Climate Projects & Best Practices Database » to register ITS solutions proposed or implemented to address climatic issues and is launching a international research program aimed at developing a methodology and a toolbox to precisely measure the impact of current and foreseen ITS projects and develop coordinated deployment plan of ITS Solutions specially in large cities and insulated territories.

7. Low Carbon Road and Road Transport Initiative (LC2RTI)

Low Carbon Road and Road Transport Initiative (LC2RTI):

Green roads – clean growth

Objective

The Low Carbon Road and Road Transport Initiative is led by the World Road Association (PIARC) and its objective is building strong and sustainable adaptation policies for the road network, including sensitive engineering structures and infrastructure (bridges, rural roads, etc.).

Commitment

The initiative is committed to: Providing guidance to road authorities in implementing sustainable national strategies addressing climate change. Reducing the carbon footprint of road construction, maintenance and operation through technological innovation, including ITS, and the implementation of green tendering and contracting Developing road networks in line with new vehicle technologies (electric propulsion, autonomous cars, road/vehicle and vehicle/vehicle interactions, etc.) and enhancing intermodal cooperation.

The initiative is supported by 121 government members of the World Road Association (PIARC).

2016 Activities

Knowledge building:

The initiative will continue the implementation of the [4-year Strategic Plan](#) in 2016 to deliver the major outputs including the set up of three technical committees; each committee will organize two seminars in low/ middle-income countries from 2016-2019 to enhance knowledge exchange on low carbon road transport.

The LC2RTI initiative will also update the [Intelligent Transport Systems/Road Network Operation Manual](#), an online resource that provide guidance on the effective use of ITS in Road Network Operations based on practical experience in many countries.

The LC2RTI initiative will release the French and Spanish version of its International climate change adaptation framework for road infrastructure, [already available on-line in English](#).

8. MobiliseYourCity

MobiliseYourCity:

100 cities engaged in sustainable urban mobility planning to reduce greenhouse gas emissions

Objective

A multi-donor initiative for sustainable urban mobility planning: [MobiliseYourCity](#) accompanies developing and emerging countries and cities in their efforts to shape urbanization and the associated transport developments towards a sustainable and climate-friendly path.

Commitment

By 2020:

- 20 countries commit to establish National Urban Mobility Policies and/or Programs
- 100 cities commit to reduce their emissions by 50% (by 2050) through the development of Sustainable Urban Mobility Plans

Mitigation measures are prepared by integrated planning with participation of the various public and private sector stakeholders and civil society from an early stage

Partners offer technical assistance and capacity development, as well as effective linkage to financial assistance and city-to-city cooperation.

Founding partners: ADEME, AFD, CEREMA, CODATU, GIZ

2016 Activities

Outreach and Capacity building:

Elaboration of the methodological framework for cities and countries. Presentation of the initiative in Nantes (Climate Chance) and Quito (Habitat III). 23 cities already expressed interest.

Structure of the initiative and fund raising campaign:

Setup of the governance bodies of the initiative.

Financial budget end of 2016: approx. EUR 25M secured; intended 2020: EUR 50-70M

Funding confirmed from DG DEVCO (EU), France (MEEM/FFEM) and Germany (BMUB); additional donors sought

Activities on the field:

MobiliseDays (Workshops) organized in Cameroon and Morocco. Tunisia, Senegal, India and other countries to follow in 2017.

9. Navigating a Changing Climate

Navigating a Changing Climate:

Think Climate to reduce emissions, strengthen resilience, and adapt waterborne transport infrastructure

Objective

Think Climate, a multi-stakeholder coalition of ten associations with interests in waterborne transport infrastructure, has agreed the NAVIGATING A CHANGING CLIMATE Action Plan to develop sustainable solutions and prepare sector-specific technical resources.

Commitment

The coalition is committed to promoting a shift to low carbon inland and maritime navigation

infrastructure; to building capacity and enhancing decision-making on mitigation and adaptation options; and to raising awareness of the need to act urgently to improve preparedness and strengthen the resilience of waterborne transport infrastructure, with an emphasis on Working with Nature.

Partners comprise: World Association for Waterborne Transport Infrastructure (PIANC), International Association of Ports and Harbors (IAPH), International Harbor Masters' Association (IHMA), International Maritime Pilots' Association (IMPA), International Bulk Terminals Association (IBTA), European Dredging Association (EuDA), European Sea Ports Organization (ESPO), Smart Freight Centre, the Institute of Marine Engineering, Science & Technology (IMarEST) and Inland Waterways international (IWI).

2016 Activities

Outreach and Capacity building:

Three new partners (ESPO, IMarEST and IWI) have joined the initiative through PIANC's Think Climate Coalition. By the end of 2016, workshops or short courses will have been held in England, Philippines, South Africa and Dubai, and the initiative introduced at events in Scotland, Italy and Brazil. A global conference will be held in 2017. Technical good practice guidance on adaptation for ports and inland waterways, including capacity building, will also be published in 2017.

Increasing the number of signatories:

In addition to the new partners, PIANC has set a target of gaining 40 supporter organizations by end of 2016. The new Navigating a Changing Climate website to be launched in November 2016 will have a facility for direct supporter sign-up. The initiative will continue to work towards the goal of having 100 supporter organizations by 2020.

Knowledge building:

A new initiative to consolidate sector specific carbon accounting methodologies is currently underway by SFC and work has started on an IAPH guidance document on Port Emissions Status Assessment. New PIANC Working Groups on Carbon Management and on Resilience have been set up. The initiative has also started initial development of a web-based platform for webinars, videos and toolbox talks in 2016.

10. The UIC Low Carbon Sustainable Rail Transport Challenge

The UIC Low Carbon Sustainable Rail Transport Challenge:

On the low carbon track

Objective

This challenge sets out ambitious but achievable targets for improvement of rail sector energy efficiency, reductions in GHG emissions and a more sustainable balance between transport modes.

Commitment

Implementation of the Challenge will result in 50% reduction in CO₂ emissions from train operations by 2030, and 75% reduction by 2050, 50% reduction in energy consumption from train operations by 2030, and 60% reduction by 2050, 50% increase in rail's share of passenger transportation by 2030 and doubling by 2050 (2010 baseline), rail freight activity equal to that of road freight by 2030, and exceeding road freight volumes by 50% by 2050.

The UIC challenge is supported by UIC's 240 member railway companies based in 95 countries worldwide.

2016 Activities

Monitoring and reporting:

Improvement of rail energy and CO₂ intensity are currently in line with the 2030 and 2050 targets. The latest audited data (2013) indicates that specific energy consumption has reduced by 37% since 1990, and specific CO₂ emissions have reduced by 30% in the same period.

For detailed analysis refer to the UIC-IEA Handbook on Energy & CO₂ Emissions, see http://uic.org/IMG/pdf/iea-uic_railway_handbook_2016_web.pdf.

11. UITP Declaration on Climate Change Leadership

UITP Declaration on Climate Change Leadership:

Supporting our goal to double the market share of public transport by 2025

Objective

UITP confirms public transport's climate leadership and brings around 350 future commitments and actions from 110 public transport undertakings in 80 cities and help build capacity at the local and national level on reporting in support of the 2030 global agenda on sustainable development aimed at expanding public transport.

Commitment

All efforts will support UITP's goal to double the market share of public transport by 2025 (ptx2), which would prevent half a billion tons of CO₂ equivalent in 2025.

UITP network extends to more than 1,400 companies, over 16,000 contacts from 96 countries.

2016 Activities

Monitoring and reporting:

- UITP made an assessment of where the public transport sector stands mid-way through the 2025 deadline. This assessment has been made using 2012 data collected in 60 metropolitan areas located in both developed and developing countries. Though public transport supply has nearly doubled compared to 1995, the growth of mobility demand is such that mode share gains in some regions are offset in others as the support of public transport has not matched demand for mobility.
- UITP has also monitored implementation of the 350 actions pledged at the UN Summit. UITP can report that implementation (full or partial) could be seen in 60 global cities covering around 45% of the actions pledges covering public transport buses, trains, trams, metro; combined mobility, improvements in infrastructure, awareness and action.

12. Urban Electric Mobility Initiative

Urban Electric Mobility Initiative:

Harnessing technological innovations and better urban planning to promote low carbon transport

Objective

The Urban Electric Mobility Vehicles Initiative (UEMI) aims to help phasing out the use of conventionally fueled vehicles in cities and increase the share of electric vehicles in individual mobility (2-3 wheelers and light duty vehicles) in urban areas to at least 30% by 2030.

Commitment

The UEMI aims to boost the share of electric vehicles in urban transport and integrate electric mobility into a wider concept of sustainable urban transport that achieves a 30% reduction of GHG emissions in urban areas by 2030.

The UEMI is an active partnership that aims to track international action in the area of electric mobility and aims to initiate local action. Current partners include: UN-Habitat, Wuppertal Institute, IEA, Polis, ICLEI, Michelin, Clean Air Asia, CAIF, AVERE, Vulcan, IRU, BYD, ECF, UITP; UC-Davis and the European Commission through its projects SOLUTIONS, ELIPTIC, EMPOWER.

2016 Activities***Knowledge building:***

The initiative is working on the development of a pipeline of project concepts that can be taken further towards implementation. It continues to work on capacity building and the development of a toolkit on sustainable urban mobility in 2016. A new series of trainings, webinars and e-learning courses and a call for partner cities will be launched in late-2016 together with the urban mobility SOLUTIONS network.

13. World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment

**World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment:
Cycling delivers on the global goals****Objective**

Show the importance of cycling to achieve the new UN Sustainable Development Goals, with special attention to climate action.

Commitment

The commitment showcases the ambitions of cities to increase the modal share of cycling worldwide and to double cycling in Europe by 2020. It aims to mobilize support of WCA and ECF members to enable local, national and international governments and institutions to scale up action on cycling.

The commitment is supported by ECF and WCA, representing about 100 civil society organizations worldwide.

2016 Activities***Outreach and Capacity building:***

In 2016, ECF and WCA will continue to collect ambitions and flagship projects from cities worldwide, adding to the current list of cities with cycling targets published in 2015 in their Voluntary Commitment brochure "[Cycling Delivers on the Global Goals.](#)"

Further to mobilizing and supporting scale-up action on cycling, ECF continues to organize its annual global summit on cycling – Velo-city – that in 2016 took place in Taipei, Taiwan. In addition, WCA is now campaigning for the United Nations General Assembly to recognize and designate a [World Bicycle Day](#) in

an effort to push cycling higher on the agenda and promote it as delivering on the Sustainable Development Goals and as an important means of transportation.

Monitoring and reporting:

In 2016 a special webpage will be created to deliver background information and links to useful information on cycling. The list of cities and regions with clear targets on cycling will be extended and the development of the modal share of cycling of at least the listed 70 cities and regions will be monitored.

14. Worldwide Taxis4SmartCities

Worldwide Taxis4SmartCities:

Accelerating the introduction of low emission vehicles in taxis fleets by 2020 and 2030 and promote sustainability.

Objective

Worldwide Taxi Companies are committed to accelerating the energy transition of their vehicle fleet by 2020 and 2030. *More generally, the Taxi4SmartCities coalition intends to defend a progressive and modern version of the taxi as a key actor of the Smart City.*

Commitment

The first commitment of the coalition is to accelerate the energy transition of vehicles, partners have chosen their objective according to the current state of their fleet, their financing capacities and the national infrastructure. Several commitments have thus been defined with the French Ministry of Ecology, Sustainable Development and Energy:

- Bamboo Club: 33% of new vehicles entering the fleet emit less than 60g of CO₂ / km by 2020.
- Oak Tree Club: 50% of new vehicles entering the fleet emit less than 60g of CO₂ / km by 2020.
- Sequoia Club: 50% of new vehicles entering the fleet emit less than 60g of CO₂ / km by 2020 and 100% of new vehicles entering the fleet emit less than 20g of CO₂ / km by 2030.

19 companies representing more than 120,000 vehicles have committed to date.

2016 Activities

Increasing the number of signatories:

The initiative was officially launched in April 2016 with 14 taxi companies. By October 2016 four more companies had joined, in total representing more than 120,000 vehicles. It aims at including at least one company from each country in the LAC and Asia region to join the initiative in the coming years.

Monitoring and reporting:

Monitoring of the commitments made will then be ensured through an annual review carried out by the signatories and the associated publication of an assessment of the actions undertaken.

The CO₂ emissions that could be avoided thanks to the application of the commitments will be evaluated ex ante, using the following formula:

'NB OF VEHICLES x NB OF JOURNEYS/YEAR x AVERAGE KM PER JOURNEY x g CO₂/km EMISSION RATE'

Moreover, members have agreed on a common “charter of progress” to encourage innovations related to the four pillars of sustainability (training of drivers, taxi accessibility, shared mobility, complementarity with public transport etc.)

15. ZEV Alliance

ZEV Alliance:

Accelerating global zero-emission vehicle adoption

Objective

The International Zero-Emission Vehicle Alliance (ZEV Alliance) is a collaboration of governments acting together to accelerate the adoption of zero-emission vehicles (electric, plug-in hybrid, and fuel cell vehicles).

