PPMC 2015+ PARIS PROCESS ON MOBILITY AND CLIMATE

Partnership on Sustainable Low Carbon Transport

Nationally-Determined Contributions (NDCs) Offer Opportunities for Ambitious Action on Transport and Climate Change

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Partnership on Sustainable Low Carbon Transport
October 2016 (Updated)

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List of Abbreviations

2DS	Two Degree Scenario
AR5	Fifth Assessment Report
ASI	Avoid-Shift-Improve
ATAG	Air Transport Action Group
BAU	Business-as-usual
BUR	Biennial Update Report
CAO	International Civil Aviation Organization
CO2	Carbon Dioxide
COP	Conference of Parties
ECF	European Cyclists' Federation
ETC	Energy Transitions Commission
GCAA	Global Climate Action Agenda
GHG	Green House Gas
Gt	Gigatonnes
IEA	International Energy Agency
INDC	Intended Nationally-Determined Contribution
IPCC	International Panel on Climate Change
ITS	Intelligent Transport Services
LC2RTI	Low Carbon Road and Road Transport Initiative
LCS	Low carbon scenario
LEAP	Long-range Energy Alternatives Planning System
LPAA	Lima-Paris Action Agenda
M&E	Monitoring and Evaluation
MPWT	Public Works and Transport
MRV	Measurement, reporting and verification
NC	National Communication
NDC	Nationally-Determined Contribution
PPMC	Paris Process on Mobility and Climate
SLCP	Short-lived climate pollutant
UEMI	Urban Electric Mobility Initiative
UIC	International Union of Railways
UITP	International Association of Public Transport
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WCA	World Cycling Alliance

Key Findings

Nationally-Determined Contributions (NDCs)[1] represent a unique opportunity to increase bold mitigation and adaptation measures in transport and other sectors, as for the first time, Parties to the United Nations Framework Convention on Climate Change (UNFCCC) countries are communicating their commitment to reduce emissions and increase resilience on sectorial scales in the context of the UNFCCC system.

Among 160 NDCs representing 187 countries that were submitted as of August 1, 2016[2], 75% explicitly identify the transport sector as a mitigation source, and more than 63% of NDCs propose transport sector specific mitigation measures. In addition, 9% of NDCs include a transport sector emission reduction target, and 12% of NDCs include assessments of country-level transport mitigation potential.

Transport related actions in the NDCs are heavily skewed towards passenger transport, which is included in 91% of NDCs identifying specific transport modes. Among these, urban transport measures are mentioned in 74% of NDCs, and heavy rail and inland waterway are also well represented, while strategies such as high-speed rail (2%), aviation (5%) and walking and cycling (14%) have received relatively less attention.

On an economy-wide scale, mitigation measures proposed in NDCs are expected to fall short of an IPCC-recommended two-degree Celsius scenario (2DS). Based on existing policies and levels of ambition expressed in NDCs, it is also unlikely that the transport sector will attain a 2DS by 2030 through the targets and measures proposed. In order to achieve deeper emission cuts that would put the transport sector on track for a 2DS, transport mitigation ambition as expressed in NDCs would need to be intensified and additional transport measures would need to be prioritized in implementation strategies.

Adaptation, although being mentioned in an economy-wide scope in 83% of 160 NDCs submitted to date, has generally received less attention than mitigation in NDCs. The transport sector is mentioned in general terms among climate adaptation measures in 16% of NDCs, and only 4% of countries identify transport-specific adaptation strategies.

The Paris Agreement on climate change, the outcome document of COP21, has various implications for solidifying the position of NDCs within the UNFCCC framework.[3] The Agreement proposes a timeframe up to 2025 (or 2030) to communicate by 2020 a new NDC (or substitute) and to do so every five years. The Agreement further establishes that all countries should present National Adaptation Plans and that NDCs should contain nationally determined contributions on adaptation.

The Agreement's requirement to increase ambition to a target of well below the 2DS and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius above preindustrial levels is a strong call to accelerate the decarbonization of the transport sector. However, recent assessments by a range of international bodies have concluded

[1] A previous version of this report refers to 'Intended Nationally-Determined Contributions (INDCs);' the terminology has changed following the entry into force of the Paris Agreement on November 4, 2016.
[2] A total of 162 NDCs were submitted, but Iraq and Kuwait were not included in the assessment due to a lack of SLoCaT capacity to translate from Arabic.
[3] http://unfccc.int/resource/docs/2015/cop21/eng/l09r01.pdf

that current NDCs will not be sufficient to achieve a 2DS, and the Paris Agreement does not foresee substantive strengthening of NDCs for the 2020-2025 period, despite broad consensus that ambition levels in current NDCs are on a projected course for a 2.7 degree Celsius increase and thus are likely to fall well short of a 2DS, let alone a 1.5 DS.

In summary, if we have weak efforts pre-2020 and inadequate 2020-2025 NDCs, the transport sector is likely to be placed on a trajectory that makes it increasingly unlikely to achieve a 1.5DS by 2030 or 2050. This trend sends a clear message to all sectors that there is need for disruptive change in the area of decarbonization, as incremental approaches will not be sufficient to make needed strides in this direction. [4]

[4] SLoCaT (2015). "COP21 Final Preliminary Report" SLoCaT Partnership. December. Refer [http://bit.ly/2cyc2hw].

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Transport sector emissions trends and mitigation potential

The transport sector is responsible for approximately 23% of total current energy-related CO2 emissions, and therefore represents a critical sector for climate action. A recent SLoCaT Partnership analysis[5] revealed that transport is the largest energy-consuming sector in 40% of countries worldwide, and the second-largest energy-consuming sector in most of the remaining countries. The global transport sector emitted about 8.5 gigatonnes (Gt) CO2e in 2013[6].

Transport, which had an average annual growth rate of 2% from 1990 to 2012, is among the fastest growing sectors of CO2 emissions from fuel combustion, with passenger transport accounting for nearly 60% and freight transport accounting for 40% of total transport energy demand in 2012.[7] Urban transport constitutes 40% of total transport energy consumption[8] and is poised to double by 2050[9], despite ongoing improvements to vehicle technology and increases in global fuel economy.

In the absence of aggressive mitigation policies, transport emissions could reach about 12 Gt CO2e annually by 2050, with transport emissions from Non-Annex I countries surpassing those of Annex I countries in the coming two years. To meet a 2DS (an established IPCC standard), CO2 emissions from transport would need to decline to 5.7 Gt by 2050.[10] The transport sector offers considerable potential for climate change mitigation. The International Panel on Climate Change (IPCC) states that a 15-40% reduction of CO2e from transport sector baseline growth is plausible by 2050.[11]

The United Nations Environment Programme (UNEP) [12] estimates transport sector emission reduction potential to be ranging from 30-50 % in 2030 relative to 2010. This estimate is higher than mitigation potential estimated by SLoCaT's with detailed bottom-up data from 138 countries i.e. 18% increase by 2030 when compared to 2010 if low carbon transport policies are implemented.

[5] SLoCaT (2015), 'Differentiating National Transport Sector Emissions Trends to Better Inform National Targets and Implementation Strategies' SLoCaT Partnership. August. Refer. [http://goo.gl/jqnQ82]
[6] IEA (2015)," IEA World CO2 Emissions from Fuel Combustion"
[7] International Energy Agency (2014), "Tracking Clean Energy Progress 2014".
[8] Sims R., et al. (2014). "Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change" Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.
[9] IEA, (2013) "Policy Pathways: A Tale of Renewed Cities"
[10] IPCC "IPCC Fifth Assessment Report - Chapter 8 Transport". Refer [http://bit.ly/1sNiuGm] and International Energy Agency (2014), "Tracking Clean Energy Progress."
[11] IPCC "IPCC Fifth Assessment Report - Chapter 8 Transport". Refer [http://bit.ly/1sNiuGm]
[12] UNEP (2015). "The Emissions Gap Report 2015. United Nations Environment Programme (UNEP), Nairobi" UNEP.

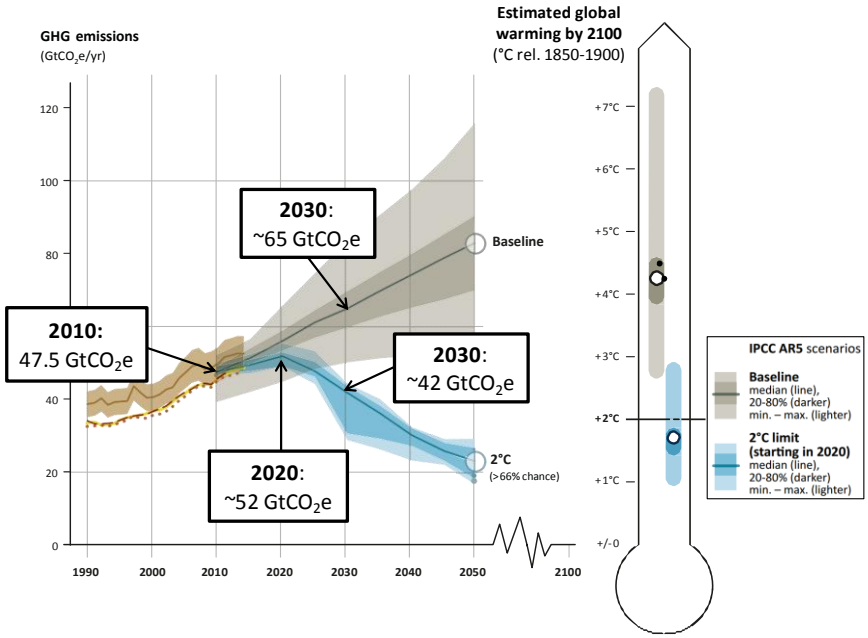

Figure 1 Global Economy-wide Baseline and 2DS Scenarios (UNEP Emission Gap Report)

From 1990 to 2013, the transport sector grew at a faster rate than other sectors, and thus, the transport sector will need to provide a high intensity of reductions out to 2030 compared to historic growth. A recent analysis[13] by the International Energy Agency (IEA) confirms that the majority of required reductions from the transport sector could be achieved by available technologies and policies, without reducing development prospects in any region.

NDC Background and Process

NDCs communicate to the UNFCCC secretariat country-level commitments and strategies to reduce carbon emissions and increase resilience for the post-2020 period[14]. 'Intended' refers to planned country commitments, and 'Nationally Determined' acknowledges that each country faces a unique set of circumstances influencing its emission reduction strategies, including socio-economic development patterns, historic emission trajectories, and varying financing requirements.

In setting country specific targets on climate change mitigation, NDCs represent a departure from the top-down approach that had been taken in the UNFCCC process up to the 15th Conference of Parties (COP15) Copenhagen. They introduce a bottom-up process to define country-level mitigation and adaptation efforts that are guided by national development priorities, equity, and common responsibility. Since NDCs represent a nationally determined process, they have the potential to drive progress in countries, especially in the global south, that are increasing shaping emerging climate policies.

[13] International Energy Agency. (2015). "World Energy Outlook Special Report: Energy and Climate Change". International Energy Agency Refer http://bit.ly/1fJIufF
[14] Intended Nationally Determined Contributions (INDCs) http://unfccc.int/focus/indc_portal/items/8766.php

Therefore, NDCs represent a unique opportunity to increase mitigation and adaptation ambitions in transport and other sectors, as for the first time in history, countries are communicating their intended actions to reduce emissions and increase resilience on sectorial scales in the context of the UNFCCC system.