Commitment

The ZEV Alliance works to accelerate the adoption of zero-emission vehicles (ZEVs), including electric vehicles, plug-in hybrids, and fuel-cell vehicles, to achieve national and subnational climate change commitments. The governments announced that they will strive to make all passenger vehicle sales in their jurisdictions ZEVs by no later than 2050 and to collaborate on policies and actions to achieve their ZEV targets.

British Columbia, California, Connecticut, Germany, Maryland, Massachusetts, the Netherlands, New York, Norway, Oregon, Québec, Rhode Island, United Kingdom, Vermont have signed up to the ZEV Alliance.

2016 Activities

Outreach and Capacity building:

The participants will continue to set ambitious, achievable targets for ZEV deployment, take actions to achieve those targets as appropriate in each jurisdiction, act together to achieve individual and collective targets, and encourage and support other jurisdictions in setting and achieving ambitious ZEV targets. The governments meet regularly to support their ongoing policy and technology developments in the respective jurisdictions and direct new work to establish global best practices to support ZEVs.

The ZEV Alliance member governments have continued to meet on a monthly basis to collaborate on wide-ranging policy and technical questions related to ZEV consumer incentives, electric power utility practices, and consumer awareness programs to best support ZEV deployment. The ZEV Alliance, with several prospective new member governments, met in person to chart out its priorities, ongoing activities, and plans to continue the implementation of the ZEV Alliance’s commitments in 2016 and 2017.

Knowledge

building:

The International Council on Clean Transportation has prepared and published reports for the ZEV Alliance, one titled, “Principles for effective electric vehicle incentive design.” It assesses the best practices in the design of electric vehicle incentives based on an analysis of these incentives across major markets in North America, Europe, and Asia. The most recent report is “Assessment of next-generation electric vehicle technologies,” analyzing vehicle models and the potential for lowered costs and increased production volume.

Policy making and implementation:
 The ZEV Alliance’s 14 governments have sustained and expanded many dozens of ZEV support policies throughout 2016, including new and continued ZEV consumer incentives, continued regulatory support for ZEV deployment, increased ZEV electric charging and hydrogen refueling infrastructure deployment, increased activities to promote electric power utility support for ZEVs, and increased public ZEV public education and awareness campaigns.

B. Mapping of GCAA Initiatives

1. By type of signatories

The 15 GCAA Transport Initiatives are supported by a wide network of signatories including national and civil governments, private sectors companies; as well civil society organizations. The signatories of the initiatives agree to the objectives of the initiatives and are expected to play an important role in implementing the actions committed by the initiative holders.

In order to increase the impact of the sustainable, low carbon transport actions put forward by the initiatives, initiative holders continue to widen their network and recruit additional signatories, as well as supporters. Furthermore, it is also important to increased government support for initiatives; as governments can enable the implementation of the initiatives by adopting relevant government policies and regulations.

The below table presents an overview of the type of institutions who are signatories and/or supporters of the GCAA Transport Initiatives:

Initiative Name	National Governments	States, Provinces and Cities	Private companies Sector	Civil society
Airport Carbon Accreditation				
Aviation’s Climate Action Takes Off				
C40 Cities Clean Bus Declaration of Intent				
Global Fuel Economy Initiative				
Global Green Freight Action Plan				
ITS for the Climate				
Low Carbon Road and Road Transport Initiative (LC2RTI)				
MobiliseYourCity				
Navigating A Changing Climate				
UIC Low-Carbon Sustainable Rail Transport Challenge				

Initiative Name	National Governments	States, Provinces and Cities	Private Sector companies	Civil society
UITP Declaration on Climate Leadership				
Urban Electric Mobility Vehicles Initiative (UEMI)				
World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment				
Worldwide Taxis4SmartCities Initiative				
ZEV Alliance				

Table 1: Overview of GCAA Transport Initiatives Signatories by type of institution

 Majority number of signatories
  Minority number of signatories

Observations on the signatories of the GCAA Initiatives;

- Fixed vs. growing number of signatories:** In building up support for their commitments the GCAA Transport Initiatives have adopted two different strategies. Some initiatives such as UIC Low Carbon Sustainable Rail Transport Challenge was developed with signatories joining from the beginning and it is supported by 240 railway companies who are members of International Union of Railways (UIC). Similarly, the UITP Declaration on Climate Change Leadership brings together 350 commitments from 110 public transport undertakings. On the other hand, there are initiatives who are gradually building up their supporter base and expanding their signatories over time. For example, the Airport Carbon Accreditation Initiative has expanded their signatories from 132 to 170 from November 2015 to September 2016, and the Navigating a Changing Climate initiative now has ten partner associations (up from 7 in 2015) and an associated outreach of more than 310,000 individuals (up from 250,000). Similarly, the number of countries announcing commitments to the Global Fuel Economy Initiative increased by 40 to 65 since COP 21.
- Type of Signatories:** While the number of signatories have a wide range; the type of signatories can be divided into four groups; national governments, city governments, private sector companies and civil society organization. Examples of commitments with national governments as their signatories are Aviation's Climate Action Takes Off and Low Carbon Road and Road Transport Initiative are supported by 191 and 121 member states respectively. Similarly, the Global Fuel Economy Initiative is supported by 65 countries around the world, and the Global Green Freight Action Plan received official endorsement from 24 countries. In addition, the Global Green Freight Action Plan has 28 supporters from civil society and the World Cycling Alliance's Commitment aims to receive support from 100 civil society organizations.
- In addition to national governments, cities and local governments play a major role in some of the initiatives; for example, 26 cities have signed up to the C40 Clean Bus Declaration committing to doing their share to shift to low emission buses.
- Private sector also comprises a big part of the signatories; UITP Declaration on Climate Leadership is supported by 1400 transport operators, who mostly act as private sector

companies and who are members of the UITP. There are also initiatives such as the *Airport Carbon Accreditation* for which their signatories may be from private sector or government run airports as well as airports that are run jointly by public-private initiatives.

- **Signatories vs. Supporters:** There is considerable difference in terms of the level of commitment of signatories under the initiatives. This ranges from firm commitments to implement activities, monitored and verified by third parties (e.g. the Airport Carbon Accreditation Initiative) to initiatives where “signatories” or “partners” merely endorse an initiative without taking on any specific responsibility for implementation (e.g. the Urban Electric Mobility Initiative, or the ITS for Climate initiative).
- **Increasing government support:** The impact of the transport initiatives can be significantly enhanced by receiving government support and having the required policy regulations in place. Therefore, government support is crucial for most initiatives to reach their overall impact targets. Global Green Freight Action Plan has been reaching out to countries in Africa, Asia, Europe and Latin America; and as a result has received support of 24 countries for their Action Plan. Another example of transport initiatives receiving support from governments in terms of enabling policies as well as direct support to initiative is ZEV Alliance. In the recent months, governments have agreed to provide more support directly to the ZEV Alliance in addition to the electrical vehicles supporting policies adopted by increasing number of governments. A key objective in the next 2 years (in the run up to the NDC’s in 2018) is to ensure states understand their role in supporting the scaling up of transport initiatives.

2. Avoid Shift Improve

There is widespread agreement among transport policy specialists and planners on the need to deploy three interlinked strategies “Avoid-Shift-Improve (A-S-I)” approach– to realize a transformative change in the transport sector and create inclusive access to jobs, goods and services. The A-S-I approach calls for: (a) **Avoiding** the need for unnecessary motorized trips through smarter land use and logistics planning; (b) **Shifting** the transport of goods and persons to the most efficient mode; and (c) **Improving** the efficiency and environmental performance of transport systems through improved vehicle, fuel, and network operations and management technologies.

In understanding how the GCAA Transport Initiatives are achieving their goals, the A-S-I can be used as a tool to compare the different commitments and actions put forward by the initiatives. The below table presents an overview of the initiatives assessed by the A-S-I approach.

GCAA Transport Initiatives Organized by Avoid-Shift-Improve Approach			
Initiative Name	Avoid	Shift	Improve
Airport Carbon Accreditation			
Aviation’s Climate Action Takes Off			
C40 Cities Clean Bus Declaration of Intent			
Global Fuel Economy Initiative			

GCAA Transport Initiatives Organized by Avoid-Shift-Improve Approach			
Initiative Name	Avoid	Shift	Improve
Global Green Freight Action Plan			
ITS for the Climate			
Low Carbon Road and Road Transport Initiative (LC2RTI)			
MobiliseYourCity ⁴			
Navigating A Changing Climate			
UIC Low-Carbon Sustainable Rail Transport Challenge			
UITP Declaration on Climate Leadership			
Urban Electric Mobility Vehicles Initiative (UEMI)			
World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment			
Worldwide Taxis4SmartCities Initiative			
ZEV Alliance			

Table 2: GCAA Transport Initiatives Organized by Avoid-Shift-Improve Approach

Strong Focus
 Medium Focus
 Least focus/Not relevant

- Avoid:** Only few of the initiatives have a strong focus on activities avoiding the need for unnecessary motorized trips. It appears that from a climate change perspective it is easier or more attractive to promote a shift to different modes or improving efficiency of existing modes of transport. For a more balanced approach it would be necessary to increase attention on the Avoid approach. Nevertheless, there are three GCAA Transport initiatives who rose up to the challenge. The World Cycling Alliance and European Cyclist's Federation Commitment is a good example of an avoid-oriented initiative as it aims to increase the modal share of cycling and doubling cycling in Europe. The MobiliseYourCity Initiative through its sustainable urban

⁴ MobiliseyourCity initiative refers to Enable – Avoid – Shift – Improve (EASI) and as part of the Enable component includes training courses for decision makers at both local and national levels, as well as components on inclusive processes in order to better plan urban mobility. Several of the other initiatives also include capacity building activities but without specifically using the EASI approach .

mobility plans promote the design of liveable cities where road fatalities, congestion and carbon emissions are reduced—for which avoiding unnecessary trips is a crucial component. The ITS for Climate initiative could also have a potential to avoid or reduce kilometres travelled because of use of smart ICT based technology.

- **Shift:** Promoting the shift to more sustainable modes of transport and transport infrastructure is central for a number of GCAA Transport Initiatives. The objective of the UITP Declaration Climate Leadership to double the share of public transport by 2025 is an excellent example of a Shift-oriented policy. Similarly, UEMI aims to increase the share of electric vehicles in individual mobility (2-3 wheelers and light duty vehicles) in urban areas to at least 30% by 2030. On the other hand, Navigating Climate Change highlights the importance of sustainable transport infrastructure and focuses on shifting to a low-carbon inland and maritime navigation infrastructure.
- **Improve:** Most of the GCAA Transport Initiatives have a strong Improve focus in their type of actions. In some cases they are improving the efficiency and environmental performance of cars through e-mobility (e.g. Urban Electric Mobility Initiative and Zero-Emission Vehicle Alliance). For the C40 Clean Bus Declaration and UIC Low Carbon Rail Transport Challenge, and Taxis4SmartCities; the initiatives are improving the efficiency and sustainability of a certain type of vehicle/mode of transport (e.g. buses, rail and taxis) Taxis4SmartCities. As for the Aviation and Global Fuel Economy Initiative the focus is on improving the fuel efficiency and consequently carbon emission reduction. Acknowledging the importance and tremendous growth of freight emissions, the Global Green Freight Action Plan focuses on the development of green freight programs that significantly increase not only the efficiency of heavy-duty trucks but the overall freight system efficiency.

3. Objectives by type

The GCAA Transport Initiatives have different strategies to realize their objectives. Strategies related to capacity building and knowledge development are best represented, but where initiatives have included implementation it has a relatively high priority.

Initiative Name	Capacity Building	Knowledge Development	Policy Making/ Instrument	Implementation on the ground
Airport Carbon Accreditation	Medium	Medium	Low	High
Aviation's Climate Action Takes Off	Medium	Medium	High	Low
C40 Cities Clean Bus Declaration of Intent	High	Medium	Low	High
Global Fuel Economy Initiative	High	High	Low	High
Global Green Freight Action Plan	High	High	Low	High
ITS for the Climate	High	High	Low	High
Low Carbon Road and Road Transport Initiative (LC2RTI)	High	High	Medium	High
MobiliseYourCity	High	Medium	High	High
Navigating A Changing Climate	High	High	Low	High
UIC Low-Carbon Sustainable Rail Transport Challenge	Medium	Medium	Medium	High
UITP Declaration on Climate Leadership	Medium	Low	Medium	High
Urban Electric Mobility Vehicles Initiative (UEMI)	High	High	Medium	High
World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment	Medium	High	Medium	High
Worldwide Taxis4SmartCities Initiative	High	Medium	Low	High
ZEV Alliance	Medium	Medium	High	High

Table 3: GCAA Transport Initiatives Organized by Types of Objectives

High priority objectives
 Medium priority objectives
 Low priority objectives

Chapter 3 provides detailed examples of the various strategies on capacity building, knowledge development, policy making and implementation.

III. How do the GCAA Transport Initiatives measure progress?

A. Introduction

The 2015 Paris Agreement on Climate Change was a remarkable milestone as the agreement calls for a more ambitious target to move well below the two-degree scenario. For the first time, non-state actors have gained an important role to play in the implementation of the Paris Agreement through the GCAA.

Since the emergence of transport initiatives at the Climate Summit in 2014 and their subsequent formal launch at COP21, considerable effort has been focused on the setting up the organizational structure of the initiatives, obtaining additional endorsements and signatories and developing goals and targets with associated reporting framework. In 2016, the initiatives are transitioning to the next phase in which monitoring, measurement, and reporting the outputs, outcomes and impacts of their implementation will gain further in importance. The efforts of the HLC to foster and support the initiatives, and their higher profile role in COP22 is likely to further support enhanced measurement of progress in 2017.