To be effective in helping to arrive at an ambitious global climate agreement in December 2015, NDCs were to be communicated by each Party to the UNFCCC secretariat well in advance of COP21 Paris.[15] The information to be provided in NDCs may include quantifiable information on base years, time frames and/or periods of implementation, scope and coverage assumptions, and methodological approaches to mitigation and adaptation actions for the 2020-2030 period. Levels of ambition in NDCs are to be 'ratcheted up' in subsequent periods of evaluation, as further described in the section below entitled 'NDCs and the Paris Agreement on Climate Change'.

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 Celsius Scenario (2DS) scenario by 2030 (see Table 1).

Table 1: Assessment of mitigation ambition in NDCs

	NDCs Considered	Study	Findings	Emission Gap with 2DS
1	All NDCs submitted as of 20 July 2015	Rodney Boyd et al.[16]	There is a mismatch between the ambitions embodied by the NDCs and the overall objective of having a reasonable chance of avoiding global warming of more than 2°C	15-17 Gt by 2030
2	All NDCs submitted as of 31 August 2015	PBL[17]	NDCs submitted to date could reduce emissions by 3.5 to 4.0 billion tons by 2030, compared to the level under current policies.	15-16 Gt CO2e by 2030
3	All NDCs submitted as of mid-October 2015	IEA[18]	The cumulative effect of implementing all NDCs submitted by mid-October would lead to an average global temperature increase of around 2.7°C by 2100, which falls short of the "major course correction necessary" to stay below an average global temperature rise of 2°C.	-
4	All NDCs submitted as of 1 October 2015	Climate Action Tracker[19]	The NDC process has led to a significant improvement in promised action compared to earlier pledges of action and informal announcements. However, If fully implemented, the submitted NDCs for 2025 and 2030 are projected to lead to a warming of around 2.7°C by 2100.	11-13 Gt CO2e by 2030
5	All NDCs submitted as	UNFCCC[20]	The implementation of the communicated NDCs is estimated to result in aggregate global	15 Gt by 2030

[15] http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx.
[16] Tracking intended nationally determined contributions: what are the implications for greenhouse gas emissions in 2030?
[17] PBL Climate Pledge INDC tool [http://infographics.pbl.nl/indc/]
[18] World Energy Outlook Special Briefing for COP21
[19]Climate Action Tracker (2015) "INDCs lower projected warming to 2.7˚C: significant progress but still above 2 C" Climate Action Tracker. October. Refer [http://bit.ly/1O8bwmo]
[20] Synthesis report on the aggregate effect of the intended nationally determined contributions

	NDCs Considered	Study	Findings	Emission Gap with 2DS
	of 1 October 2015		mission levels of 56.7 (53.1 to 58.6) Gt CO2 eq in 2030	
6	All NDCs submitted as of 1 October 2015	UNEP[21]	Full implementation of unconditional NDCs results in emission level estimates in 2030 that are most consistent with scenarios that limit global average temperature increase to below 3.5 °C (range: 3 - 4 °C) by 2100 with a greater than 66 % chance.	12 Gt by 2030
7	NDC pledges as of 20 October 2015	Climate Scoreboard[22]	Our analysis shows that the national contributions to date, with no further progress post-pledge period, result in expected warming in 2100 of 3.5°C	About 78 Gt by 2100
8	October 2015	JRC Policy Brief[23]	The submitted NDCs on climate policy can put the world on a path to reduce emissions in a more anticipated manner compared to current policies. Unconditional NDCs would lead to 56.6 GtCO2e in 2030 (excl. sinks; +17% 2010 with 42.2 GtCO2e) while conditional NDCs combined would lead to a clear peak shortly before 2030 at 54.0 GtCO2e (+12% vs. 2010)	About 10 Gt by 2030
9	All NDCs submitted as of 1 October 2015NDC	Danish Energy Agency[24]	Combined mitigation efforts of submitted NDCs reduce global GHG emissions in 2030 by around 7 GtCO2e compared to current policy projections.	12 Gt by 2030
10	NDCs of 16 countries and one region (the EU-28)	Energy Transitions Commission (ETC)[25]	Implementing the current NDCs will set the world on a pathway to an average warming of between 2.2°C and 3.4°C by the end of the century	-

From these projections, it is clear that more sustained mitigation efforts at an economy-wide level are required to achieve a 2DS. Since the transport sector represents a significant share of total emissions and also holds great mitigation potential, it will be essential that NDCs incorporate bold transport mitigation measures in successive revisions and in detailed implementation plans.

NDC Analysis[26]

Overview

As of August 1, 2016, 160 NDCs representing 187 countries had been submitted to the UNFCCC, which represent about 96% of economy-wide global greenhouse gas emissions[27]. Figure 2 gives a breakdown of NDCs submitted by geographical region[28]:

[21] http://uneplive.unep.org/media/docs/theme/13/EGR_2015_ES_English_Embargoed.pdf
[22] Climate Scoreboard
[23] Analysis of scenarios integrating the INDCs
[24] Analyzing the 2030 Emission gap
[25] Pathways from Paris
[26] The analysis presented in this section is based on review of INDCs submitted as of November 12, 2015. See Annex I for further detail on country-level targets and proposed measures.
[27] Aggregate effect of the intended nationally determined contributions: an update
[28] Regional breakdown is based on World Bank classification, in which 'North America' includes Bermuda, Canada and the United States, and 'Latin America & Caribbean' includes Mexico, Central America, South America, and Caribbean countries.

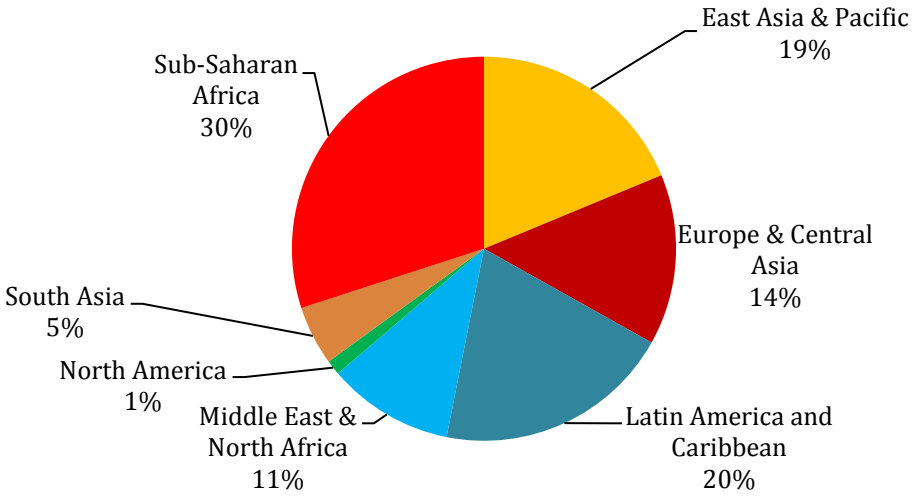

Figure 2: NDCs Submitted by Region

Transport Mitigation Measures and Targets

Among the 160 NDCs investigated, 75% explicitly identify the transport sector as a mitigation source, while in a further 18% of NDCs the transport sector is reflected as an intrinsic component of the energy sector. Among NDCs submitted to date, only 7.5% (i.e. Angola, Belarus, Bolivia, Comoros, Cuba, Guinea-Bissau, Guyana, Iran, Nauru, Sao Tome and Principe, Sudan & Somalia) make no reference to mitigation from the transport sector.

Transport Mitigation Measures by Mode

In total, there are 101 NDCs with transport emission interventions proposed, out of which 24 NDCs have proposed only one mitigation intervention, 49 NDCs have proposed two or three strategies, and 28 NDCs have proposed four or more strategies.

Box 1: Identification and prioritization of transport measures in NDCs[29]

A review of NDC development in selected countries by Ricardo – Energy and Environment indicates that countries mostly selected adopted bottom-up approaches using a range of sources to identify **mitigation** measures: international research, local and international expert advice, national policy documents and existing pilot projects, feasibility studies, and stakeholder workshops. In many countries, the timetable for the production of the NDC meant that there was insufficient time to undertake a comprehensive review of all mitigation options. Some countries have commented that they would like to undertake further analysis in the future and may possibly ratchet-up their mitigation efforts as a result.

The approach to prioritization varies considerably across countries: some countries provide no prioritization of measures while others have developed a more consultative process and used a range of criteria (e.g. co-benefits, feasibility) to identify the most appropriate measures. Measures promoting the uptake of alternative fuelled vehicles (e.g. biofuel or electric vehicles) and improvements to public transport systems are frequently proposed.

[29] The content of this box was provided by Ricardo – Energy and Environment

One specific gap which was encountered in a number of countries was analysis to estimate the cost of measures

Countries proposing a range of complementary transport mitigation measures to increase their overall mitigation potential can be found at all levels of development, including low-, middle-, and high-income countries e.g.:

- **Benin** (low-income) has pledged as part of its NDC to improve traffic flow in large cities; introduce duty relief for taxes on public transit vehicles; develop a river-lagoon transport system with navigable rivers; modernize and extend its rail infrastructure; and further develop its urban public transport.

- **Jordan** (upper middle-income) has proposed transport measures which include increasing public transport mode share to 25% by 2025; reducing vehicle fuel consumption and emissions; and reducing motorized vehicle travel, particularly in densely populated areas.

- **Japan** (high-income) has proposed transport measures which include promoting modal shift to public transport and railways; improving fuel efficiency and promoting next-generation automobiles; improving traffic flow; promoting eco-driving and car sharing; and introducing low-carbon aviation and maritime strategies.

Box 2: Case study Bangladesh NDC[30]

Bangladesh set targets for an economy-wide reduction of 5% in GHG emissions compared to BAU by 2030 covering the power, transport and industry sectors based on existing resources. This includes an estimated 9% reduction in transport. Higher economy-wide reductions are deemed possible (15%) subject to appropriate international support in the form of finance, investment, technology development and transfer, and capacity building. This would involve a 24% reduction in transport emissions. In both scenarios, transport has the largest reduction potential.

Bangladesh used the Long-range Energy Alternatives Planning System (LEAP) model[31] to produce GHG emission projections. For modeling purposes, the transport sector in Bangladesh was divided into four sub-sectors: road transport, rail transport, waterborne transport, and aviation.

National data was fed into the model, mainly from the BBS2012a Statistical Yearbook and the Second National Communication. Some local surveys were also undertaken in order to improve base year data and refine modeling assumptions. This was particularly important in view of the very high congestion levels in Dhaka. However, there still remain issues of data quality and traceability. For example, vehicle efficiency data is not publicly available on a consistent, regular and verified basis. Furthermore, projections of future transport activity are not available and in most cases had to simply be extrapolated using historic trends, which may not necessarily be an accurate guide to future trends.

A long list of mitigation measures was produced by the team and shortlisted through discussions with the Government and local consultants. The mitigation actions included in the NDC are based on measures already been identified by the Government (especially in the Second National

[30] The content of this box was provided by Ricardo – Energy and Environment.
[31] https://www.energycommunity.org/default.asp?action=introduction

Communication) and deemed feasible. They focus on two strands of action:

- Modal shift from road to rail, delivered through a range of measures, including underground metro systems and bus rapid transit systems in urban areas.
- Reduced congestion and improved running of traffic. This will be achieved by a number of measures, including building of expressways to relieve congestion and public transport measures.