Echoing with the bottom-up approach of the Paris Agreement in which countries submitted their targets and ambitions based on their own circumstances and capacity, the French Ministry of Ecology, Sustainable Development and Energy, has decided to adopt a non-prescriptive approach in encouraging the GCAA transport initiatives to monitor and report on their progress. Instead of setting clear parameters and reporting methodologies, initiatives are invited to develop their own approach to measure, report, and monitor their progress.

The open, non-prescriptive approach is largely welcomed by the initiatives; yet, the lack of a common framework in reporting also weakens the comparability of the already-diverse transport initiatives.

As the first step to provide a structural yet flexible reporting framework, the following section gives an overview of the internal outputs, external outcome, and external impacts of the 15 GCAA transport initiatives:

- **Internal outputs** refer to the concrete actions and specific deliverables produced within the initiative's initial partners and network. These internal outputs mostly focus on: outreach and coalition building, capacity building, knowledge development, and policy-making/ policy instruments;
- **External Outcomes** refer to the specific results anticipated by the initiative's effort to realize their goals and targets. External outcomes are intended to influence relevant stakeholders beyond the initiatives' immediate network and partners, such as transport users and policy-makers, with impacts on the city, country, or sectoral level. These outcomes are largely focusing on policy intervention and implementation;
- **External Impacts** refer to the significant effects and influence anticipated by the transport initiatives in the context of climate change and sustainable development. These impacts are quantified end results on the global level in terms of GHG emission reduction/ prevention, energy-related impacts, and financial/ economic benefits.

B. Assessment on internal outputs of the GCAA transport initiatives

Internal outputs refer to the concrete actions and specific deliverables produced within the initiative’s initial partners and network, focusing on:

- **Outreach and coalition building:** actions to increase the number of signatories, extend geographical coverage of countries/ cities committing to the initiative, or decentralize their programs from regional level to national or city level. An example is GFEI’s aim to increase the number of countries committing to take action on improving vehicle fuel economy to 100 and ITS for Climate’s goal to seek support from more than 60 ITS associations across all continents.
- **Capacity building:** actions on information exchange on good practices and lessons learned, training programs, seminars and networking activities. An example is Airport Carbon Accreditation’s media outputs, meetings and workshops to share experiences and good practices with partners or Low Carbon Road and Road Transport Initiative’s setting up of three technical committees to facilitate better adaptation/ resilience strategies, environment considerations in road projects and operations, and disaster management of its partners.
- **Knowledge development:** release of guideline documents, operational manuals, toolkits and methodologies to enhance the knowledge and facilitate the quality of actions taken by partners and relevant stakeholders. An example is the preparation of technical guidance on carbon management and development of blue carbon concept by the Navigating a Changing Climate Initiative and the publication on Aviation benefits beyond borders by the Aviation’s Climate Action Takes Off Initiative.
- **Policy-making/ policy instruments:** guidance, strategic planning or advisory for the partnering cities and countries to provide policy recommendation and solutions in the transport sector. An example is GFEI’s tailored support for partner countries to develop fuel economy policies using a global toolkit of best practice and UIC’s benchmarking and reporting effort to drive improved performance and better inform transport policy. MobiliseYourCity promotes the elaboration of Sustainable Urban Mobility Plans at local level and National Urban Mobility Policies at national level. MobiliseYourCity promotes the elaboration of Sustainable Urban Mobility Plans at local level and National Urban Mobility Policies at national level.

An overview of the internal outputs outreach and coalition building, capacity building, knowledge development, and policy-making/ policy instruments are presented in the following summary table:

Overview on Internal Output of GCAA Transport Initiatives					
GCAA Initiative	Transport	Outreach and Coalition building	Capacity Building	Knowledge development	Policy-making/ policy instrument

Overview on Internal Output of GCAA Transport Initiatives					
GCAA Initiative	Transport	Outreach and Coalition building	Capacity Building	Knowledge development	Policy-making/ policy instrument
Airport Accreditation (ACA)	Carbon	Increase airport accreditations in all regions. Partner with 3rd party stakeholders from the airport community (e.g., airlines, ground handlers, cargo, retailers, passengers). Gain wider recognition from organizations and countries' legislation (e.g. India).	Share experiences and good practices with partners through media and workshops.	Release detailed guidelines on various level of accreditation developed in accordance to GHG Protocol and ISO.	
Aviation's Action Takes Off	Climate	Concrete regional stakeholder outreach: ATAG and IATA organizing a series of educational roundtables in seven cities worldwide. ICAO also runs five Global Aviation Dialogues in Africa, Middle East, Europe and North Atlantic, Asia-Pacific and the Americas.	Build capacity in all ICAO regions to support the development and implementation of Member States' action plans under the No Country Left Behind Initiative.	Planning for concerted capacity building across the world: for developing State Action Plans and also preparing for implementation of the global market mechanism	Developed a market-based mechanism for the industry.
C40 Clean Bus Declaration	Bus	Work with Mayors and senior leadership in cities to encourage them to increase the ambition of clean bus commitments; invite more C40 cities to make clean bus commitments and sign up to the Declaration; invite MDBs, bus manufacturers and other funders to make formal commitments to support city efforts to deliver clean buses at scale	Regular sharing of experiences between signatory cities on delivery of commitments. Regular sharing of city experiences and information through calls and webinars	An annual survey of signatory cities is carried out and data on progress towards targets, technology performance etc. is collected and shared across signatory cities; For Policy-making, I would add: Using a combination of communication efforts and sharing experiences from other cities, influence the movement of bus policies towards a shift to cleaner buses in cities.	
Global Fuel Economy Initiative (GFEI)	Economy	Increase the number of committed countries to 100. Fostering new regional level programs in every continent by 2020.	Conduct global, regional and national networking and training events to exchange learning with partners and stakeholders.	GFEI also has a knowledge development aspect through the working paper series they develop and seminars they organize. GFEI also works with countries to develop fuel economy baseline data to inform policy development.	Tailor in-country support for partner countries to develop fuel economy policies using a global toolkit of best practice. Provide easy to use additional policy tools (e.g. FEPIT) to assess the costs and benefits of potential fuel economy policy options based on country context.

Overview on Internal Output of GCAA Transport Initiatives					
GCAA Initiative	Transport	Outreach and Coalition building	Capacity Building	Knowledge development	Policy-making/ policy instrument
Global Green Freight Action Plan		Develop online platform (globalgreenfreight.org) to support development, improvement, and harmonization of green freight programs.	Information exchange between existing initiatives and relevant stakeholders (4 actions). Provide guidance and capacity building for green freight program implementation (8 actions).	Integrate black carbon into green freight programs' supporting tools and methodologies (4 actions). Develop freight assessments to support the development of green freight programs and other freight policies.	
ITS for Climate		Seek support from more than 60 ITS associations across all continents. Commit national, regional and local governments to invest in ITS to face climate change.	Develop a platform and seminars to exchange good practices exchange and opportunities. Make available all reports from the Bordeaux ITS World Congress.	ERTICO ITS Observatory to collect and promote ITS success stories (work in progress). ITS4CLIMATE works on launching a research program aimed at developing a methodology and toolbox to precisely measure the impact of current and foreseen ITS projects and develop coordinated deployment plan of ITS Solutions in large cities and insulated territories	Produce guidelines for policymakers to implement more efficient ITS Solutions for climate change adaptation and mitigation.
Low Carbon Road and Road Transport Initiative (LC2RTI)			Set up 3 technical committees on Adaptation strategies/Resiliency, Environment considerations in road projects and operations, Disaster management.	Update the Disaster management manual and toolbox on risk management. Monitor climate change adaptation framework in various countries.	Guide road authorities in implementing sustainable national strategies addressing climate change.
MobiliseYourCity		Engage at least 100 cities in the elaboration or revision of a Sustainable Urban Mobility Plan (SUMP) and 20 countries in the elaboration of a National Urban Mobility Policy between 2016 and 2020.	Support developing and transition cities and countries in better urban mobility planning, providing workshops and seminars	Elaboration of a global database on sustainable urban mobility for cities through an international platform, fostering city-to-city cooperation.	Promoting the elaboration of Sustainable Urban Mobility Plans at local level and National Urban Mobility Policies and program at national level
Navigating a Changing Climate		Attract 100 Think Climate coalition supporters by 2020. Reach one million individuals involved in the sector by 2020.	Develop and provide technical guidance and web-based resources on good practices Provide a center of excellence to support the owners, operators and users of navigation infrastructure. Publish technical guidance on infrastructure adaptation and conduct associated workshops and seminars.	Create and facilitate knowledge networks, promoting the sharing of experience and good practice between state and non-state stakeholders Develop technical guidance on adaptation, on carbon management, on resilience; develop the blue carbon concept	

Overview on Internal Output of GCAA Transport Initiatives					
GCAA Initiative	Transport	Outreach and Coalition building	Capacity Building	Knowledge development	Policy-making/ policy instrument
UIC Low Carbon Rail Transport Challenge		Seek partnership with the private sector, national governments and international institutions.	Three yearly meetings of the worldwide energy and CO ₂ expert network and global conferences on rail sector energy efficiency.	Harmonization for the calculation of embodied CO ₂ in rail infrastructure (in progress).	Benchmarking and reporting to drive improved performance and better inform transport policy.
UITP Declaration on Climate Change Leadership		2/3 of actions are undertaken in Europe.	21% actions on Awareness and action (stakeholders engagement and development of carbon reduction strategies)		
World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment		Double list of cities and regions with concrete targets in the next years.	Maintain global networks, "Scientists for Cycling" and "Cities for Cyclists". Organize annual global summit on cycling "Velocity".	Collect data on modal share of cycling from at least 100 partner cities and regions from all continents (Oct 2015). Conduct study to calculate the impact of cycling worldwide (released Nov 2015).	
Worldwide Taxis4SmartCities			Develop awareness-raising campaign, trainings, and financial incentive programs to promote low-emission vehicles among drivers. Taxis4SmartCities.org is to be a platform on which members exchange best practices and share experiences.		Production of the first global guidelines for public authorities to accelerate the energy transition of taxis
Urban Electric Mobility Initiative		Partnership with urban mobility initiatives and projects to seek synergies and support twinning activities	Webinars and capacity building workshops	Toolbox on the integration of electric mobility into a wider sustainable urban mobility concept	Policy advice to pilot cities in China, India, Mexico and Brazil
ZEV Alliance		Recruitment of additional governments; established website to publicize activities	Expanding network of proactive governments on electric vehicle through international meetings and recruitment	Governments commission and guide research to improve electric vehicle policy, incentives, and infrastructure activities	Governments actively working on designing and assessing current electric vehicle policy instruments

Table 4: Overview of Internal Outputs of GCAA Transport Initiatives

As transport initiatives are transitioning from the initial phase of organizational development, considerable effort is now being made to expand the partner network through outreach and coalition building. Several of the initiatives have set quantified targets to reach a certain number of signatories or committed partners within a certain timeframe (e.g. GFEI, MobiliseYourCity, and Navigating A Changing Climate) while some initiatives seek to enhance cooperation with state actors and the private sector to consolidate actual implementation of their causes (e.g. ITS for Climate and UIC).

Initiatives actively incorporate capacity building through events and workshops (e.g. ACA, GFEI, MobiliseYourCity and WCA and ECF Commitment), awareness campaigns (e.g. UITP and Worldwide

Taxis4SmartCities), setting up technical committees (e.g. LC2RTI and Navigating a Changing Climate), or setting up a center of excellence to support the wider waterborne transport infrastructure sector (Navigating a Changing Climate).

In terms of internal outputs on knowledge development, transport initiatives focus their effort on collecting data and reporting the state-of-the-art of their relevant industry (e.g. LC2RTI and WCA and ECF Commitment), collecting good practices and case studies (e.g. ITS for Climate), and developing technical guidelines and tools to enhance quality of implementation (e.g. ACA, Global Green Freight Action Plan and UIC). Most of these outputs are not to be produced on a regular basis, but Aviation's Climate Action Takes Off initiative does produce knowledge product on the sustainability, eco growth, eco benefits, social development aspects of the aviation sector on a biannual basis.

Internal outputs for policy-making and policy instruments have so far received relatively less attention in the planning of the transport initiatives. This could be because most initiatives are non-state actors with no direct access to policy-making processes in their respective countries. MobiliseYourCity, however, works directly with local and national governments in order to support the implementation of a more sustainable urban mobility in beneficiary countries/cities. LC2RTI is one of the new initiatives that can provide guidance to road authorities in implementing sustainable national strategies addressing climate change, whereas GFEL is also able to tailor in-country support for partner countries to develop fuel economy policies using a global toolkit of best practice and impact modelling tools. In order to maximize the policy impact of the initiatives in the next years the outputs for policy making will need to be improved.

C. Assessment on External Outcomes and Impacts of the GCAA transport initiatives

External Outcomes refer to the specific results anticipated by the initiative's effort to realize their goals and targets. External outcomes are intended to influence relevant stakeholders beyond the initiatives' immediate network and partners, such as transport users and policy-makers, with impacts on the city, country, or sectoral level. These outcomes are largely focusing on policy intervention and implementation:

- **Policy intervention:** analysis and development of specific policy recommendations for state-actors to incorporate sustainable transport elements in the policy-making process. An example is UITP's action to development 32 carbon reduction strategies for the public transport sector and MobiliseYourCity's goal to build support and capacity to implement national sustainable urban mobility policies based on SUMP's at local level in 12 to 15 developing countries from 2016-2020.
- **Implementation:** the execution of projects and specific decision to bring about impacts to the transport sector and its general users; as an example, C40 sets target to incorporate over 160,000 buses in their fleet by 2020, of which they have committed to switching 42,000 buses to low emission. UEMI aims to increase the market share of electric vehicles in cities to at least 30% of all new vehicles (including cars and motorized 2-3 wheelers) sold on annual basis by

2030. The Worldwide Taxis4SmartCities also aims to develop and implement incentive schemes for drivers and customers in line with the global environment commitment.

An overview of the external outcomes on policy intervention and implementation are presented in the following summary table:

Overview on External Outcomes of GCAA Transport Initiatives		
Initiative	Policy Intervention	Implementation on the Ground
Airport Carbon Accreditation (ACA)		Implement a number of projects in airports relating to building and energy efficiency, installation of renewable energy, replacement of air-cooled with water-cooled chillers, power plant modernization and cogeneration, LED lights, vehicle fleet modernization, etc.
Aviation's Climate Action Takes Off		Adopted a global market-based mechanism for the aviation sector: the world's first for any sector. Deliver the world's first CO ₂ efficiency Standard for aircraft in February 2016. New standard will come into effect from 2020 and will apply to all new aircraft. Current aircraft will be phased in to the standard.
C40 Clean Bus Declaration		Cities that are part of the initiative will incorporate over 160,000 buses in their fleet by 2020, of which they have committed to switching 42,000 buses to low emission.
Global Fuel Economy Initiative (GFEI)	Country stakeholders develop policy options, including through FEPIT tool which are presented to government – for example in Kenya, Ethiopia, Indonesia and Georgia.	Policy change is implemented through legislation or fiscal reform. GFEI tracks the change in average fuel economy of registered vehicles over time to assess impact in line with our goal of reducing average fuel economy by 50% by 2030 for new vehicles.
Global Green Freight Action Plan		The initiative supports the development and improvement of green freight programs in many countries and regions, including Europe, Mexico, Brazil, China, New Zealand, Vietnam, and Africa's Northern Corridor countries, amongst others.
MobiliseYourCity	Build support and capacity to implement National Urban Mobility Policies and programmes in 20 countries and 100 Sustainable Urban Mobility Plans in cities in the developing and emerging world by 2020.	Design more livable and prosperous cities for all reduce congestions, road fatalities, noise and air pollution, and CO ₂ emissions.
Navigating a Changing Climate		Promote shift to low carbon infrastructure through consolidation of carbon accounting methodologies for navigation infrastructure. Promote adaptation and seek integrated and sustainable solutions and policies under the "Working with Nature" program (2 actions in 2016-2017).
UIC Low Carbon Rail Transport Challenge		50% increase in rail's share of passenger transportation by 2030, and doubling by 2050 (2010 baseline). Rail freight activity equal to that of road freight by 2030, and exceeding road freight volumes by 50% by 2050.
UITP Declaration on Climate Change Leadership	Develop 32 carbon reduction strategies.	Double the market share of public transport by 2025. Gain a greater role for public transport in mobility to decrease carbon footprint as well as reducing corporate carbon footprint of regions. 86% of projects aimed at full-scale / city-wide experimentation. The rest are pilot projects, from which 31 pilot tests of hydrogen and electric buses footprint. 30% actions on Buses (clean fuels, efficiency, new lines and low carbon buses); 22% on Trains, trams, metros (new lines and train cars, vehicle efficiency). 7% actions on Combined

Overview on External Outcomes of GCAA Transport Initiatives		
Initiative	Policy Intervention	Implementation on the Ground
		mobility (enhancements to walking and cycling facilities, car and bike-sharing schemes)
Urban Electric Mobility Initiative (UEMI)		Increase the market share of electric vehicles in cities to at least 30% of all new vehicles (including cars and motorized 2-3 wheelers) sold on annual basis by 2030 while simultaneously developing the enabling infrastructure for their effective use.
World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment	Create an advocacy document for authorities and civil society organizations to support cities and regions policies towards an ambitious increase of the modal share of cycling.	
Worldwide Taxis4SmartCities	Raise the awareness of public authorities on the constraints that could impede the development of low-emissions taxis (ex.: lack of well-positioned fast charging points), the need for professional taxi drivers, and the need to ease the use of taxis as complementary with public transport means	Develop and implement incentive schemes for drivers and customers in line with the global environment commitment. Create tailor-made offers by partner manufacturers. Bamboo Club: 33% of new vehicles entering the fleet emit less than 60g of CO ₂ / km by 2020. Oak Tree Club: 50% of new vehicles entering the fleet emit less than 60g of CO ₂ / km by 2020. Sequoia Club: 50% of new vehicles entering the fleet emit less than 60g of CO ₂ / km by 2020 and 100% of new vehicles entering the fleet emit less than 20g of CO ₂ / km by 2030.
ZEV Alliance	Collaborate on policies and actions that advance the investment and innovation needed to achieve ZEV targets.	Sustained government policy support for electric vehicles in the near- and mid-term. Commit to zero (local) emission vehicles making up 100% of passenger vehicle sales as fast as possible and no later than 2050 in the ZEV members.
*Initiatives with no specified external outcomes:		
ITS for Climate, Low Carbon Road and Road Transport Initiative (LC2RTI)		

Table 5: Overview on External Outcomes of GCAA Transport Initiatives

The implementation in this table refers to the changes that take place on the ground. A large part of the transport initiatives have set implementation oriented outcome statements, including an increase in modal shift (e.g. UIC and UITP), share of market sales (e.g. UEMI, ZEV Alliance), implementation of more sustainable infrastructure (e.g. ACA and Navigating a Changing Climate), switching to more energy-efficient vehicles (e.g. Aviation's Climate Action Takes off and C40 Declaration), or providing financial incentives (e.g. Worldwide Taxi4SmartCities). Some are project-based (e.g. ACA, GFEI) and some apply to the whole sector or industry (e.g. Aviation's Climate Action Takes Off, UIC, UITP). However, there are also other initiatives which have a more capacity building or policy intervention focus, and thus do not have the same kind of implementation component.

In contrast, external outcomes on policy intervention are fewer in numbers. As discussed previously, most transport initiatives do not have direct, institutionalized channels and access to state-actors and policy-makers (except MobiliseYourCity that directly works with local and national governments), hence developing concrete actions to deliver specific outcome to influence the policy-making process is particularly challenging. Methods to influence policy include releasing advocacy documents (e.g. WCA and ECF Commitment), conducting policy impact assessment (e.g. GFEI), or developing specific carbon reduction strategies (e.g. UITP). In certain cases such as the ZEV Alliance and MobiliseYourCity, the

initiatives are able to work on city, subnational, and country levels to support the policy implementation in their respective areas.

It might also be that the number of policy related outcome statements is fewer because of the emphasis placed by GCAA outreach in demonstrating concrete impacts. This was also used as one of the criteria in selecting the GCAA Transport Initiatives in 2014 and 2015.

Overall the number of initiatives having set more or less concrete outcome expectations is slightly below the number that have set internal output statements.

External Impacts refer to the significant effects and influence anticipated by the transport initiatives in the context of climate change and sustainable development. These impacts are quantified end results on the global level in terms of GHG emission reduction/ prevention, energy-related impacts, and financial/ economic benefits:

- **GHG emission reduction/ prevention:** actions that will result in a quantified amount of CO₂eq. prevented or reduced. An example is, C40 initiative estimation that the GHG savings would be almost 900,000 tons per year, with a potential overall savings of 2.8 m tons each year if the cities managed to switch their entire bus fleet;
- **Energy-related impacts:** actions that will result in quantified amount in energy consumption reduction or facilitate the transition to more sustainable types of energy. For example, the UIC Low Carbon Rail Transport Challenge aims to achieve a 50% reduction in energy consumption from train operations by 2030, and 60% by 2050 (1990 baseline);
- **Finance impacts:** actions that will result in greater investment in sustainable transport modes. For example, 51% of actions of UITP’s initiative concern investing in sustainable transport modes and 20% actions of its actions are on Improve and investment in infrastructure (lighting, energy production, use of green electricity, buildings, stations).

Overview on External Impacts of GCAA Transport Initiatives			
Initiative		GHG impacts	Energy-related impacts
Airport (ACA)	Carbon Accreditation	50 carbon neutral airports in Europe by 2030. As of September 2016, 170 airports worldwide have been certified, representing more than 36% of world air passenger traffic. In 2015/2016 accredited airports reduced CO ₂ emissions under their direct control by 206,000 tons compared to the average emissions of the 3 previous years. Emissions per passenger have decreased by 7% from 2.26 kg CO ₂ in 2014/2015 to 2.10 kg CO ₂ in 2015/2016. 26 airports have now achieved carbon neutrality, including the first airports in North America and Asia (i.e., Dallas Fort Worth Airport and New Delhi Airport)	Increased energy efficiency of airport operations.

Overview on External Impacts of GCAA Transport Initiatives			
Initiative	GHG impacts	Energy-related impacts	Finance impacts
Aviation's Climate Action Takes Off	Achieve Carbon-neutral growth through a global and market-based mechanism, as part of a basket of aviation CO ₂ -reduction measures.		
C40 Clean Bus Declaration	GHG savings will be almost 900,000 tons per year, with a potential overall savings of 2.8 m tons each year if the cities managed to switch their entire bus fleet		
Global Fuel Economy Initiative (GFEI)	Doubling the efficiency of all new light duty vehicles by 2030 and the complete global vehicle fleet by 2050, would save 0.5Gt of CO ₂ a year by 2025 and 1.5Gt a year by 2050, resulting in total CO ₂ savings of 33Gt by 2050.	Doubling the efficiency of all new light duty vehicles by 2030 and the complete global vehicle fleet by 2050. 30% reduction in average L/100km by 2030 in all new cars globally by 2030. 50% reduction in average L/100km in all cars globally by 2050.	Fuel savings worth over US\$8 trillion.
Global Green Freight Action Plan	Reduce emissions of carbon dioxide, black carbon and other pollutants in the freight sector by 2025. Our estimates are that green freight programs can result in almost 100 MMT annually if implemented by G20 nations.	Targeting fuel savings and cost reduction for business. Green freight programs can result in 5-10% efficiency gains in targeted fleets.	
MobiliseYourCity	Improve urban transport for both passengers and goods and reduce CO ₂ emissions by at least 50% by 2050		
UIC Low Carbon Rail Transport Challenge	50% reductions in CO ₂ emissions from train operations by 2030, and 75% by 2050 (per pass.km and per ton.km, 1990 baseline)	50% reduction in energy consumption from train operations by 2030, and 60% by 2050 (1990 baseline)	
UITP Declaration on Climate Change Leadership	Prevent half a billion tons of CO ₂ e in 2025 by doubling the market share of public transport by 2025.		51% of actions concern investing in sustainable transport modes. 20% actions on Improve and investment in infrastructure (lighting, energy production, use of green electricity, buildings, stations).
Urban Electric Mobility Initiative (UEMI)	Achieve a 30% reduction of CO ₂ emissions in urban areas by 2030.		
Worldwide Taxis4SmartCities		Accelerating the energy transition of their vehicle fleet by 2020 and 2030.	
ZEV Alliance	Over 125 million tons CO ₂ per year in 2030, and over 1.5 billion tons CO ₂ per year in 2050, in climate change mitigation when including lifecycle impact of electric vehicles	Over 20 million barrels of reduced oil consumption by 2050 with the transition to electric vehicles.	
*Initiatives with no specific external impacts:			
ITS for Climate, Low Carbon Road and Road Transport Initiative (LC2RTI), Navigating a Changing Climate, WCA and ECF Commitment			

Table 6: Overview on External Impacts of GCAA Transport Initiatives

In terms of setting planning objectives, the initiatives have given least priority in defining impacts of their initiatives. So far 10 out of 15 initiatives have included impact related objectives in their planning. Where impact has been included this is mostly through the inclusion of Greenhouse Gas related objectives/impacts. Very little attention has been given to the inclusion of Sustainable Development related impacts, which in many cases might be instrumental in promoting the implementation of the initiatives.

D. Responsibility for Assessing Progress

With the current bottom-up, non-descriptive approach, methods to measure, reporting and monitoring progress of the transport initiatives are mostly both internal and informal. While not all initiatives have regular procedures to assess their outputs, outcomes and impacts, some initiatives have begun to set up reporting system to demonstrate their progress. For example, the Airport Carbon Accreditation has decided to issue [annual reports](#) to provide all the key figures for the initiative, including the number of airports accredited, the collective reduction achieved and cases studies detailing some of the innovative and original ways that airports have achieved their accreditation. As a way to incorporate a more external and independent review, the initiative is also conducting regular assessment through an Airport Task Force and the analysis will be reviewed by the Independent Advisory Board. UIC also has decided to take up e annual reporting progress with third party verification of data starting from 2016.