Low, medium and high assumptions were used for the improvement in fuel efficiency for road transport and modal shift to rail in order to estimate emissions impacts under different scenarios.

A range of criteria was taken into account when assessing the mitigation options. These included: mitigation potential, co-benefits (e.g. air quality, road safety, jobs, access to energy) and technical feasibility. Cost-effectiveness was also considered albeit at a high level only as no specific costing was produced.

No transport-specific adaptation measures were identified for Bangladesh. However, it is clear from the NDC that any infrastructure investment will need to take adaptation needs into account so adaptation planning is likely to be a key element of any transport investment going forward.

Bangladesh is already monitoring fuel burn from various sources but no other transport-specific MRV indicators were specified as part of the NDC. However, the NDC highlights the need to develop a national MRV system as part of its implementation.

Box 3: Case study Cambodia NDC[32]

Cambodia proposes a GHG emissions reduction of 27% compared to the baseline scenario in 2030, conditional upon the availability of support from the international community. This includes a 3% reduction in GHG emissions from transport compared to the baseline.

In the business-as-usual scenario, the model anticipates that the transport sector will be the greatest source of emissions in Cambodia by 2050.

In order to estimate future GHG emissions, the LEAP model was used. Several Government ministries as well as a range of reports and research by local consultants supplied inputs into the model.

Input data for the transport sector mainly stemmed from the available sources within the Ministry of Public Works and Transport (MPWT). These provide data on vehicle registration, vehicle type (i.e. cars, vans, minibuses etc.), vehicle costs or annual mileage. This data was supplemented with fuel economy assumptions for the different vehicle types and emission factors based on IPCC guidelines.

Modeling could be strengthened by: updating the underlying vehicle registration data which dates back to 2007; using actual fuel economy of vehicles rather than fuel economy per type; increasing transparency with regards to assumptions used (e.g. for mileage, vehicle stock or emission factors).

Mitigation options were identified on the basis of existing knowledge of the members of the inter-ministerial working group and a long list of around 35 options was produced.

The prioritization process involved ranking mitigation options against thirteen feasibility indicators, which broadly cover varying aspects of implementation, sustainability and alignment with the development goals of the Government of Cambodia. Preliminary rankings were carried out by the project team and were then refined by means of a stakeholder workshop, attended by members

[32] The content of this Box was provided by Ricardo – Energy and Environment.

of the Cambodian Climate Change Department and representatives from a number of relevant ministries. However, there was insufficient time in the NDC process to carry out a rigorous assessment of the criteria. In particular, current documentation suggests that 'only' the more 'easily' assessable mitigation options have undergone a cost assessment.

While transport is expected to be the greatest source of GHG emissions in 2050, it became clear during the NDC preparation process that mitigation measures in the transport sector are not currently well researched and understood with the result that they were generally deemed unfeasible as part of the process. This suggests that Cambodia would gain substantial benefit from a more rigorous analysis of mitigation options in the transport sector, or from some targeted policy support.

Transport has not been identified as a priority focus for adaptation action.

Cambodia has already taken steps to ensure that its monitoring and evaluation (M&E) system includes indicators to measure progress, including NDC implementation, both for adaptation and mitigation. The MRV system will build on the greenhouse gas inventory. A national M&E framework will be developed, while activities to operationalize it in key sectors have already begun. No transport-specific details are provided at this point however.

Figure 3 gives a breakdown of relative focus on passenger and freight transport in NDCs, as well as describing the share of NDCs focusing on various transport sub-sectors.

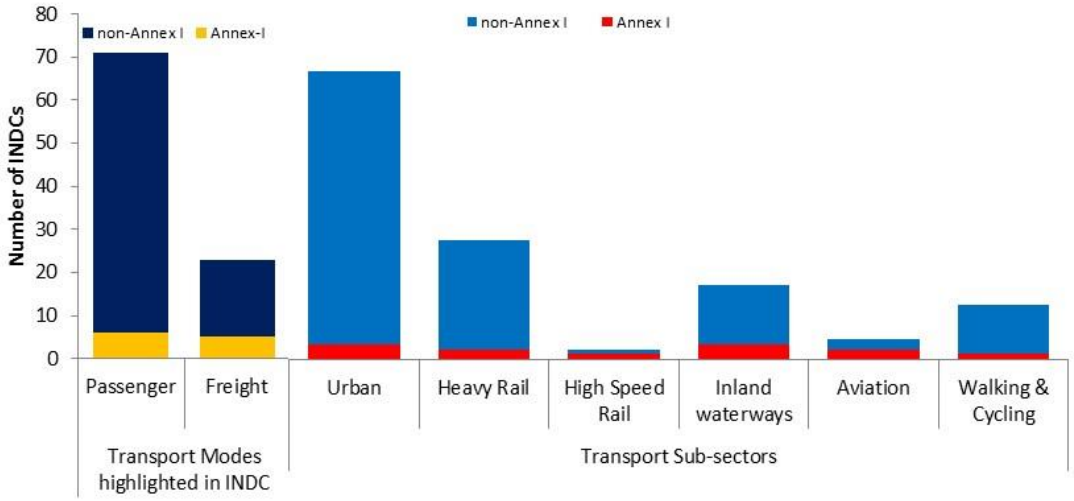

Figure 3: Share of Mitigation Measures in NDCs by Mode and Sub-Sector

NDC transport mode share is heavily skewed towards passenger transport, which is included in 91% of NDCs identifying specific transport modes. Among passenger transport modes, urban transport measures are mentioned in 74% of measures, followed by measures on heavy rail and inland waterways. In contrast, high-speed rail (2%), aviation (5%) and walking and cycling (14%) have received relatively less attention among passenger transport mitigation strategies.

Freight is currently relatively neglected across NDCs, and is included in just 29% of NDCs identifying specific transport modes. Although in terms of energy consumption,

current passenger and freight mode shares are about 60% and 40%, respectively,[33] and recent estimates suggest that freight demand (in ton-km) could increase by 350% between 2010 and 2050 in the absence of policies to improve freight efficiency[34], a trend that would justify a greater emphasis on freight related measures in NDCs.

Transport Mitigation Measures by Type

Generally, low carbon transport interventions can be categorized using the 'Avoid-Shift-Improve' (ASI) typology. 'Avoid' strategies describe measures to reduce motorized trips and trip length; 'Shift' strategies transfer travel activity to more energy-efficient modes; and 'Improve' strategies focus on increasing vehicle energy efficiency and decarbonizing energy sources.

Figure 4 indicates that the majority of proposed measures (about 63% of nearly 307 proposed mitigation measures) in NDCs represent 'Improve' strategies. This focus on technological measures helps to explain that NDCs as formulated at present do not fully optimize the mitigation potential of the transport sector. As indicated in the IPCC Fifth Assessment Report (AR5), an integrated set of 'Avoid' and 'Shift' strategies (e.g. urban development and infrastructure investment, linked with more compact urban form to support cycling and walking), to complement technological 'Improve' measures could potentially reduce GHG intensity by 20–50% below a 2010 baseline by 2050.[35]

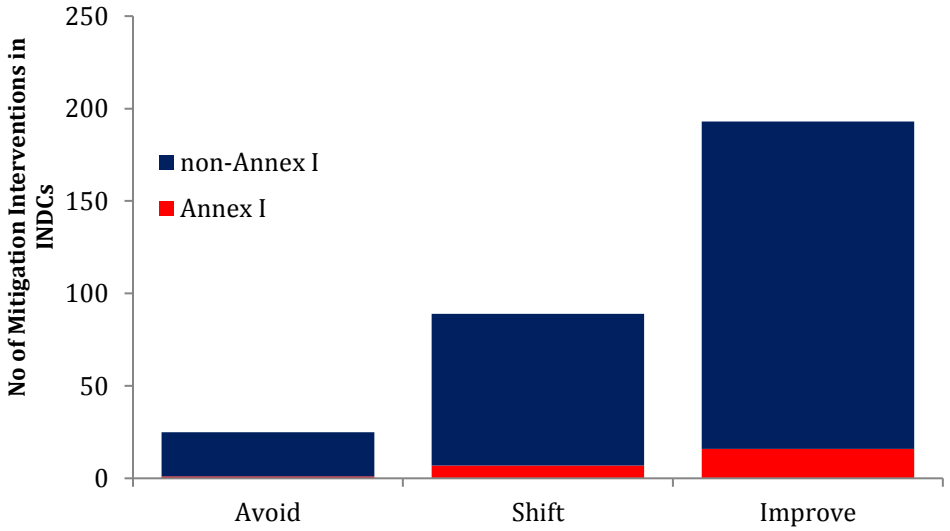

Figure 4: Typology of Transport Mitigation Interventions in NDCs

Figure 5 gives a breakdown of specific transport mitigation strategies, as distinguished among countries of different income categories.

[33]International Energy Agency. (2015). "Tracking Clean Energy Progress 2015". International Energy Agency. Refer [http://bit.ly/1FMWLNx]
[34]International Transport Forum. (2014). "ITF Transport Outlook: Scenarios to 2050". International Transport Forum. Refer [http://bit.ly/1ZBFggO]
[35] IPCC "IPCC Fifth Assessment Report - Chapter 8 Transport". Refer [http://bit.ly/1sNiuGm]

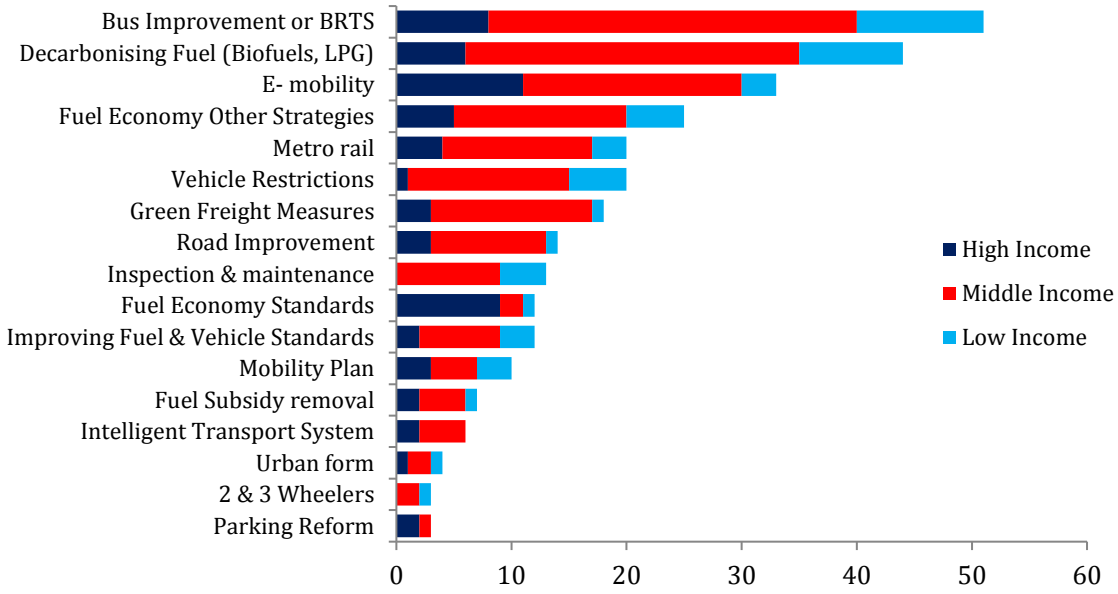

Figure 5: Typology of Transport Mitigation Strategies in NDCs

In high-income countries, nearly 50% of mitigation strategies are directly related to fuel efficiency improvement or decarbonizing fuel, while in middle- and low-income countries, mitigation strategies are relatively more balanced, with strategies directly related to fuel efficiency improvement or decarbonizing fuel contributing about 35%-36% of mitigation strategies. While fuel economy standards and e-mobility are prioritized in high-income countries, middle and low-income countries rely more heavily on public transport improvements, which account for about a quarter of planned mitigation measures.