Other actions taken on assessing progress is largely internal or informal. For example, GFEI includes detailed reporting requirements in its contracts with partnering countries, and monitors the external impact of policy through on-going reports looking average fuel economy rates over time. The WCA and ECF Commitment will also monitor at least 70 cities and regions in its network on the development of modal share of cycling on the initiative's website.

E. Conclusions

The bottom-up approach for monitoring progress is much welcomed by the initiatives. As the 15 initiatives cover a wide range of transport sectors with varying targets in different timeframe, setting a common framework for monitoring would be a challenging task and forcing them to fit their progress into a straight set of requirements would defeat the spirit of the GCAA and ultimately undermine the commitment of the respective organizations to the implementation of their initiatives.

Delegating the responsibility for developing a monitoring and reporting methodology to the initiatives can greatly increase the willingness and likelihood for them to measure and report on the progress.

For example, GFEI tracks its progress by publishing regular reports (at least biannually) on vehicle fuel economy on both global level and country level; PIANC also utilize the six monthly meetings under the Think Climate Coalition as opportunities for the initiative to report and document the progress of their partners. UIC has also initiated its annual reporting procedures with third-party verification of data and developed a global registry of modal shift projects in 2016. The non-descriptive approach will encourage flexibility in reporting without taking away the autonomy of transport initiatives.

Nevertheless, the lack of a clear set of guidelines for reporting weakens the comparability between the initiatives. Some initiatives have set quantified targets to reducing/ preventing GHG emissions (e.g. C40 Clean Bus Declaration, GFEI); some have set targets for modal shift (e.g. WCA and ECF Commitment, UIC Low Carbon Sustainable Rail Transport Challenge, UITP Declaration on Climate Change Leadership); some focuses on actions in capacity building and policy intervention (e.g. MobiliseYourCity), and some on knowledge development (e.g. PIANC Navigating a Changing Climate). The distances of the objectives and intended impacts between these initiatives are wide to begin with, and the lack of a common framework to guide what type of information and data are required to measure, monitor, and report on these initiatives' impacts further widen the gaps between them.

The approach piloted in this report to distinguish between various categories of internal outputs and external outcomes and impacts can help the initiatives to better structure the planning of their initiatives, without taking away in a major way control over the planning and reporting of the initiatives. It is noted however that inducing a stronger sense of responsibility for assessing progress can be a challenge as some of the initiatives have not set up a dedicated website as a way to present their progress to begin with.

Lastly, it is also observed that policy-related internal outputs and external outcomes have received relatively less attention among the transport initiatives. The lack of focus on policy instrument development and strategic advisory is due to the fact that many initiatives do not have institutionalized channels with state actors and policy-makers, making it difficult for them to offer policy recommendations that would be taken into consideration in the long run.

IV. GCAA Transport Initiatives and the Link to SDG Related Transport Targets

A. Introduction

The GCAA Transport Initiatives were developed as climate change oriented commitments. With the increasing emphasis on implementation of the initiatives it becomes increasingly important to consider how to optimize the chances for effective and timely implementation of the initiatives. Buy-in from policy makers for the initiatives is of key importance. Experience has demonstrated that policy and investment decisions in transport are usually not made on the basis of one factor but that multiple criteria play a role. Climate change is in fact in many countries, especially the developing world, not the most important deciding factor in policy making on transport and investment related decisions in many countries, especially the developing world.

This chapter explores the linkage between the 15 initiatives and the transport related targets under the SDGs adopted last year in September 2015 as guide for sustainable development in the period up to 2030. In a second section the relevance of the Habitat III Conference for those initiatives with an urban focus is explored.

B. GCAA Initiatives and SDG targets

The SLoCaT Partnership has identified five SDG targets with direct implications for the transport sector, and seven SDG targets with indirect implications for transport; the table below demonstrates linkages between the 15 GCAA Transport Initiatives and these 12 SDG targets:

GCAA Transport Initiatives	Sustainable Development Goals (SDGs) (Direct Targets)					Sustainable Development Goals (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												
C40 Cities Clean Bus Declaration of Intent												

GCAA Transport Initiatives	Sustainable Development Goals (SDGs) (Direct Targets)					Sustainable Development Goals (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
Global Fuel Economy Initiative												
Global Green Freight Action Plan												
ITS for the Climate												
Low Carbon Road and Road Transport Initiative (LC2RTI)												
MobiliseYourCity												
Navigating A Changing Climate												
UIC Low-Carbon Sustainable Rail Transport Challenge												
UITP Declaration on Climate Leadership												
Urban Electric Mobility Vehicles Initiative (UEMI)												
World Cycling Alliance (WCA) and European Cyclists' Federation (ECF) Commitment												
Worldwide Taxis4SmartCities Initiative												
ZEV Alliance												

Table 7: GCAA Transport initiatives and SDGs

Overall the strongest linkage exists with the linked SDG targets on energy efficiency and climate change. On the latter more so for mitigation than for adaptation.

Those initiatives that have a focus on transport infrastructure and systems (e.g. C40 Cities Clean Bus Declaration, the UITP Declaration on Climate Leadership, and the WCA and ECF Commitment) score well on the improving urban access related targets and should be able to actively explore this linkage in outreach to policy makers and investment decision makers.

Initiatives with a technology oriented focus, e.g. improving fuel economy or accelerating the introduction of e-mobility have a strong linkage with the air pollution reduction target under the SDGs. The same applies to initiatives that promote mode shift such as railways, public transport and cycling.

There is some linkage with the road safety target through the use of technology, more careful driving, planning and modal shift. The 15 initiatives have in common that they do not substantially contribute to realizing the (indirect) transport targets with mostly a rural focus: Agricultural Productivity and Access to Safe Drinking Water.

The focus of the analysis has been the linkage between transport related SDG targets and the GCAA Transport Initiatives. Several of the initiatives also have linkages to other SDGs that are not directly related to transport. For example, a number of the initiatives contribute to SDG 1 “End poverty in all its forms everywhere” by developing employment opportunities through new investments and creating access to jobs. Similarly, some of the initiatives such as cycling and public transport create access to schools for children, especially girls in rural and urban areas and hence contribute the SDG 3 “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. The linkage between the transport initiatives and non-transport related SDGs will be further explored in the future reporting.

C. Habitat 3 and the GCAA Transport Initiatives

[Habitat III](#) is the third United Nations Conference on Housing and Sustainable Urban Development which is held every 20 years and took place this year in Quito, Ecuador, from 17 – 20 October 2016. In 2012 The United Nations General Assembly decided to convene, the Habitat III Conference to reinvigorate the global commitment to sustainable urbanization, to focus on the implementation of a [New Urban Agenda](#).

Habitat III has taken on particular importance because it will be the first United Nations global summit after the adoption of the 2030 Agenda for Sustainable Development (including the Sustainable Development Goals) and the Paris Agreement on Climate Change. Both of these agreements, while they have been agreed by UN member states, will require urgent implementation and much of the action will be required in urban areas, and transport has a key role.

Cities already face a number of significant challenges (informal settlements, economic inequality, social exclusion, financing and air quality problems etc.). Looking ahead there are more challenges, by 2050 an additional 2.5 billion people will be living in cities and cities will need to adapt to a changing climate. With cities already being responsible for 70% of global greenhouse gas emission they will also need to be on the frontline in reducing emissions. The scale of the challenges that cities face, the time and investment needed to transform cities means that we can only transform cities once. A single global urban transformational roadmap is required that guides cities to simultaneously tackle their social, economic and environmental threats. For the context of this report this implies integrating action to address climate change (i.e. GCAA Transport Initiatives) with broader efforts to implement the transport related SDG targets.

Several of the GCAA Transport Initiatives contribute to several important topics under discussion in Habitat III such as inequality, engagement, economic development and improving access to goods and services. They highlight the potential of transport initiatives to contribute to the transformation and broader sustainable development of cities. For example:

- **MobiliseYourCity**, through supporting developing and emerging countries to develop and implement Sustainable Urban Mobility Plans and National Urban Transport Policies. They will not only reduce greenhouse gas emissions but will also improve air quality, road safety and improving access to urban goods, services and opportunities for those with special needs.

- **The Global Green Freight Action Plan**, will reduce emissions of carbon dioxide, black carbon and other pollutants in the freight sector by 2025 but by reducing fuel costs and optimizing vehicle utilization will make products cheaper and reduce congestion.
- **The Global Fuel Economy Initiative** and (5) **Urban Electric Mobility Initiative and ZEV Alliance** develop sustainable and efficient transport reducing the financial, environmental, and public health costs of inefficient mobility, congestion, air pollution, urban heat island effect, and noise.

The GCAA Transport Initiatives were very important tools that contributed to the successful advocacy on transport and Habitat III to show that there are practical, tested and successful sustainable transport measures that can deliver benefits and show that the transport industry, civil society and public authorities can work together. This helped ensure that sustainable transport got the place it deserved in the discussions and the outcome text of Habitat III, the New Urban Agenda. At the same time the GCAA Transport initiatives gain momentum by aligning themselves with the Habitat III process and the planned follow up activities such as the Quito Implementation Plan. It should enable them to interact with cities and acquire additional signatories or implementing partners for their initiatives. They made use of the outreach efforts of the PPMC in the Habitat III process including the Transport Days at 3rd Prep. Com. Meeting on 26th July 2016 in Surabaya, Indonesia and the at Habitat III conference itself on 19th October 2016 in Quito, Ecuador to disseminate their results and make new contacts.

Looking beyond Habitat III, the successful outcome of Habitat III from a sustainable urban mobility perspective will hopefully catalyze cities throughout the world to implement a roadmap to ensure sustainable urban development. This will require resources and local capacity building in the next years. The GCAA Transport Initiatives will be invaluable in helping cities build meaningful partnerships with the transport community and help them make sustainable urban development a reality.

The urban related transport initiatives should be able to benefit from addition support being provided by governments to implement the New Urban Agenda e.g. the German governments “Transforming Urban Transport Initiative” (TUMI) and will be able to contribute to the Habitat III tracking and monitoring processes being established.

V. GCAA Transport Initiatives and their Link to Nationally Determined Contributions

A. Introduction

In COP 21, after years of negotiation, countries agreed to limit global temperature rise to well below 2 degrees Celsius, while pursuing efforts to keep temperature rise to 1.5 degrees⁵. The Nationally Determined Contributions⁶ (NDCs) are a crucial element of the Paris Agreement as it communicates country-level commitments and strategies to reduce carbon emissions and increase resilience for the post-2020 period. NDCs introduce a bottom-up process to define country-level mitigation and adaptation efforts that are guided by national development priorities, equity, and common responsibility.

Investigations of submitted NDCs in recent months carried out by a number of research institutions point to a projected economy-wide emission gap of 10-17 billion tons between committed NDCs and the Two-Degree Scenario (2DS) scenario by 2030⁷. Further, a recent SLoCaT analysis reveals that the mitigation ambition in current NDCs will not be sufficient to achieve a 2DS within the transport sector by 2030⁸. Thus, to achieve COP 21 goal requires a truly global response from all Parties and non-Party stakeholders i.e. governments, cities, businesses, investors and civil society and all sectors.

B. GCAA Initiatives and NDCs

It is very much in the interest of the GCAA Transport Initiatives to be able to make use of the NDCs submitted to increase country buy in to their respective initiatives. An association with an NDC can help the initiatives get policy support and in some cases also investment support to implement their initiative in a greater number of countries.

In return countries that have included specific transport measures in their NDCs, but who do not have detailed supporting policies and implementation plans can benefit greatly from the GCAA Transport Initiatives to ensure that prior to the formal start of the NDCs in 2020 they will have realistic implementation policies and plans.

⁵ [195 Nations Set Path to Keep Temperature Rise Well Below 2 Degrees Celsius](#)

⁶ If a Party has communicated an intended nationally determined contribution (INDC) prior to joining the Agreement, then its INDC shall be considered the Party's first NDC under the Agreement unless that Party decides otherwise. In this analysis, we assume all INDC's as NDC's.

⁷ [Intended Nationally-Determined Contributions \(INDCs\) Offer Opportunities for Ambitious Action on Transport and Climate Change](#)

⁸ Emission Reduction Potential in the Transport Sector by 2030

The analysis in this report tries to correlate and connect the various GCAA initiatives with NDCs to highlight the gaps and the synergy in the post 2020 agenda.

Detailed analysis of 160 NDCs⁹ reveals that about 75% of NDCs have proposed transport sector as a mitigation source and about 67% of NDCs have highlighted specific transport mitigation measures. Our analysis (Figure 1) shows that about 63% of NDCs are directly or indirectly connected with the transport sector GCAA initiatives.

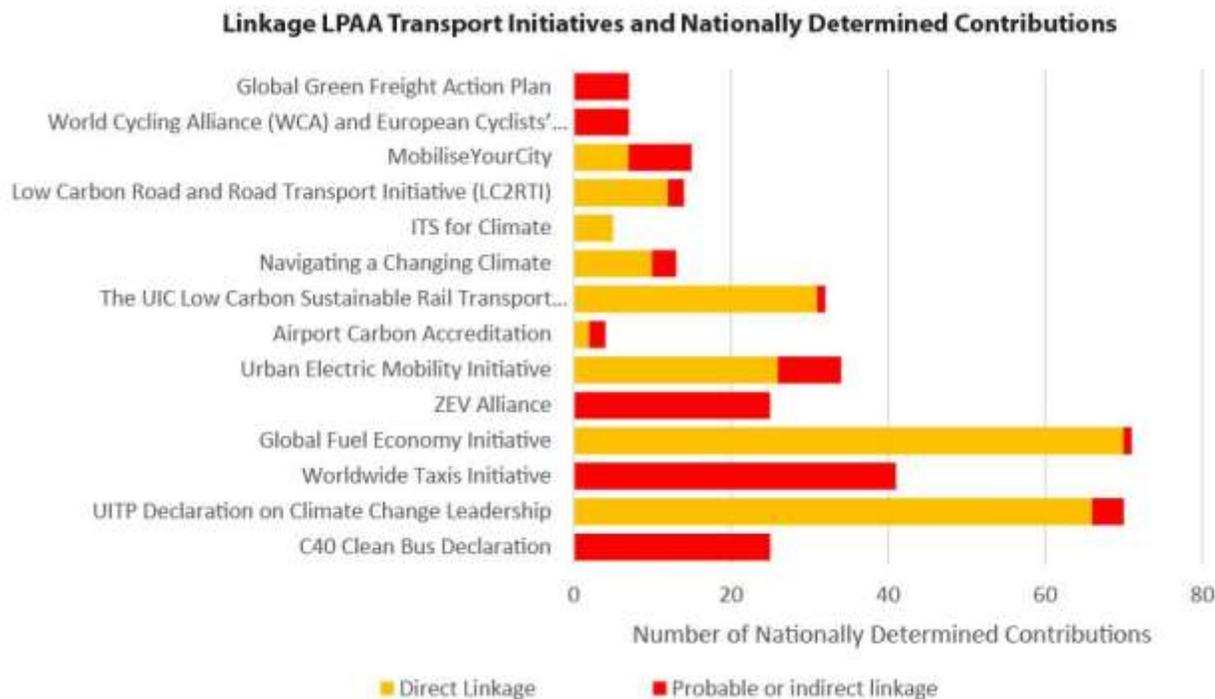


Figure 1: Number of NDCs that contain proposed measures linked to the GCAA Transport initiatives (Direct and Indirect)¹⁰

74% of NDCs make reference to 1 to 5 GCAA Transport Initiatives related transport mitigation activities, 25% make reference to 6 to 10 GCAA related initiatives and only 1 NDC i.e. Bhutan make reference to 11 GCAA related initiatives¹¹.

⁹ As of 23 April 2016, 162 INDCs are submitted. Due to lack of translation from Arabic – Iraq and Kuwait INDCs were not included in the analysis. http://www.ppmc-transport.org/overview_indcs/

¹⁰ We consider both - definite confirmation of link of the initiative with the country and probable and/or indirect link of the initiative with the country. This could also mean that country could be a potential partner of the initiative

¹¹ “Aviation’s Climate Action Takes Off” includes initiatives related to “international aviation” including the development of a global market-based mechanism for international aviation. By definition, international aviation cannot be part of the UNFCCC NDCs and therefore this graph and the analysis in this section doesn’t include the initiative “Aviation’s Climate Action Takes Off”.

Among all the GCAA initiatives, GFEI and UITP Declaration on Climate Change Leadership are the ones that deal with activities that are mentioned the most, with about 44% of NDC’s proposing activities related to fuel economy and public transport improvement.

C. Case Studies

1. UIC Low Carbon Rail Transport Challenge

The International Railway Association (UIC) has proposed an ambitious transport sector challenge in the framework of the green growth agenda and climate change perspective for 2030 and 2050. Under this challenge, ambitious and achievable targets have been proposed for the rail sector in form of mode share, efficiency and reductions in greenhouse gas (GHG) emissions. The targets proposed are highlighted in Table 5. These targets are compatible with International Energy Agency’s (IEA) 2DS scenario requirements for the transport sector i.e. ‘two-degree Celsius scenario’ (2DS), which considers policies and investments necessary to serve the IEA-recommended target to limit the rise in long-term average global temperature to 2°C. IEA has estimated a requirement of 52% reduction in energy intensity of railways in 2030 and 62% in 2050, compared to 1990 values in the 2DS scenario¹². Further, it estimates a global rail infrastructure expansion to 1.5 million track-km & annual rail travel to increase by more than 6.1 trillion passenger kilometer travel and ton-kilometer travel by 2050¹³.

Challenge	Target
Reduction in specific final energy consumption from train operations	50% reduction by 2030 (relative to a 1990 baseline)
	60% reduction by 2050 (relative to a 1990 baseline)
Reduction in specific average CO ₂ emissions from train operations:	50% reduction by 2030 (relative to a 1990 baseline)
	75% reduction by 2050 (relative to a 1990 baseline)
Shifting transport activity towards low carbon rail transport (modal shift) - Railway share of passenger transport (passenger/km)	50% increase by 2030 (relative to a 2010 baseline)
	100% increase (doubling) by 2050 (relative to a 2010 baseline)
Shifting transport activity towards low carbon rail transport (modal shift) - Railway share of freight land transport (ton/km)	Equal with road by 2030
	50% greater than road by 2050

Table 8: UIC Low Carbon Rail Transport Challenge Targets

A detailed review of 160 NDCs¹⁴ reveals that about 75% of NDCs have proposed transport sector as a mitigation source and about 67% of NDCs have highlighted specific transport mitigation measure. However, only about 19% of NDCs have communicated improvement in railways i.e. about 32 NDCs¹⁵ prioritize railway improvement as a significant emission mitigation measure. The proposed railway improvement mitigation efforts relate to shifting transport activity towards low carbon rail transport, improving energy efficiency of railways and reduction in specific average CO₂ emissions from train operations. Table 6 provides the summary of NDC railway improvement mitigation commitments and

¹² [UIC Low Carbon Rail Challenge](#)

¹³ [Global Land Transport Infrastructure Requirements - Estimating road and railway infrastructure capacity and costs to 2050](#)

¹⁴ As of 11 April 2016, 161 INDCs are submitted. Due to lack of translation from Arabic – Iraq and Kuwait NDCs were not included in the analysis

¹⁵ 30 countries have directly committed to improvement in railway network and about 2 countries may have indicated or indirectly referred to improvement in railways

the following table provides the typology of heavy-rail improvement measures proposed under the NDC's.

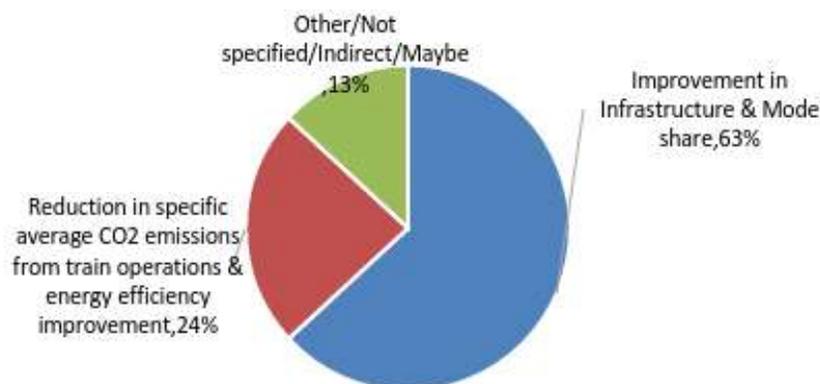


Figure 2: Typology of NDC Railway Measures

Country	Improvement in Infrastructure & Mode share	Reduction in specific average CO ₂ emissions from train operations & energy efficiency improvement	Other/Not specified/Indirect/Maybe
Argentina	Reactivation of passenger and cargo railways, the renewal and improvement rail infrastructure	Incorporation of technologies and services that contribute to the modernization and efficiency of the rail public transport system	Argentina has developed a regulatory framework (Law No. 27,132) that declares railways to be of national public interest and a priority objective for Argentina.
Azerbaijan	Development of metro transport and increase of a number of metro stations	Electrification of railway lines and the transition to alternative current system in traction	
Cameroon			Development of plans of transit developing intra and inter- low carbon
Costa Rica	Construction of an inter-city electric train		
China			To promote the share of public transport in motorized travel in big-and medium-sized cities reaching 30% by 2020
Djibouti	Construction of a 752 km railway line between Djibouti City and Addis Ababa. It is scheduled to be put in service in October 2015		
Equatorial Guinea			Promotion of urban and intercity public transport to reduce emissions
Egypt	Increase share of railways passenger transport & mode shift of freight to railways		
Eritrea	Develop rail transportation to cover about 400km for mass transportation of freight with estimated cost of about US\$1 billion		

Country	Improvement in Infrastructure & Mode share	Reduction in specific average CO ₂ emissions from train operations & energy efficiency improvement	Other/Not specified/Indirect/Maybe
Ethiopia	Investment in improved transportation systems (e.g. railway) that utilize clean and renewable energy		Climate change compatible construction code for railways
Ghana	Conditional mitigation action proposes expansion of inter and intra city mass transportation modes (Rail and bus transit system) in 4 cities		
India	To increase the share of Railways in total land transportation from 36% to 45 %. Dedicated Freight Corridors (DFCs) have been introduced across the country. In the first phase, two corridors viz. 1520 km Mumbai-Delhi (Western Dedicated Freight Corridor) and 1856 km Ludhiana-Dankuni (Eastern Dedicated Freight Corridor) are being constructed	With a number of energy efficiency measures undertaken, Indian Railways has achieved 19.7% improvement in Specific Fuel Consumption for Freight Service Locomotives and 21.2% improvement for Coaching Service Locomotives during the last 10 years. Indian Railways is also installing solar power on its land and rooftops of coaches. The DFC is expected to reduce emissions by about 457 million ton CO ₂ over a 30-year period.	Railways to be included in market based energy efficiency trading mechanism
Israel	Development of public transport systems in major metropolitan areas such as the construction of the Tel Aviv metropolitan light rail; the extension of the intercity rail system and of the Jerusalem light rail		
Japan	Modal shift to railway	Energy consumption efficiency improvement of railways	
Jordan	Implement the national railway system which would be a cornerstone of the planned multimodal network that would play a major role in the ease of the transport of goods within the country and the surrounding region		
Papua New Guinea	Future introduction of infrastructure for more sophisticated modes of public transport, such as trains and trams		
Sierra Leone			Improved and promoting use of public transport (e.g. road, rail and water) for passengers and cargo to reduce traffic congestion
Sri Lanka	Shifting of passengers from private to public transport modes, introducing electric railway system		
Republic of Macedonia	Increased use of railway		
Thailand	Promote road-to-rail modal shift for both freight and passenger		

Country	Improvement in Infrastructure & Mode share	Reduction in specific average CO ₂ emissions from train operations & energy efficiency improvement	Other/Not specified/Indirect/Maybe
	transport, which include extensions of mass rapid transit lines, construction of double-track railways		
Turkey	Ensuring balanced utilization of transport modes in freight and passenger transport by reducing the share of road transport and increasing the share of maritime and rail transport, realizing high speed railway projects & increasing urban railway systems		
United Arab Emirates	Develop a federal freight rail network crossing the country & increase investment in light-rail and metro system		
United Republic of Tanzania	Promoting low emission transport systems through deployment of Mass Rapid Transport Systems and investments in air, rail, marine and road infrastructures.		
Uruguay	Improve cargo transport, through the incorporation of new multimodal systems, and increased use of railroad and inland waterway transport		
VietNam	Restructure freight towards a reduction in the share of road transport in exchange for an increase in the share of transportation via rail and inland waterways		
Zimbabwe		Refurbishment and Electrification of the rail system	
Nigeria	Modal shift from air to high speed rail & moving freight to rail		
Bahrain	Develop GCC Railway Project, and the 5 Bahrain Light Rail Project		
Nepal	Develop its electrical (hydro-powered) rail network by 2040 to support mass transportation of goods and public commuting		

Table 9: Country NDCs with Railways as a Mitigation Measure

2. Global Fuel Economy Initiative (GFEI) - 100 for 50 by 50

GFEI's '[100 for 50 by 50](#)' campaign aims for 100 countries to commit to contributing to GFEI's fuel economy improvement goals i.e. to support an 50% improvement in the average fuel economy of all vehicles by 2050. To achieve this target, all new light duty vehicles sold must reach a similar target as early as by 2030, allowing sufficient time for complete fleet overhaul. GFEI estimate that doubling the efficiency of the global fleet will result in massive CO₂ reductions (0.5 Gt/yr by 2025, 1.5Gt/yr by 2050 & up to 33 Gt of CO₂ cumulatively), plus costs savings, reduced air pollution, and less oil dependence.

Achieving this target would yield about one third of the CO₂ reductions necessary to switch individual motorized passenger transport from a 6 degree (6DS) to a 2 degree (2DS) emission trajectory¹⁶.

Currently about 65 countries are implementing fuel economy policies with support of GFEI and under this campaign, the target is to increase the number of countries to 100. A detailed review of 159 NDCs reveals that about 67% of NDCs have highlighted specific transport mitigation measure and about 45% of NDCs (71 NDCs) have proposed measures to improve fuel economy of vehicles. Clearly, in most countries where transport sector is considered as a priority mitigation source, fuel economy is a priority mitigation action.