Further, low and middle-income countries tend to prioritize import restrictions based on vehicle age (e.g. Gabon) along with instruments to improve fleet fuel efficiency (e.g. eco-driving in Cambodia, fuel efficient vehicle incentives in Grenada and Cameroon). Middle-income countries also prioritize improvement in inspection and maintenance, fuel quality and vehicle emission standards, which could provide significant reductions in air pollutants. In addition, proposed green freight measures involve shifting from road to railways and waterways.

About 3% of countries (including the Central Africa Republic, Chile, and Mauritius) include plans to reduce short-lived climate pollutants (SLCPs) by controlling black carbon emissions from the combustion of fossil fuels. These proposals can help to manage a significant contributor to short-term climate-warming potential while simultaneously reducing harmful effects on health, agriculture and ecosystems.

Subsidized fossil-fuel use accounted for 14% of total global CO2 emissions in 2012, and the cost of such subsidies totaled $510 billion in 2014.[36] A recent analysis from IEA suggests that for global energy-related emissions to peak by 2020, it is essential to eliminate fossil-fuel subsidies in net importing countries within the next 10 years, which would provide a emission reduction of about 160 Mt CO2e in 2020[37]. However, among 160 countries with NDCs, only seven (Brunei, Ethiopia, India, Morocco, Nigeria, United Arab Emirates & Viet Nam) include fuel subsidy reduction among their proposed mitigation strategies.

The transport sector can also benefit from decarbonizing efforts in the electricity sector, with many countries including measures in NDCs to expand e-mobility (e.g. Barbados and Republic of Korea to provide tax incentives for electric vehicles; and Kiribati, Marshall Islands, and New Zealand to increase use of renewable energy in the transport sector). IEA estimates that renewable energy could become the leading source of electricity by 2030, and the carbon intensity of the power sector is projected to improve by 30% during the same period.[38] More than 100 countries have established renewable energy targets over the last decade.[39]NDC

Box 4:
Transport Mitigation Actions by Non-State Actors in the Transport Sector

Non-state actors are making valuable contributions to transport mitigation actions in parallel to country-level efforts outlined in the NDCs. As a follow-up to the call to action by Secretary General Ban Ki-moon in September 2014 and since COP20 in December 2015 by the Lima-Paris Action Agenda (LPAA) 14 transport related voluntary commitments were made, which provide examples of non-state actors taking concrete measures to complement NDC proposals.[40]

The 14 voluntary transport commitments include, among others, the following initiatives:[41]

- The **Airport Carbon Accreditation** initiative aims to reduce carbon emissions and achieve best practices in carbon management at airports.
- The **C40 Clean Bus Declaration of Intent** is designed to help manufacturers and other stakeholders to make advanced bus technologies more affordable for cities.
- The **Global Green Freight** Action Plan promotes the development of green freight programs.
- The **ICAO/ATAG Climate Action in Aviation** initiative promotes short, medium and long-term goals to cut emissions from aviation.
- The **International Zero Emissions Vehicle Alliance** encourages an accelerated adoption of Zero-emission vehicles.
- The **ITS for the Climate** initiative focuses on the use of Intelligent Transport Services to reduce CO_2 emissions from transport.
- Low Carbon Road and Road Transport Initiative (LC2RTI): Green Roads-Clean Growth
- The **Navigating a Changing Climate** Initiative promotes a shift towards low-carbon inland and maritime navigation infrastructure.
- The **UIC Low Carbon Sustainable Rail Transport Challenge** calls for energy and CO_2

[36] International Energy Agency. (2015). "Energy and Climate Change - World Energy Outlook Special Report". International Energy Agency. Refer [http://bit.ly/1FW2d1Y]
[37] International Energy Agency. (2015). "Energy and Climate Change - World Energy Outlook Special Report". International Energy Agency. Refer [http://bit.ly/1FW2d1Y]
[38]International Energy Agency. (2015). "Energy and Climate Change - World Energy Outlook Special Report". International Energy Agency. Refer [http://bit.ly/1FW2d1Y]
[39] IRENA. (2015), Renewable Energy Target Setting. IRENA. June. Refer [http://bit.ly/1RGq90i]
[40] The Lima-Paris Action Agenda (LPAA) is succeeded by the Global Climate Action Agenda (GCAA).
[41] http://ppmc-cop21.org/transportinitiatives/

emission reductions and a greater mode share for rail transport.

- The **UITP Declaration on Climate Leadership** encourages member public transport agencies to reduce carbon emissions and strengthen resilience within their cities and regions.
- **The Action Platform on Urban Electric Mobility (UEMI)** is an initiative to increase the market share of electric vehicles in cities to at least 30% of all new vehicles sold by 2030.
- The **MobiliseYourCity** partnership helps local governments in developing countries plan sustainable urban mobility, to reduce GHG emissions and develop more efficient cities.
- The **Vehicle Fuel Efficiency Accelerator** aims to double fuel economy and reduce fuel waste.
- The **World Cycling Alliance (WCA)/European Cyclists' Federation (ECF)** seeks to increase modal shift to cycling worldwide and double cycling mode share in Europe by 2020.

Transport Emission Targets in NDCs

While about 63% of NDCs propose transport sector mitigation measures; a much smaller share of NDCs (9%) have proposed a transport sector emission reduction target (see Box 5), representing countries with only about 3% of global transport emission share. In addition, 8% of NDCs include national transport business-as-usual (BAU) emission projections, and 12% of NDCs include estimates of country-level transport mitigation potential.

Box 5:
Transport Emission Reduction Targets among NDCs[42]

Emissions impacts of transport policies are difficult to quantify when compared with other energy consuming sectors, since there is a great diversity of transport mitigation strategies among individual countries. In addition, there exist limited data on vehicles, usage, fuel, and per-kilometer CO_2 emissions in developing countries[43]. For these reasons, many countries have traditionally focused on energy sector-related measures to set reduction targets.

Countries often do not allocate emissions targets to specific sectors (including transport), as they do not have detailed data on the costs and benefits of comparative sectorial reductions. Thus, the 2030 targets established in NDCs of most countries are generally economy-wide, and are often not represented as a single unconditional value, but rather as a range of values or a conditional value. In some cases this is due to the fact that countries prefer to have flexibility in operationalizing their NDC commitments, and in other cases conditional commitments hinge on external funding (especially in the case of developing countries)[44].

The low prioritization of the transport sector relative to the energy sector among NDCs reflects ongoing discussion from a recent technology needs assessment report, in which 90% of Parties prioritized the energy sector as an area of need, while within the energy sector, the transport sector was prioritized among only 41% of Parties.[45] In addition, fuel switching was among the highest-priority technology categories among transport sub-sectors, which is consistent with the fact that decarbonizing fuel is the most frequently proposed transport sector mitigation strategy

[42] The content of this box was provided in part by Ricardo – Energy and Environment.
[43] Due to this inherent complexity, the sustainable transport sector has traditionally received less attention than other sectors in climate finance.
[44] UNFCCC (2013). "Quantified economy-wide emission reduction targets by developed country Parties to the Convention: assumptions, conditions, commonalities and differences in approaches and comparison of the level of emission reduction efforts". UNFCCC, October, Refer [http://bit.ly/1MxY5ME]
[45] UNFCCC (2013). "Third synthesis report on technology needs identified by Parties not included in Annex I to the Convention". Refer [http://bit.ly/1LteZuS]

among NDCs.

A review by Ricardo – Energy and Environment of NDCs representing 15 countries with a combined population of more than 500 million people indicates that the majority of the countries advised on NDCs by Ricardo have produced national emission reduction targets relative to projected future emissions in 2030, rather than reductions against a historical base year or an absolute level of reduction. While only a few countries produced both economy-wide and sectorial targets (including transport), most aimed to quantify the reduction potential from transport to inform their national targets.

Most countries differentiate between unconditional targets – i.e. what they can achieve with existing resources – and conditional targets which rely on financial support from international sources.

Many of the countries considered have relied on the use of quantitative models in order to estimate future emissions, with LEAP being the most popular choice. The main differences between countries relate to the availability and quality of national data being fed into the models, and to the level of detail in the analysis e.g. the breakdown by transport modes, and inclusion of aviation and shipping. Where national data was not available, assumptions from international sources (e.g. IPCC) were used.

In all cases, there is significant room for improvement in the quality of data. The main issues relate to:

- uncertainties in the base year data and inconsistencies between different data sources;
- uncertainties in the future evolution of emissions where economic growth and ongoing structural and socio-economic change may impact emissions in unexpected ways;
- the limited amount of time available to address these uncertainties and the lack of resources to verify existing data sources;
- the extent to which assumptions from international sources (e.g. on emission factors, fuel efficiency, mileage, stock turnover) are adequate for a given country.

Most countries acknowledge that data quality is an issue given the importance of transport in total country emissions. This issue will remain in further work that aims to develop more detailed transport decarbonization plans. Innovative and novel ways, such as the use of proxy datasets, will be required.

Table 2 provides a comparison of *direct* transport-specific emission targets relative to economy-wide targets. Notably, Burkina Faso, and Trinidad and Tobago have set transport reduction targets that are at least twice as ambitious as their economy-wide emission reduction targets.

Country	Transport CO2 Reduction Target	Economy-wide CO2 Reduction Target
Bangladesh	24% reduction from 2030 BAU	15% below BAU (power/transport/industry)*
Burkina Faso	42% below BAU	18.2% below BAU
D.R. Congo	10Mt CO2e reduction (urban transport)	17% below BAU by 2030
Dominica	16.9% below 2014 levels by 2030	44.7% below 2014 levels by 2030
Ethiopia	10 MT by 2030	64% compared to BAU in 2030*
Gabon	20% reduction below 2025 BAU	At least 50% reduction from BAU by 2025
Grenada	20% reduction below 2010 by 2025	30% reduction below 2010 levels by 2025
Ivory Coast	5.73% reduction below 2030 BAU	28% reduction from 2030 BAU scenario
Japan	27% below 2013 by 2030	26% by FY 2030 compared to 2013
Marshall Islands	27% below 2010 by 2030	32% below 2010 levels by 2025

Moldova	15% below BAU by 2020	78% below 1990 levels by 2030*
Seychelles	30% below BAU by 2030	29% below BAU by 2030
Trinidad and Tobago	30% below BAU by 2030	15% below BAU by 2030*

Table 2: Comparison of Transport and Economy-wide Direct Emission Reduction Targets (* = conditional reduction target)

In addition, a number of countries have established *indirect* transport emission reduction targets in their NDCs, which target variables other than CO2 emissions reduction (e.g. public transport mode share, renewable energy share, fuel consumption reduction, fuel efficiency) as a means to reach desired emission reductions (Table 3).