Countries can improve fuel economy of vehicle fleet by implementing various policies and measures such as - import regulation, emissions standards, fiscal measures (increased taxation for inefficient vehicles and subsidies for fuel efficient vehicles), labeling (standardized labeling indicating efficiency of cars in showrooms), removal of the oldest vehicles (rebate or cash for clunkers schemes) and removal of fuel subsidies, fast tracking new technology introduction (hybrids and EVs). The following figure provides a typology of fuel efficiency improvement measures proposed as part of post-2020 mitigation strategies.

Typology of Fuel Economy Improvement Measures in NDCs

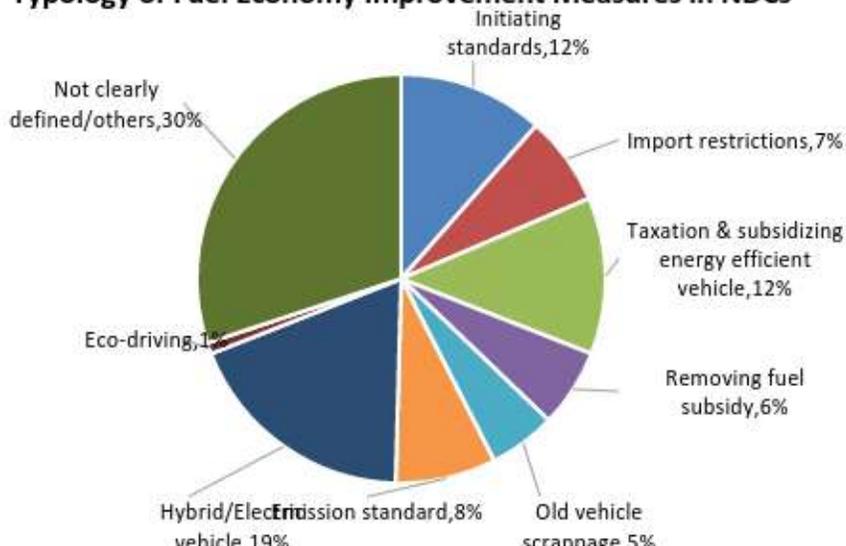


Figure 3: Fuel Economy Typology in NDCs

It is interesting to note that nearly 30% of the proposed fuel economy improvement measures are not yet clearly defined in NDCs. GFEI is able to support such countries to help them understand the impact of various measures in order to help them to prioritize the most effective measure matching local conditions.

Three most predominant measures include hybrid & electric vehicle promotion, implementing fuel economy standards and fiscal measures (taxation and subsidies). Cambodia was the only country which

¹⁶ [Fuel Economy State of the World 2016](#)

highlighted eco-driving as a fuel efficiency improvement strategy. Some countries have already established targets related to fuel economy as shown below.

- Republic of Korea has set fuel economy improvement target from 140g/km in 2015 to 97g/km in 2020
- Brunei Darussalam is considering setting fuel consumption targets for new vehicles that are similar to those in the EU, such as 17.2 kilometer/litre by 2020 (EU 2016 target equivalent) and at 21.3 kilometer/litre by 2025 (EU 2020 target equivalent)
- Mongolia has set hybrid vehicle mode share target i.e. increase the share of private hybrid road vehicles from approximately 6.5% in 2014 to approximately 13% by 2030.
- Nepal has set electric vehicle penetration target to 20% by 2020
- Jordan has set an infrastructure target i.e. eventual deployment of 3000 charging stations (on grid & off grid) by to support 10000 ZEVs by the private sector

Many developing countries are proposing restrictions on import of old vehicles as shown below, which would also help to increase fleet average fuel economy:

- Mauritania is limiting the import of cars aged 8 years
- Congo is planning to restrict import of vehicles over 5 years
- Gabon is planning to restrict import of vehicles over 3 years
- Togo is planning to reduce the average age of imported vehicles (to 5-7 years)
- South Sudan is considering measures to restrict importation of vehicles that do not adhere to allowable emissions levels
- Saint Vincent and Grenadines is planning new policies to reduce the import duty paid on low emission vehicles to encourage their use as it could result in avoided emissions of approximately 10% over the next 10 years

NDC	Standards	Restrictions	Taxation	Removing Fuel Subsidy	Subsidizing energy efficient vehicle	Old Vehicle scrappage	Emission Standard	Hybrid/Electric Vehicle	Ecodriving	Others/Not clearly specified
Afghanistan										✓
Antigua and Barbuda	✓							✓		✓
Armenia								✓		
Australia										✓
Azerbaijan								✓		
Barbados					✓			✓		
Benin			✓							
Bhutan	✓							✓		
Burkina Faso						✓				
Burundi										✓
Cambodia								✓	✓	✓
Cameroon					✓	✓				
Cabo Verde							✓			✓
Congo Republic		✓								
Costa Rica								✓		✓
Côte d'Ivoire								✓		✓
Canada	✓									

NDC	Standards	Restrictions	Taxation	Removing Fuel Subsidy	Subsidizing energy efficient vehicle	Old Vehicle scrappage	Emission Standard	Hybrid/Electric Vehicle	Ecodriving	Others/Not clearly specified
Djibouti										✓
Dominica					✓					✓
Equatorial Guinea										✓
Egypt										✓
Ethiopia				✓						✓
Fiji								✓		
Gabon		✓								
Gambia										✓
Grenada	✓		✓							
Guatemala	✓		✓							
India	✓			✓	✓		✓			
Japan										✓
Jordan								✓		✓
Lebanon										✓
Lesotho										✓
Marshall Islands							✓	✓		
Mauritania		✓								
Mauritius								✓		
Monaco					✓			✓		
Morocco				✓						
Mongolia								✓		✓
New Zealand								✓		
Niger										✓
Papua New Guinea										✓
Rwanda						✓	✓			✓
Republic of Korea	✓		✓					✓		
South Africa								✓		
Seychelles								✓		✓
Saudi Arabia	✓									
Republic of Macedonia						✓		✓		
Thailand			✓							
Togo		✓								
Tunisia										✓
Turkey						✓				
Uganda										✓
United Arab Emirates	✓			✓			✓			
United States of America	✓									
Uruguay	✓							✓		
Viet Nam				✓						✓
Tonga										✓
Brunei	✓			✓	✓					
Nigeria	✓			✓						
Jamaica										✓
Niue		✓								
Yemen										✓
South Sudan		✓					✓			✓
Qatar							✓			✓
Cook Islands		✓			✓					

NDC	Standards	Restrictions	Taxation	Removing Fuel Subsidy	Subsidizing energy efficient vehicle	Old Vehicle scrappage	Emission Standard	Hybrid/Electric Vehicle	Ecodriving	Others/Not clearly specified
Saint Lucia										✓
Saint Vincent and Grenadines		✓								
Bahamas							✓			✓
Nepal							✓	✓		
Saint Kitts and Nevis			✓		✓					
Venezuela						✓				✓

Table 10: Fuel Economy Improvement in Country NDCs

Among all the countries with NDCs highlighting fuel economy measures, only South Africa and Uganda have highlighted funding requirement to improve fuel efficiency of vehicles. South Africa has estimated total incremental costs required of about US\$513 billion from 2010 till 2050 for Electric vehicles and US\$488 billion by 2030 for hybrid electric vehicles. Uganda has proposed a Fuel Efficiency Initiative as a National Appropriate Mitigation Action with an investment cost of US\$ 5.8 million over 6 years.

3. UITP Declaration on Climate Change Leadership

In support of the Lima Paris Action Agenda at COP21, UITP committed to double the market-share of public transport by 2025¹⁷. UITP has estimated that the doubling the market share of public transport would prevent the emission of half a billion tons of CO2 equivalent by the year 2025¹⁸. Further, research on investments on public transport, walking and cycling improvements¹⁹ have shown that more than US\$100 trillion in cumulative public and private spending could be saved, and 1,700 megatons of annual carbon dioxide (CO2)—a 40% reduction of urban passenger transport emissions—could be eliminated by 2050 if the world expands public transportation, walking and cycling in cities. This could be achieved as about 50% of the urban vehicle travel could be avoided when compared with the Baseline in 2050.

The table below highlights the link between the UITP commitment and the NDC's. Nearly 59% of public transport strategies mentioned in the NDCs are bus improvement related. About 26% of strategies are metro improvement related and about 15% of NDC's indicate general improvement in public transport facilities. Of all the NDC's with public transport improvement proposed, only about 28% of NDC's are supported with complimentary policies such as walking and cycling improvement, fossil fuel subsidy removal strategy, road pricing, land use strategies, parking, fuel quality improvements etc.

By improving public transport system i.e. by decreasing travel time and improving public transport services, significant modal shift from private vehicle travel could be achieved. The most cost-effective

¹⁷ [UITP Declaration on Climate Change Leadership](#)

¹⁸ [Climate Action and Public Transport](#)

¹⁹ [A Global High Shift Scenario: Impacts And Potential For More Public Transport, Walking, And Cycling With Lower Car Use](#)

urban transport strategy is often improvement in bus operations, replacing inefficiently run small buses in slow speeds with high capacity, fuel efficient buses operated on dedicated rights-of-way that give priority to these vehicles, bus stations, and improving conditions for ingress and egress from public transport corridors.

Some diverse examples of public transport improvement include:

- Some countries have imposed public transport mode share target. For example, China has proposed – “*promote the share of public transport in motorized travel in large- and medium-sized cities (targeting 30% mode share by 2020)*” and Israel has proposed 20% shift from private to public transport.
- Many countries have proposed introduction of BRT corridors for example -Uruguay, Jordan, Senegal etc.
- Trinidad and Tobago has committed to unconditionally reduce its public transportation emissions by 30% or one million, seven hundred thousand tonnes (1,700,000) CO₂e compared to 2013 levels by December 31, 2030.
- Azerbaijan has proposed enhancement of the use of electric vehicles for public transport and electrification of railway lines and the transition to alternative current system in traction
- Papua New Guinea has proposed introduction of energy efficient buses
- Bahamas has proposed development of park & ride system
- Belize has proposed improvement of maintenance of buses
- Lao PDR has estimated reduction in transport CO₂ emissions by 158 ktCO₂/pa by improving public transport system i.e. about 3% of its transport sector emissions by 2030²⁰
- Marshall Islands has proposed tax exemptions for bus factories to encourage public transport

Country	UITP Commitment			Public Transport Complimentary Strategies				
	Bus Improvement	Metro	Not Specified	Walking & Cycling	Fuel Quality	Land Use	Pricing (Subsidy, carbon pricing & congestion charging)	Parking
Argentina		✓						
Azerbaijan		✓		✓	✓			
Bahamas	✓			✓	✓			
Bahrain	✓	✓						
Bangladesh	✓	✓						
Barbados			✓				✓	
Belarus			✓					

²⁰ [Emission Reduction Potential in the Transport Sector by 2030](#)

Country	UITP Commitment			Public Transport Complimentary Strategies				
	Bus Improvement	Metro	Not Specified	Walking & Cycling	Fuel Quality	Land Use	Pricing (Subsidy, carbon pricing & congestion charging)	Parking
Belize	✓							
Benin	✓							
Bhutan	✓				✓			
Bolivia			✓					
Brazil	✓							
Brunei	✓			✓		✓	✓	✓
Burkina Faso	✓							
Cabo Verde			✓				✓	
Cambodia	✓			✓				
Cameroon		✓			✓	✓		
China	✓			✓		✓	✓	
Congo Republic		✓						
Costa Rica	✓							
Côte d'Ivoire		✓			✓			
Egypt	✓	✓					✓	
El Salvador	✓							
Equatorial Guinea	✓							
Eritrea	✓							
Ethiopia			✓			✓	✓	
Gabon	✓							
Ghana	✓	✓		✓				
Guatemala	✓							
Guinea	✓							
India		✓			✓		✓	
Israel		✓						
Japan	✓							
Jordan	✓							
Lao PDR	✓							
Lebanon		✓						
Lesotho	✓							
Liberia			✓					
Malawi	✓							
Mauritania			✓					
Mauritius	✓							
Monaco	✓			✓				

Country	UITP Commitment			Public Transport Complimentary Strategies				
	Bus Improvement	Metro	Not Specified	Walking & Cycling	Fuel Quality	Land Use	Pricing (Subsidy, carbon pricing & congestion charging)	Parking
Mongolia	✓							
Mozambique		✓						
Namibia	✓							
Nepal			✓	✓				
Nigeria	✓							
Panama			✓					
Papua New Guinea	✓	✓						
Qatar	✓							
Republic of Korea	✓							
Republic of Macedonia			✓	✓				✓
Rwanda	✓							
Saint Kitts and Nevis			✓					✓
Saint Lucia	✓							
Saint Vincent and Grenadines	✓							
Saudi Arabia		✓						
Senegal	✓							
Seychelles	✓							
Sierra Leone	✓							
South Africa	✓							
Sri Lanka	✓							
Thailand	✓	✓						
Togo	✓			✓				
Tonga	✓			✓				
Trinidad and Tobago			✓					
Turkey	✓	✓						
United Arab Emirates		✓						
United Republic of Tanzania	✓	✓						
Uruguay	✓							
Venezuela	✓	✓						
Viet Nam		✓						

Table 11: NDCs and Public Transport Improvement

4. Urban Electric Mobility Initiative

Under this initiative, stakeholders commit to promote sustainable transport electrification with at least 20% of all road vehicles (cars, 2 and 3-wheelers, trucks, buses and others) to be electrically powered by 2030. Increasing electrification of transport sector could be one of the main entry points for increasing renewable energy consumption in the sector as 93% of transport sector is still powered by oil. IEA has estimated that to reach a 2DS scenario, sales of electric vehicles (EVs), which currently constitute less than 1% of car sales worldwide, will need to exceed 40% of total passenger car sales by 2040²¹. Increase in electric vehicle fleet will lead to significant emission reductions. For example, In Colombia, transport sector mitigation proposals consider 15% of electric vehicle penetration and 30% of EV penetration to be reached by 2040. This would result in savings of about 10.4 Mt and 19 Mt of CO₂²² respectively. Further, the transport sector can benefit greatly from decarbonizing efforts in the electricity sector. Colombia has a very clean electricity generation matrix due to the high share of hydroelectricity (68% of the electricity generation in 2010) and carbon intensity of the power sector is projected to improve. Nearly 21% of NDCs propose electric vehicle increase and about 28% propose other measures for decarbonising fuel such as biofuels, natural gas etc.