Country	Indirect Transport Sector targets
Barbados	29% reduction in non-electric energy consumption (including transport) in 2030 compared to BAU
Bangladesh	Shift in passenger traffic from road to rail of up to around 20% by 2030 compared to BAU; 15% improvement in vehicle efficiency
Belize	Minimum 20% reduction in conventional transport fuel use by 2033
Burkina Faso	42% lower consumption of oil in transport
Canada	Renewable fuels regulations require that gasoline contain an average 5% renewable fuel content and that most diesel fuel contain an average 2% content
China	Promote public transport mode share in large- and medium-sized cities, targeting 30% by 2020
Congo	Limit transport energy consumption growth to 70% of baseline by 2025
India	Increase share of railways from 36% to 45% of total land transport
Israel	20% mode shift from private to public transport
Jordan	Increase public transport mode share to 25% by 2025; deploy 3,000 charging stations to support 10,000 ZEVs by the private sector
Lao PDR	Increase share of biofuels to meet 10% of demand for transport fuels by 2025
Liberia	Blend up to 5% of palm oil biodiesel with gasoline and diesel by 2030
Malawi	Increase number of public transport users by 30%
Morocco	Reduce energy consumption in transport 23% by 2030
Mongolia	Increase share of private hybrid vehicles from about 6.5% in 2014 to about 13% in 2030
Namibia	Commission mass transport system in Windhoek to reduce number of private cars and taxis by about 40%
Republic of Korea	Strengthen average emission standard from 140g/km in 2015 to 97g/km in 2020
South Africa	Investment in public transport to grow at 5% per year
Seychelles	30% reduction in transport fuel use
Togo	20% fossil fuel reduction in road transport sector

Table 3: Indirect Transport Sector Emission targets in NDCs

Measuring the Impact of Transport Targets and Measures vis-à-vis 2DS

A quantitative assessment of transport targets and measures in the NDCs vis-à-vis a targeted 2DS (and subsequent 1.5DS under the Paris Agreement) is challenging for two primary reasons. First, many countries have not included all existing and potential transport related measures in their NDCs, and as a consequence, an impact assessment of transport components among NDCs is likely to fall short of actual emission reductions realized by 2030. Second, measurement, reporting and verification (MRV) mechanisms for the transport sector within the UNFCCC framework are generally weaker than for other sectors, as described in the following box.

Box 6:
Measurement, Reporting and Verification of NDC Commitments

The 2007 Bali Action Plan defined the principle of measurement, reporting and verification (MRV) for both developed and developing countries. This principle was further improved through a number of subsequent decisions by the Conference of the Parties (COP), resulting in a comprehensive MRV framework under the UNFCCC. National communications (NCs), biennial reports (BURs) and biennial update reports (BURs) are at the heart of the MRV framework to mark progress toward UNFCCC objectives.

However, based on a review of 85 NCs and 50 BURs/BRs submitted to UNFCCC, it was found that only about 65% of NCs and 80% of BURs include transport emissions projections, and only about 50% of NCs include transport activity data.[46] Thus, it is necessary to ensure that transport data are fully incorporated in NCs/BURs – and that these be submitted at regular intervals and based on recent emissions reporting – to facilitate effective MRV of transport sector contributions toward NDC implementation.

Analysis of the NDC targets indicates that implementation of currently proposed economy wide targets and measures proposed within NDCs will not keep emissions within a 2DS (for both economy-wide and transport-specific emissions). In order to achieve a 2DS scenario within the transport sector, emissions must be below 2010 levels by 2030 (and for the more ambitious 1.5DS, about 30% below 2010 levels[47]); however, under a BAU scenario developed by the SLoCaT Partnership, transport emissions would continue to rise sharply.[48] With implementation of a low carbon scenario (LCS) (developed by the SLoCaT Partnership, based on more than 350 global mitigation potential studies), the projected BAU emission gap of 41% (3.4 Gt CO2e) could be reduced to a gap of about 23% (1.5 Gt CO2e) from 2DS (Figure 6).

[46] This analysis corroborates the evidence presented in the UNFCCC sixth review of non-Annex I national communications that "regarding energy use, most Parties reported broadly or specifically on the lack of activity data on household biomass consumption, vehicles and equipment efficiency in the transport and industrial subsectors, and international bunker fuels."

[47] This estimate assumes the same share of decarbonization in the transport sector as estimated in the 2DS scenario, and the economy-wide emission gap between 2DS and 1.5DS scenario is adjusted based on the estimated transport sector mitigation share under a 2DS.

[48] See: http://ppmc-cop21.org/emission-reduction-potential-in-the-transport-sector-by-2030/ for the analysis of the Emission Reduction Potential in the Transport Sector by 2030 carried out by the SLoCaT Partnership

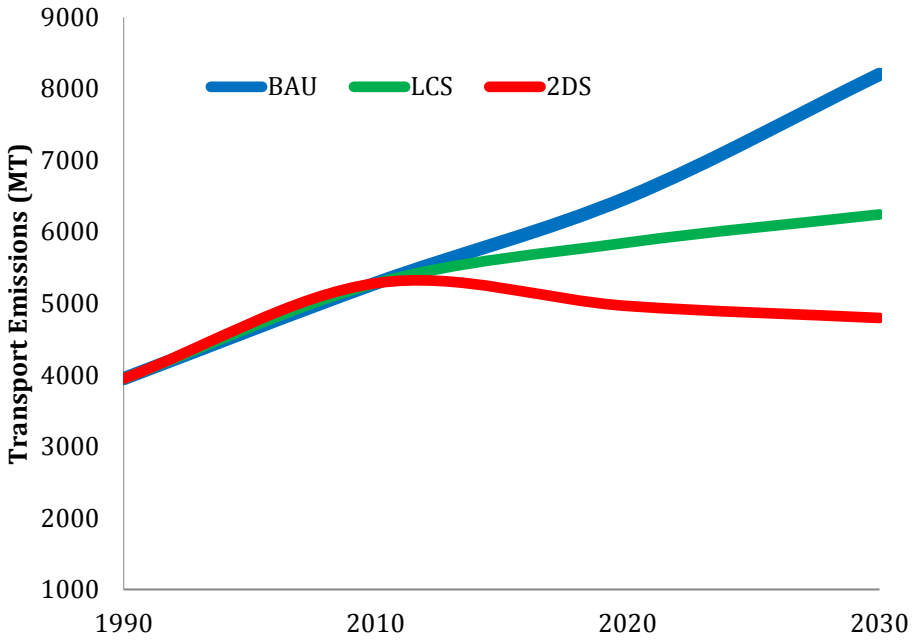

Figure 6: Comparison of Transport Sector Emissions Scenarios

Based on current emission trajectories, expected low carbon projections, and actual transport emission targets, it is evident that mitigation ambition in current NDCs will not be sufficient to achieve a 2DS within the transport sector by 2030. The SLoCaT report '2030 Emission Reduction Potential in the Transport Sector' concludes that without significant low carbon policy interventions, a continuation of current transport activity trends could lead to a 55% increase in global transport CO_2 emissions by 2030 compared with 2010 levels. Most of the projected transport sector emissions growth would be concentrated in developing countries where emissions are set to grow at a higher intensity (i.e. two to four times greater) than economy-wide emissions.

As was described in the case studies for Bangladesh and Cambodia, transport measures in NDCs are mostly based on existing mitigation plans and do not fully include the mitigation potential included in the Low Carbon Scenario developed by SLoCaT based on the review of 350 global mitigation potential studies. This indicates that as part of the expected ratcheting-up of mitigation ambition in the NDCs there is the possibility to increase the relevance of NDCs for the 2DS, but as shown in Figure 6 not even the full implementation of the LCS would enable the transport sector to comply with the 2DS. Thus, any attempt at achieving a 2DS would require significant scaling-up of mitigation contributions from the transport sector as defined in NDCs.

Transport Mitigation Investment Requirements

Globally it has been estimated that roughly $13.5 trillion in investments in energy efficiency and low-carbon technologies will be required over the next 15 years to implement the NDCs[49]. Investments required for the transport sector to achieve desired mitigation goals is highlighted in about 9% of NDCs, and for countries with transport sector emission targets, 29% of NDCs provide investment estimates.

[49] http://www.climatefinancelandscape.org/

Table 4 gives examples of projected investment requirements to implement proposed transport mitigation measures among NDCs.

Country	Priority Transport Projects	Investment Requirements (USD)
Bangladesh	Dhaka MRT and elevated highway	5.3 billion (2011-2030)
Benin	Development of intra- and inter-urban transit	2.78 billion (2011-2030)
Burkina Faso	Improvement of public transport; use of biofuel	98 million
Eritrea	Improve rail and bus transport	1 billion
Lao PDR	Implementation of nationally-appropriate mitigation actions (NAMA) in transport sector	105 million (2015-2020)
Lesotho	Improvement of vehicle efficiency, modal shift to public transport	Additional investment of 1.5 million (2020), 2.0 million (2030)
South Africa	1. Electric vehicles 2. Hybrid electric vehicles (20% by 2030)	1. 513 billion (2010-2050) 2. 488 billion
Togo	Promotion of low carbon transport modes	40 million

Table 4: Transport Sector Investment Requirements Included in NDCs

10% of NDCs also emphasize co-benefits such as reduced congestion, reduced air pollution and resultant health benefits, improved mobility, increased road safety, and synergies between adaptation and mitigation actions, which can help to establish total project benefits relative to total costs. 8% of NDCs make explicit reference to transport mitigation strategies using quantitative approaches such as cost-benefit analyses, multi-criteria analyses (incorporating co-benefits), and/or marginal abatement curves, which can help to further support analyses of investment needs.

Increasing details on needed investments can help to ensure that bold transport measures proposed in NDCs will be matched with required sources of funding (e.g. public or private sector finance, climate finance instruments, development banks).

Global transport investment could be significantly scaled up through fossil fuel subsidy reform. To this end, several countries have included fossil fuel subsidy reform in their NDCs (i.e. Ethiopia, India, Morocco, Viet Nam, United Arab Emirates). Introducing a fossil fuel extraction levy could provide up to $50 billion annually for sustainable transport and other mitigation activities.[50]

Transport Sector Adaptation Measures

Adaptation in the transport sector is necessary for both developed and developing countries, as transport systems worldwide are vulnerable to increasing impacts of extreme weather, and rapid urbanization and motorization increase the potential for catastrophic impacts. Sustainable transport systems must adapt to climate change to maintain reliability and increase ridership, and thus to achieve full mitigation potential. However, adaptation is generally less well represented than mitigation in the transport sector, as shown in **Error! Reference source not found.**.

[50] "Dollars," ECO NGO Newsletter 3.

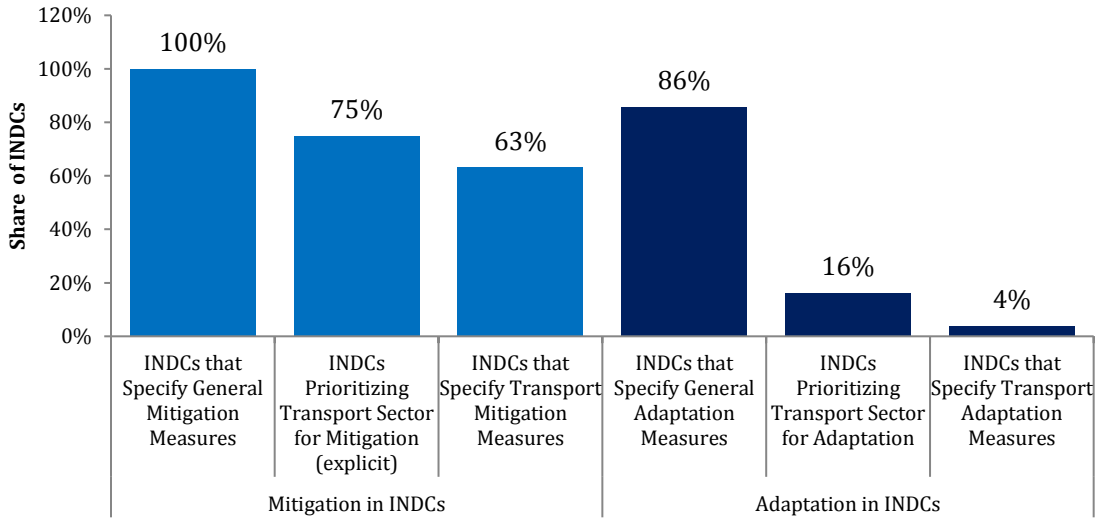

Figure 7: Transport Mitigation and Adaptation Priority in NDCs

Adaptation has generally received less attention than mitigation in NDCs, although being mentioned in an economy-wide scope in 137 NDCs submitted. The transport sector is mentioned in general terms among climate adaptation measures in 16% of NDCs, and 4% of countries identify transport-specific adaptation strategies, which focus mainly on vulnerability assessments and infrastructure resilience planning (Table 5).

Country	Transport-Specific Adaptation Measures
Bangladesh	Adaptation priorities include climate resilient infrastructure, and improvement of drainage systems. Projects underway through the Inland Water Transport Authority and the Ministry of Road Transport and Bridges.
Belize	Vulnerability assessment of transport infrastructure, particularly in urban areas and areas critical to sustaining the country's productive sectors (tourism, agriculture and ports).
Gambia	Improved resilience of road networks under changing climate conditions.
Madagascar	Effective application of existing or newly established sectorial policies, including flood-resistant terrestrial transport infrastructure standards.
Maldives	Coastal protection measures to protect the shoreline of Hulhule, the island that contains Ibrahim Nasir International Airport, as well as for other air and seaports.
Republic of Moldova	Analyzing adaptation options, including altering assumptions about infrastructure design and operations, and incorporating uncertainty into long-range decision making.

Table 5: Transport-Specific Adaptation Measures in NDCs

Raising the profile of transport adaptation measures in the detailed implementation plans of current NDCs (as well as in future iterations of NDCs) can help to ensure the long-term success of mitigation investments, which can be achieved by incorporating in NDCs a growing number of transport adaptation and resilience efforts currently underway at national and regional levels.[51]

[51] A separate SLoCaT Partnership study: "Expanding Efforts on Climate Change Adaptation and Resilience in the Transport Sector" provides an overview of the rapidly growing knowledge base on adaptation to

NDCs and the Paris Agreement on Climate Change

The Paris Agreement on climate change, the outcome document of COP21, has various implications for solidifying the position of NDCs within the UNFCCC framework.[52] The Agreement proposes a timeframe up to 2025 (or 2030) to communicate by 2020 a new NDC (or substitute) and to do so every five years. The decision also requires the submission of a synthesis report to the UNFCCC Secretariat at least 9-12 months in advance of the review with a view to facilitating the clarity and transparency of the NDC.

The Agreement also calls for a facilitative dialogue among Parties in 2018 to take stock of the collective efforts of Parties in relation to progress towards the long-term goals of the Agreement and to inform the preparation of NDCs. The implementation of the agreement by all member countries together will henceforth be evaluated every 5 years, with the first evaluation planned for 2023.

The Agreement further establishes that all countries should present National Adaptation Plans and that NDCs should contain nationally determined contributions on adaptation. The COP21 decision underscores the need to enhance action on this topic through a range of detailed provisions. This is particularly true for sustainable transport solutions that can combine increases in mitigation potential with resilience as a mutual benefit.

The Agreement's requirement to increase ambition to a target of well below the 2DS and pursuing efforts to limit the temperature increase to 1.5 degrees Celsius above preindustrial levels is a strong call to action for the transport sector to accelerate the decarbonization of the transport sector. However, the Agreement also "notes with concern that the estimated aggregate greenhouse gas emission levels in 2025 and 2030 resulting from the NDCs do not fall within least-cost 2 ˚C scenarios, and…that much greater emission reduction efforts will be required than those associated with the NDCs in order to hold the increase in the global average temperature to below 2 ˚C above pre-industrial levels…or to 1.5 ˚C above pre-industrial levels."

Recent assessments by a range of international bodies have also concluded that current NDCs will not be sufficient to achieve a 2DS. However, the Paris Agreement does not foresee substantive review and strengthening of NDC ambition levels for the 2020-2025 period, despite broad consensus that ambition levels currently captured in NDCs are on a projected course for a 2.7 degree Celsius increase and thus are likely to fall well short of a 2DS, let alone a 1.5 DS.

Thus, in summary, if we have weak efforts pre-2020 and inadequate 2020-2025 NDCs, the transport sector is likely to be placed on a trajectory that makes it increasingly unlikely to achieve a 1.5DS by 2030 or 2050. This trend sends a clear message to all sectors that there is need for disruptive change in the area of decarbonization, as incremental approaches will not be sufficient to make needed strides in this direction. [53]

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climate change in transport, as well as growing number of toolkits and (pilot) projects. See: http://ppmc-cop21.org/expanding-efforts-on-climate-change-adaptation-and-resilience-in-the-transport-sector/

[52] UNFCCC Conference of the Parties (2015) "Adoption of the Paris Agreement." Refer [http://bit.ly/1YbayHO]

[53] SLoCaT (2015). "COP21 Final Preliminary Report" SLoCaT Partnership. Refer [http://bit.ly/2cyc2hw].

Conclusions and Recommendations

Conclusions

- NDCs mark the first instance of defining country-driven sector-specific contributions through the UNFCCC.

- NDCs open the door for more ambitious action on transport and climate change, allowing the transport sector to make a substantive contribution to economy-wide emission reductions.

- NDCs present an opportunity to raise collective mitigation and adaptation ambition through appropriate low-carbon transport strategies, as demonstrated in bold submissions from countries across global regions and at varying levels of development.
- Proposed transport mitigation *measures* are featured in more than half of submitted NDCs, which focus primarily on urban transport, heavy rail, and waterways, and secondarily on freight transport, walking and cycling and high-speed rail.

- Transport sector *targets* (with varying baselines) have been included in a smaller number of NDCs, including both *direct* GHG emission reduction targets, and *indirect* targets based on transport mode share, renewable energy share, or fuel efficiency.

- According to a separate SLoCaT analysis, transport related targets and measures in NDCs do not reflect the full mitigation potential of the transport sector, and thus it will be necessary to intensify low carbon transport strategies well beyond those included in NDCs in order to achieve a 2DS (and to scale them up even further to achieve a more ambitious 1.5DS).

- Transport adaptation measures generally contain less detail than mitigation measures in NDCs submitted, which reflects a similar prioritization of adaptation relative to mitigation at an economy-wide level.

Recommendations

- Ratcheting up transport sector measures and levels of ambition in successive NDC revisions (especially revision targeted for 2018) can maximize sectorial leverage to reduce economy-wide emissions.

- Taking a more balanced approach to transport mitigation in NDC implementation plans, including integrated 'Avoid,' 'Shift,' and 'Improve' strategies, can create multiplier effects, and could increase overall emission reduction impact.

- Quantifying investment requirements for proposed low-carbon transport measures in NDC implementation plans is a key step towards generating needed funding. Strategies to generate additional funding could be complemented by

elimination of fossil fuel subsidies, which could in turn be invested in sustainable transport measures.

- Compiling country-level transport data at more regular intervals could facilitate more effective MRV of transport sector contributions during NDC implementation. Emerging technologies could help to improve the quality, frequency, and affordability of collecting and analyzing transport data.

- NDCs could spur regional dialogue among countries to implement a more comprehensive set of transport measures based on common demographic trends and development priorities. This could benefit the ratcheting up of transport mitigation and adaptation measures in NDCs.

- NDCs could be used to stimulate 'matchmaking' among national and sub-national entities. NDCs represent 'demand-side' commitments that can be complemented by 'supply-side commitments' represented by a series of low-carbon transport commitments under the Lima-Paris Action Agenda (LPAA), and to be carried forth under its successor, the Global Climate Action Agenda (GCAA)[54].

- The global sustainable transport community could support countries in shaping detailed implementation plans for general mitigation and adaptation strategies proposed in NDCs. Global expertise could be leveraged to help refine and expand country-specific transport specific mitigation and adaptation strategies.

- Parties could further leverage emerging quantitative tools to help optimize transport sector mitigation ambition in NDCs. The Paris Process on Mobility and Climate (PPMC) is creating a set of knowledge products that can be used to assist national climate planning entities in determining transport sector mitigation potential and ratcheting up transport mitigation targets in successive iterations of NDCs.

[54]Lima-Paris Action Agenda. http://newsroom.unfccc.int/lpaa/ and www.ppmc-cop21.org/transport commitments.

Annex I: Transport Measures in NDCs (as of November 12, 2015)

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Afghanistan	No Information	13.6% below 2030 business as usual (BAU) scenario	No Information	More efficient vehicles, clean fuels, and alternative fuels.
Albania	11.5% below 2030 BAU scenario	No Information	No Information	No Information
Algeria	7% below 2030 BAU scenario	Up to 22% reduction by 2030	No Information	Increased share of liquefied petroleum gas and natural gas in fuel consumption between 2021 and 2030.
Andorra	37% below 2030 BAU scenario	No Information	No Information	No Information
Angola	Up to 35% by 2030 as compared to the Business as Usual (BAU) scenario (base year 2005).	Through a conditional mitigation scenario the country could reduce an additional 15% below BAU emission levels by 2030.	No Information	No Information
Antigua and Barbuda	No Information	No Information	No Information	By 2020, establish efficiency standards for the importation of all vehicles and appliances
Argentina	15% below 2030 BAU scenario	30% below 2030 BAU scenario	No Information	Reactivation of passenger and cargo railways, renewal and improvement of rail infrastructure, and incorporation of technologies and services to contribute to the modernization and efficiency of the rail public transport system.
Armenia	Limit to 633 MtCO2e by 2050	No Information	No Information	Development of electric transport.
Australia	26% to 28% below 2005 levels by 2030	No Information	No Information	National Energy Productivity Target of a 40% improvement between 2015 and 2030, (with an