Some examples for electric vehicle promotion proposed under NDCs are:

- Armenia – Development of electric transport
- Azerbaijan - Enhancement of the use of electric vehicles for public transport, Electrification of railway lines and the transition to alternative current system in traction
- Bahamas - lowering import duties on hybrid and electric cars
- Barbados – Tax incentives for electric vehicles
- Cabo Verde - Energy Efficiency NAMA which will also consider options for expanding hybrid and electric fleets in the country, in particular, the feasibility of making government vehicles electrically powered by 2030.
- India - Accelerate manufacturing and adoption of hybrid and electric vehicles
- Mali- Replace more than one-third of fossil fuels (with renewables) for electricity and transport by 2030.
- Mauritania- electric public transport
- New Zealand - Increase renewable electricity usage in transport and increase uptake of low emission technologies.
- Republic of Korea- tax reductions, for electric and hybrid vehicles

²¹ [Energy and Climate Change - World Energy Outlook Special Report](#). IEA has also proposed [35 percent](#) of global sales in 2030 to be electric in order to reach 2DS scenario.

²² http://lowemissiondevelopment.org/lecbp/docs/countries/Colombia/Colombia_PAS_Transporte_VFfinal.pdf

VI. Conclusions and Recommendations

This report set out to provide an overview of the Transport Initiatives under the GCAA with an emphasis on progress since COP21 in December 2015. The report reviewed in some detail the manner in which the initiatives monitor and report progress. The alignment of Transport Initiatives with the Paris Agreement on Climate Change, the 2030 Agenda on Sustainable Development and the recent Habitat III outcome was reviewed by looking at the linkage between the transport initiatives and the transport related targets under the SDGs and the Habitat III New Urban Agenda in the case of Sustainable Development and with the NDCs in the case of Climate Change.

A. Progress since COP21: Building on the Momentum

COP 21 was a determining moment for the GCAA Transport Initiatives. The careful preparation through the GCAA combined with the high level exposure for the Transport Initiatives through the Transport Focus on December 3rd, the Action Day on December 6th and Transport Day 2015 on December 7th has helped the Transport Initiatives to shape their initiatives and build internal and external support for the initiatives.

Inspired by their integration in COP21 and especially also the widely publicized positive outcome of COP 21 (an ambitious target and acknowledgement of the role of non-state actors in the COP21 Decision), the majority of the GCAA Transport Initiatives have either continued the implementation of their initiative as planned or scaled up through bringing in new partners. There is a small group of initiatives that have not capitalized in a significant manner from COP21 and which continue to operate at a relevant low intensity level.

The COP21 decision and the role of non-state actors

Mobilize non-Party stakeholders to intensify action on transport and climate change in the context of: “Welcomes the efforts of all non-Party stakeholders to address and respond to climate change, including those of civil society, the private sector, financial institutions, cities and other subnational authorities”; (Para. 134 Decision -/CP.21); “Invites the non-Party stakeholders referred to in paragraph 134 above to scale up their efforts and support actions to reduce emissions and/or to build resilience and decrease vulnerability to the adverse effects of climate change and demonstrate these efforts via the Non-State Actor Zone for Climate Action platform⁴ referred to in paragraph 118 above”; (Para. 135 Decision -/CP.21); and “Recognizes the need to strengthen knowledge, technologies, practices and efforts of local communities and indigenous peoples related to addressing and responding to climate change, and establishes a platform for the exchange of experiences and sharing of best practices on mitigation and adaptation in a holistic and integrated manner (Para. 136 Decision -/CP.21)

The decision taken by COP 21 to continue appointing High Level Champions who have a mandate amongst others to enable and facilitate the continuation of the GCAA has been helpful for the GCAA Transport Initiatives and is expected to be even more important post COP22 when they will present

their plans for the next steps for the GCAA. The initiative by the French government to continue its role post COP21 to facilitate the transport initiatives in 2016 and support the incoming Moroccan Presidency has been particularly valuable. They have helped develop this report, and have helped ensure that the GCAA initiatives are increasingly integrated in the UNFCCC process in the longer term.

B. Planning and Monitoring by GCAA Transport Initiatives: Moving towards Output – Outcome – Impact Oriented Planning

The GCAA fostered a range of transport initiatives in areas where significant gaps existed based on IPCC as well as UNEP's reports. This has led to a good number of new initiatives in areas that previously did not get due attention. However, some commitments are very event-and-activity-oriented and often lack institutional support to maintain. Activities such as workshops, conferences, and seminars are conducted in an ad hoc manner and often lack long-term vision for continual implementation.

While some of the initiatives have acknowledged the need to move on and have started to adopt multi-year strategic plans, some have been approaching the implementation of their initiative on an ad-hoc and incremental basis. For those initiatives that had adopted a more ad-hoc approach, 2016 can be the year where they begin structuring the implementation of their commitments for the longer term.

Overall, the GCAA Transport Initiatives have welcomed the decision of the GCAA NOT to impose a rigid monitoring and reporting format for the initiatives. There is strong support for a bottom-up approach whereby each initiative develops its own formats.

The research collected in support for this report indicated that there are commonalities in the manner in which the GCAA Transport initiatives have developed. There is a relatively strong emphasis on so-called enabling activities like outreach, capacity building and knowledge development and management. These activities can be found in almost all the initiatives. There is more variation in the manner in which the initiatives approach implementation oriented objectives. There are a number of initiatives that have explicit implementation oriented objectives, while others stop at the level of enabling.

The approach to structure activities and objectives in a logical framework consisting of internal outputs and external outcomes and impacts, each with a limited number of categories proved to be a workable approach. It offers promise in developing a planning structure that offers a certain amount of comparability between initiatives without overly compromising the bottom-up, delegated planning approach endorsed by the GCAA represented by the French government.

GCAA initiatives can be invited to give their view on whether the piloted approach: outputs - outcomes and impacts can be adopted as a basis for future structuring of the planning of the GCAA Transport Initiatives. The roll out of the Outputs – Outcomes – Impacts approach can be done in a gradual manner, whereby the GCAA Secretariat, possibly assisted by the PPMC, plays an enabling role

C. Reporting by the GCAA Transport Initiatives: Build on what Works

The report saw a large amount of variation in the reporting arrangements for the various initiatives.

Assessment on progress is often seen as an ad hoc response to external call for reports by the GCAA or the PPMC and lack structure, standards, and specific time schedule for reporting.

In some cases, transport initiatives do not even have their own websites and have to rely on external organizations (such as the GCAA or the PPMC and the SLoCaT Partnership) in promoting its cause through various media outlets.

At the same time the report also saw a number of the initiatives who are putting greater emphasis on developing a structured approach to reporting, with in some case third party validation of reporting done by the initiative or its signatories.

D. Capitalizing on COP 21 and SDG momentum: Overcoming the Barriers

Analysis carried out on the alignment of the GCAA Transport Initiatives with the Sustainable Transport Targets under the SDGs, and the NDCs under the Paris Agreement on Climate Change, shows that there is considerable potential for the GCAA Transport Initiatives to contribute to the implementation of both the SDG Transport targets, the New Urban Agenda and the NDCs.

Regardless of the achievement since COP21 and plans for 2017, transport initiatives have often encountered difficulties in scaling up their influence and impacts due to the lack of internal and external capacity, weak or absence of institutionalized linkage with policy-makers in their respective regions, the ad hoc nature of the initiatives and the GCAA, as well as other financial constraints. These barriers must need be overcome in order to stabilize and optimize the role of GCAA transport initiatives in realizing their objectives and the ambition and goals laid out in the Paris Agreement.

1. Challenge in capacity (internal and external)

The lack of internal and external capacity is one of the major reasons why initiatives are facing challenges in scaling up their actions and moving forward in a faster pace. Internally, in many cases, these transport initiatives were developed under one or more umbrella organizations to promote a specific common cause; they do not, however, have dedicated personnel working on a full-time basis to develop and maintain detailed plans and programs for activities. Initiatives often are maintained by small working units that have other responsibilities in the hosting organizations.

2. Linking with policy-makers in countries

The report shows that a number of transport initiatives have put emphasis on policy-related internal outputs and external outcomes. The lack of focus on policy and policy instrument development in case of other initiatives is in part due to the lack of institutionalized channels between transport initiatives and policy-makers in the public sector across the world, making it difficult for them to offer effective policy recommendations that would be taken into consideration in the long run.

Attempts to establish stronger ties and connections with authorities and government officials are currently being done through events, workshops, or summits and in some cases direct outreach. There is

a need to establish stronger institutional channels between the transport initiatives and relevant state actors in their respective regions of influence.

The GCAA can probably play a meaningful role in this. The GCAA can support initiatives by displaying what non state actors can do to move ahead and by facilitating access to policy makers from all countries to push for more ambition through policies that can scale up the actions of non-state actors. It is important to keep in mind that linking up with policy makers can reinforce action by non-state actors but that it is not the intention to shift the responsibility for taking action from the non-state actors to the public sector.

3. Financial Resources for strengthening, building and the implementation of the initiatives

A number of transport initiatives are created as a partnership between several organizations with no dedicated full-time working unit in the organization. The lack of dedicated, full-time workforce also leads to the lack of secured, continual funding and devoted budget from the hosting organization. This adds further burden to initiatives' personnel to spend more capacity in reaching out for external financial resources in order to perpetuate their activities and programs. Multi-year funding and dedicated financial budget for transport initiatives will not only relieve the burden of internal capacity, but also facilitate better strategic planning and knowledge development of the initiatives.

E. Next Steps

Building on the analysis in this report, which draws on extensive inputs from the GCAA Transport Initiatives this report concludes with 6 recommendations on the continuation of the GCAA Transport Initiatives in 2017.

1. There is merit in updating the progress of the GCAA Transport Initiatives on an annual basis – ideally this should be done prior to the annual COP. Ad-hoc reports should be avoided as much as possible. Requests for information to the initiatives, should be coordinated with future COP Presidents and with the UNFCCC NAZCA platform, which is taking a growing interest in reporting on the GCAA initiatives. To ensure that information is kept up to date it is proposed that the PPMC works closely with the initiatives to ensure that the individual pages for the Transport Initiatives on the PPMC website are kept up to date. This will then enable the PPMC to coordinate with UNFCCC NAZCA and organizations assigned by the UNFCCC to act as data managers on the GCAA initiatives;
2. There is merit in structuring the planning of the GCAA Transport Initiatives in a manner that does not infringe their ability to develop own planning and reporting structures. The Output-Outcome-Impact approach has potential to structure the planning of the GCAA Transport Initiatives. Having a clear documentation of the manner in which the transport initiatives structure the implementation of their initiatives will also support communication on the contribution of the GCAA Transport Initiatives towards realizing the Paris Agreement on Climate

Change and other international processes. It can also help them to mobilize support for their initiatives;

3. The GCAA Transport Initiatives benefit from effective outreach on their initiatives. Individual initiatives will invest in their own outreach. From time to time outreach can also be done in a collective manner. In 2017, this should be coordinated by the relevant Ministry in Morocco. The PPMC can assist such outreach efforts through the PPMC website, periodic flyers and by facilitating the integration of GCAA Transport Initiatives in relevant global and regional events on sustainable transport;
4. To continue to capitalize on the momentum created by the Paris Agreement on Climate Change, the 2030 Agenda on Sustainable Development and the Habitat III Conference, there is a need to better communicate how the GCAA Transport Initiatives can help governments as well as international organizations realize the targets in these global agreements and processes. GCAA Transport Initiatives can play a role in this but they will require help from the GCAA, the High Level Champions (France and Morocco in 2016) as well as the PPMC, this important role in supporting governments scale up action needs to be a key focus area in 2017;
5. The GCAA Transport Initiatives play a key role in the implementation of the Paris Agreement as well as other international processes. It is therefore in the interest of the international community to mobilize practical and financial support for the initiatives to help them better plan, coordinate, monitor and report on their initiatives. Such international assistance is not expected to include direct implementation support.
6. Adaptation of transport to climate change is still a relatively minor part of the work of the initiatives, which largely focus on mitigation. To enhance the relevance of their work to UNFCCC Parties, particularly vulnerable or Developing Countries, the focus on adaptation activities needs to be strengthened in the next years.

These six recommendations were developed through discussion with the initiatives organized by the PPMC also on behalf of the French Ministry of Ecology.