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				investigation of opportunities to improve the efficiency of light and heavy vehicles.
Azerbaijan	35% below 1990 levels by 2030	No Information	No Information	- Use of environmentally friendly forms of transport; - Enhancement of the use of electric vehicles for public transport; - Electrification of railway lines and the transition to alternative current system in traction; - Improvement and expansion of the scope of intellectual transport management system; - Development of metro transport and increase in number of metro stations; - Elimination of traffic jams through construction of road junctions and underground and surface pedestrian crossings.
Bahamas	30% renewables in the energy mix by 2030	No Information	No Information	The transport sector strategy will discourage the importation of inefficient motor vehicles by linking the tax regime to mileage per gallon and the engine capacity and also by lowering import duties on hybrid and electric cars. The transportation policy will encourage the development and implementation of energy related measures such as: efficient traffic management; carpooling; park and ride; use of clean fuels to minimize pollution; flexi-work hours and tele-commuting; an efficient public/urban mass transit transport system; encouraging non-motorized transport; and promoting vehicle and road maintenance programmes. Supporting legislation and infrastructure for use of biofuels will be put in place. Regulating motor vehicle emissions by setting and enforcing standards, and enforcing proper maintenance of private and public vehicles. Introducing a system that captures data critical to climate change (e.g. number of motor vehicles; national mandatory communications and data

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				submissions to Department of Statistics).
Bahrain	No Information	No Information	No Information	-Continue to find ways and means to mitigate emissions from land transportation -Continue to reduce traffic time for each vehicle by improving the transportation network -In collaboration with the Ministry of Transportation and Communications, bus routes have been created across the country to increase public transport efficiency and attractiveness. -Future projects include the GCC Railway Project, and the Bahrain Light Rail Project, which may contribute to the reduction of personal vehicle use and emissions.
Bangladesh	Reduce GHG emissions in the power, transport, and industry sectors by 12 MtCO2e by 2030 or 5% below BAU emissions for those sectors	Reduce GHG emissions in the power, transport, and industry sectors by 36 MtCO2e by 2030 or 15% below BAU emissions for those sectors	24% deduction from 2030 BAU	- Modal shift from road to rail delivered through a range of measures including underground metro systems and bus rapid transit systems in urban areas. Co-benefits will include reduced congestion, improved air quality and improved traffic safety. - Reduced congestion and improved running of traffic. This will be achieved by a number of measures, including building of expressways to relieve congestion and public transport measures. - Reduced congestion and improved running of traffic. This will be achieved by a number of measures, including building of expressways to relieve congestion and public transport measures.
Barbados	44% below 2030 BAU scenario	No Information	a 29% reduction in non-electric energy consumption, including transport, compared to a BAU scenario in 2030	Investigate alternative vehicles and fuels such as compressed natural gas, liquid petroleum gas, ethanol, natural gas, hybrid and electric vehicles, and encouraging their adoption through tax incentives.
Belarus	28% below 1990 levels by 2030	No Information	No Information	No Information

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Belize	No Information	Reduction of 24 million metric tons of CO2e over the period 2014-2033.	No Information	Achieve at least a 20% reduction in conventional transport fuel use by 2033 and promote energy efficiency in the transport sector through the following policies and investments: - Undertaking a traffic management study that aims at reducing traffic congestion in urban areas and along the Philip Goldson Highway into Belize City; - Improving public transport; - Upgrading maintenance of bus fleet; - Improving scheduling; - Upgrading the industrial fleet; - Promoting the use of bio-fuels. Adaptation measures: Vulnerability assessment of transport infrastructure, particularly in urban areas and areas critical to sustaining the country's productive sectors (tourism, agriculture and ports).
Benin	3.5% below 2030 BAU scenario	17.9% below 2030 BAU scenario	No Information	Promote public transport and clean vehicles. - Introduce duty relief of taxes on public transit vehicles - Improve traffic flow in urban crossings of large cities - Develop a river-lagoon transport system with navigable rivers - Modernize and extend rail infrastructure - Develop a collective urban transport system.
Bhutan	Remain carbon neutral with sequestration, estimated at 6.3 MtCO2e	No Information	No Information	Promotion of low carbon transport system by: - Improving mass transit and demand side management of personal modes of transport; - Exploring alternative modes of transport to road transport such as rail, water and gravity ropeways; - Improving efficiency in freight transport; - Promoting non-motorized transport and non-fossil fuel powered transport such as electric and fuel cell vehicles; - Improving efficiency and emissions from existing

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				vehicles through standards and capacity building; - Promoting use of appropriate intelligent transport systems.
Bolivia	No Information	No Information	No Information	No Information
Bosnia and Herzegovina	2% below 2030 BAU scenario	23% below 2030 BAU scenario	No Information	No Information
Botswana	No Information	15% below 2010 by 2030	No Information	No Information
Brazil	43% below 2005 levels in 2030	No Information	No Information	Further promote efficiency measures, and improve infrastructure for transport and public transport in urban areas.
Brunei Darussalam	63% reduction in total energy consumption by 2035	With no action, the BAU scenario represents a 178% net increase in GHG emissions over 2012 levels. However in implementing the preferred scenario, this will limit the net increase in emissions in 2035 to 67% over 2012 levels.	Land transport sector: to reduce carbon dioxide emissions from morning peak hour vehicle use by 40% by 2035 compared to a business as usual scenario.	-Implementing fuel standards and promoting electric and hybrid vehicles -Expanding public bus fleet from 105 to 275 buses, creating a national school bus system, creating separate bus rapid transit (BRT) infrastructure in four corridors from 2017 onwards, and further increasing the capacity by 2035 -Planning more integrated walking and cycling networks for Bandar Seri Begawan and other areas -Proposing Urban Smart Travel Zone to reallocate road space towards public transport and active travel modes -Including improved parking policies and intelligent transport systems (ITS) to manage traffic demand and improve traffic -Managing increase in road traffic through fuel subsidies

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				-Including "a focus on parking management, land–transport integration, investment in public transport, and physical regulation of access to urban centres and other sensitive locations" as a minimum in transport demand management policies -Introducing policies to promote the use of more efficient "green" vehicles (such as hybrid and electric vehicles) which will go some way towards achieving transport targets
Burkina Faso	6.6% below 2030 BAU scenario	11.6% below 2030 BAU scenario	No Information	Faster improvement in vehicles (a 30% reduction in consumption by 2025 instead of 20% for 2030), and the use of alternative hydrocarbon biofuels. Bioethanol production units substitute 10% of consumption in 2030 and substitute 5% of diesel consumption in 2030.
Burundi	3% below 2030 BAU scenario	20% by 2030 relative to BAU scenario	No Information	Urban transport with low GHG emissions.
Cabo Verde	30% renewable energy penetration rate into the electric grid by 2025.	100% renewable energy penetration rate in 2020-2025.	No Information	Seek to develop a NAMA that increases energy efficiency of the transport sector, including domestic shipping and domestic air travel, and evaluates options for policies and actions available to reduce the impact of GHG emissions originating from this sector. The NAMA will initially be focused on the collection of relevant data for the sector, including, among others, fuel type and consumption per transport mode, technology performance, fuel substitution possibilities, estimation of costs, and an updated GHG emissions profile for light-duty vehicles as well as for freight and passenger transport services. This NAMA will also consider options for expanding

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				hybrid and electric fleets in the country, in particular, the feasibility of making government vehicles electrically powered by 2030.
Cambodia	No Information	27% below 2030 BAU scenario	3% reduction from 2030 BAU	Promote mass public transport. -Improve operation and maintenance of vehicles through motor vehicle inspection and eco-driving, and the increased use of hybrid cars, electric vehicles and bicycles.
Cameroon	Reduce GHG emissions by 32% compared to 2035 BAU	No Information	No Information	Limit mobility constraints and develop low-carbon transport offerings; - Promote an integrated approach to the sector and the development of low-carbon transport through a national transport infrastructure scheme; - Integrate climate in territorial planning documents to limit distances and propose efficient transport policies; - Support state and local authorities in the development of public transit and inter- and intra-city low carbon development plans (e.g. tramways in Yaounde and Douala); - Encourage the purchase of low-emission vehicles and scrapping of high-emission vehicles through standards, incentives or obligations
Canada	30% below 2005 levels by 2030	No Information	No Information	Introduce more stringent greenhouse gas emission standards for passenger automobiles and light trucks, as well as regulations for heavy-duty vehicles.
Central African Republic	Reduce emissions by 5% compared to the 2030 BAU reference level	No Information	No Information	Black carbon reduction plan
Chad	18.2% below 2030	71% level 2030 BAU	No Information	No Information

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
	BAU levels			
Chile	CO2 emissions per unit of GDP reduced by 30% by 2030 over the 2007 level achieved	Reduction of CO2 emissions per unit of GDP between 35% to 45% over the level reached in 2007	No Information	Black carbon reduction plan
China	Peak CO2 emissions around 2030 and make best efforts to peak early and lower CO2 emissions per unit of GDP by 60% to 65% from 2005 levels	No Information	No Information	- Integrate low-carbon development in the entire process of urban planning;- Improve the quality of gasoline and new types of alternative fuels; - Promote the share of public transport in motorized travel in large- and medium-sized cities (targeting 30% mode share by 2020); - Promote the development of dedicated transport system for pedestrians and bicycles in cities; - Advocate green travel and accelerate development of smart transport and green freight transport.
Colombia	20% below BAU by 2030	30% below BAU by 2030	No Information	No Information
Comoros	No Information	84% reduction from 2030 BAU scenario	No Information	No Information
Congo	48% below BAU scenario by 2025	No Information	70% of the baseline scenario in 2025	Develop public transport services (particularly in Brazzaville and Pointe-Noire) to fight against congestion or introduce changes in legislation (e.g. prohibit import of vehicles older than 5 years). In a conditional low carbon scenario, it is proposed to control the rise in transport-related energy consumption to 70% of baseline scenario in 2025 with an option for renewable fuel to account for 21-43% of consumption.
Cook Islands	No Information	No Information	No Information	-Establishing noteworthy duty rates on the importation of motor vehicles -Planning to embrace proven low carbon transport technologies and exploring the most effective

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				incentives for promotion of transition towards clean energy transportation
Costa Rica	44% below BAU by 2030	No Information	No Information	- Develop an integrated public transport system where routes are improved, train service strengthened, and availability of non-motorized transport enhanced; - Improve the freight sector through multi-modal options.
Cuba	No information	No information	No Information	No Information
D.R. Congo	17% below BAU by 2030	No Information	10Mt CO2eq reduction by urban transport improvements	Urban transport improvements
Djibouti	40% below BAU by 2030	60% below BAU by 2030	No Information	Construct a 752-km railway line between Djibouti City and Addis Ababa; - Set up a maintenance service for two-wheel vehicles and raise awareness about their use; - Eliminate the import of 10,000 old cars that produce excessive pollution.
Dominica	44.7% below 2014 levels by 2030	No Information	16.9% below 2014 levels by 2030	- Introduce environmental tax on imported vehicles, ranging from 1% of total value (including freight charges) on vehicles less than 5 years, to EC$3,000 on vehicles older than 5 years; - Introduce a policy requiring that all government vehicles, at their time of replacement, will be replaced by hybrid vehicles; - Introduce market-based mechanisms to motivate the private sector to buy hybrid vehicles when replacing current vehicles.
Dominican Republic	No Information	25% below 2010 levels by 2030	No Information	No Information

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Ecuador	Energy sector; 25% below 2025 BAU scenario	Energy sector; 45.8% below 2025 BAU	No Information	Develop electric rail (Trans-Amazonian)
Egypt	Achieve low carbon development	No Information	No Information	- Increase Share of Railways Pass. - Increase Share of Buses Pass. - Increase Share of Microbuses Pass. - Increase Share of River Pass. - Improve road transport efficiency - Switch from road to river transport - Switch from road to rail transport
El Salvador	Targets will be presented before COP22	No Information	No Information	In the period 2018 - 2025 El Salvador will launch the second stage or phase of the Integrated Transport System in the Metropolitan Area of San Salvador (SITRAMSS) covering its north - south axis, developing a massive component of social awareness to ensure citizen involvement so that it reaches its full emission reduction potential. -El Salvador will present a proposal before COP 23 to improve and maintain sustained quality of the private vehicle fleet, public transport and freight, with defined goals for 2025. -The 2015- 2019 Five Year Plan promotes the use of renewable and efficient sources of energy in the transport sector
Equatorial Guinea	20% below 2030 BAU	No Information	No Information	Acquire high technology equipped aircraft; - Improve air traffic management, land and sea; - Continue modernization of airport infrastructure, road traffic and port infrastructure; - Promote urban and intercity public transport to reduce emissions due to the proliferation of individual transport.
Eritrea	39.2% below BAU scenario	80.6% below BAU scenario	No Information	No Information

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Ethiopia	No Information	255 MtCO2e (or 64% compared to BAU emissions) in 2030	10 MT by 2030	Clean rail transport, compact development.
European Union	40% reduction in 2030 compared to 1990	No Information	No Information	Rail transport to cover about 400km for mass transport of freight, with estimated cost of about USD 1billion; use of large buses for passenger transport over long distances.
Fiji	CO2 reductions in the energy sector by around 30% from BAU by 2030.	No Information	No Information	Plans for fuel switching (either biofuels or electricity).
Gabon	At least 50% reduction from BAU by 2025	No Information	20% reduction below BAU (1.6 MT reduction)	Infrastructure investments (with many planned routes); public transport services (e.g. congestion reduction in Libreville), and restrictions on importation of vehicles more than 3 years old.
Gambia	45.4% below 2030 BAU scenario	No Information	.193 MtCo2eq reduction by 2030	Reduce fuel consumption through efficiency standards. Adaptation Proposal: Improved resilience of road networks under changing climate.
Georgia	15% below the Business as usual scenario (BAU) for the year 2030	25% below the Business as usual scenario (BAU) for the year 2030	No Information	Vertically Integrated NAMA (V-NAMA) for the Urban Transport Sector.
Ghana	15% below 2030 BAU scenario	45% below 2030 BAU	No Information	Expansion of inter- and intra-city mass transport modes (rail and bus) in four cities.
Grenada	30% below 2010 levels by 2025	No Information	Grenada plans to reduce its emissions in the transport sector by 20% by 2025	Undertake several policies/actions, including introduction of biofuel blends (specifically liquefied natural gas and diesel blend), implementation of gasoline and diesel taxes, and implementation of fuel efficiency standards for vehicles through incentives.
Guatemala	11.2% below 2005 levels by 2030	No Information	No Information	Improvements in urban mobility based on efficient mass transport that promotes productivity in all sectors of the country and contributes to a significant

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				reduction in emissions.
Guinea	No Information	Mitigate 76 cumulative Mt CO2eq over next 15 years	No Information	Improve the quality of the transport fleet, the promotion of public transport, and the implementation of efficiency standards in building design.
Guinea Bissau	No Information	80% renewable energy in the national energy mix by 2030	No Information	No Information
Guyana	Mitigate 52 MtCO2 by 2025	No Information	No Information	No Information
Haiti	5% below 2030 BAU	26% below 2030 BAU	No Information	Develop and implement NAMAs in the transport sector.
Honduras	No Information	15% below 2030 BAU	No Information	No Information
Iceland	40% reduction of greenhouse gas emissions by 2030 compared to 1990 levels	No Information	No Information	No Information
India	Reduce emissions intensity of GDP by 33 to 35 percent by 2030 from 2005 levels	No Information	No Information	Increase the share of railways in total land transport from 36% to 45%. - Construct two dedicated freight corridors: 1520 km Mumbai-Delhi (Western Dedicated Freight Corridor) and 1856 km Ludhiana-Dankuni (Eastern Dedicated Freight Corridor); - Promote growth of coastal shipping and inland water transport; - Construct 550 km plus 600 km of metro lines; - Approve construction of 39 urban transport and mass rapid transport projects; - Construct solar powered toll plazas; - Develop Green Highways Policy; - Accelerate manufacturing and adoption of hybrid and electric vehicles; - Set passenger vehicle fuel-efficiency standards;

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				- Develop national policy on biofuels.
Indonesia	26% below BAU scenario by 2020	Additional 15% reduction	No Information	No Information
Iran	4% reduction by 2030 compared to the BAU scenario	Up to 8% reduction by 2030 compared to the BAU scenario (i.e. 12% in total)	No Information	No Information
Israel	26% below 2005 levels by 2030	No Information	No Information	20% shift from private to public transport; - Further 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 the Jerusalem light rail.
Ivory Coast	28% reduction from 2030 BAU scenario	No Information	5.73% reduction from 2030 BAU	Integrate climate in territorial planning documents in order to limit travel distances - Propose efficient transport policies; - Advance urban transport plan development (e.g. urban train in the district of Abidjan); - Facilitate purchase of low-emission vehicles and scrapping of high-emission vehicles through standards, incentives or obligations.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Jamaica	7.8% below BAU by 2030 2025: 12,370 kT CO2 eq 2030: 13,368 kT CO2 eq	Contingent on international support: 10% below BAU by 2030 2025:12,099 kT CO2 eq 2030:13,043 kT CO2 eq	No Information	Seeking support for the expansion of energy efficiency initiatives in the electricity and transportation sectors, in line with sector action plans and other policies currently under development.
Japan	26% by fiscal year 2030 compared to 2013	No Information	27% below 2013 or 163 MT by 2030	Improvement of fuel efficiency, promotion of next-generation automobiles, and other measures in transport sector (e.g. traffic flow improvement); - Promotion of public transport, modal shift to railway, and comprehensive measures for eco -friendly ship transport; - Reduction of land transport distance by selecting nearest port, and comprehensive low-carbonization at ports; - Optimization of truck transport, energy consumption efficiency improvement of railways, energy consumption efficiency improvement of aviation, and accelerated promotion of energy saving ships; Making vehicle transport business more eco-friendly by eco-driving and promotion of collective shipments; - Promotion of Intelligent Transport Systems ITS (e.g. centralized control of traffic signals); -Development of traffic safety facilities (e.g. improvement of traffic signals, and promotion of the use of LED traffic lights); - Promotion of automatic driving, eco -driving and car sharing; - Utilization of 'special zones system' for structural reform of global warming measures; - Promotion of inter-ministry collaborative measures following roadmap of global warming measures.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Jordan	1.5% below 2030 BAU emissions	14% below 2030 BAU emissions	No Information	Launch the Ministry of Transport's long term national transport strategy in 2014 with sustainable transport as a key strategy; - Increase the total number of commuters using public transport as a percentage of the total number to 25% by 2025; - Reduce all emissions from the transport sector (i.e. CO2, CO, PM,); - Reduce percentage of fuel consumption achieved through the implementation of the transport strategy; - Reduce vehicle kilometers at national level sand in densely populated areas by type of vehicle (i.e. car, HGV, LGV); - Implement a national BRT system; - Implement the railway system, which would be a cornerstone of the planned multimodal network and would play a major role in the transport of goods within the country and the surrounding region; - Adopt and implement policies related to fleet characteristics to enhance efficiency and reduce emissions;
Kazakhstan	15% reduction from 1990 levels by 2030	25% reduction from 1990 levels by 2030	No Information	Development of sustainable transport.
Kenya	No Information	30% by 2030 relative to the BAU scenario of 143 MtCO2eq	No Information	Low carbon and efficient transport systems.
Kiribati	12.8% by 2030 compared to BAU projection	Reduce emissions more than 60% (61.8%) by 2030	No Information	Use of coconut oil as biodiesel for transport.
Kuwait	No Information	No Information	No Information	Planning railway project to links ports across the State of Kuwait to achieve a more integrated and sustainable system for transporting goods and passengers within Kuwait and abroad
Kyrgyzstan	13.75% below BAU in	30.89% below BAU in	No Information	No Information

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
	2030	2030.		
Lao PDR	No Information	Cumulative energy sector reduction to 2025 of 1468 MtCO2eq	Reductions in Road network development is 33 ktCO2/pa, and 158 ktCO2/pa for public transport development	- Increase the share of biofuels to meet 10% of the demand for transport fuels by 2025. - In one NAMA feasibility study, road network development is identified as a first objective, which will reduce the number of kilometers traveled. The second objective is to increase the use of public transport compared to business as usual (BAU). - In addition to a reduction in GHG emissions the activity will lead to a reduction in NOx and SOx emissions, which will have significant co-benefits such as improvement in air quality which in turn will have positive impacts on human health.
Lebanon	15% below 2030 BAU scenario	Up to 30% reduction compared to the BAU scenario in 2030	No Information	Restructuring of transport is planned through a number of large infrastructure initiatives aiming to revive the role of public transport and achieving a significant share of fuel-efficient vehicles.
Lesotho	10% below 2030 BAU scenario	Up to 35% by 2030	No Information	Promote transport mitigation options including vehicle efficiency, modal shift from private to public transport, and investments in fuel-efficient vehicles.
Liberia	Reduce GHGs by at least 10% by 2030 from BAU scenario	No Information	No Information	Mainstream climate change into existing transport management plans to strengthen emission controls; - Strengthen institutional capacity for developing strategies for integrated transport services; -Develop technical and safety standards and the enforcement of policies including emission control; - Improve the quality and reliability of transport infrastructure and services; - Develop emission reduction and tracking systems of pollutants from vehicles; - Blend up to 5% of palm oil biodiesel with both gasoline and diesel by 2030.
Liechtenstein	40% compared to	No Information	No Information	Transport measure to be revised in 2016-2017

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
	1990 by 2030			
Macedonia	Reduce CO2 emissions from fossil fuels combustion by 30% by 2030 compared to BAU scenario	No Information	No Information	Climate change and clean energy plan, transport sector strategy: - Extension of railway to Bulgaria; - Electrification of transport, increased use of railway; - Renewal of the vehicle fleet; - Increased use of bicycles and walking; - Introduction of a parking policy. Adaptation measures: Effective application of existing or newly established sectorial policies, including flood-resistant terrestrial transport infrastructure standards.
Madagascar	14% below 2030 BAU scenario, and an increase of GHG absorption of at least 32% compared to BAU scenario	No Information	No Information	- Unconditionally produce 2 million liters of biodiesel/year, conditionally increase this to 20 million liters/year; - Unconditionally produce 18 million liters of ethanol/year, conditionally increase this to 40 million liters/year; - Unconditionally increase passengers using mass transport by 1%, conditionally increase this to 30%.
Malawi	No Information	0.7 to 0.8t CO2e per capita in 2030	No Information	- No Information on mitigation measures. - Adaptation measures: Coastal protection measures to protect the shoreline of Hulhule, the island that contains Ibrahim Nasir International Airport, as well as for other air and seaports.
Malaysia	35% by 2030	45% by 2030	No Information	No Information
Maldives	10% below BAU by 2030	Up to 24% below BAU by 2030	No Information	No Information
Mali	No Information	31.6% reduction from 2030 BAU scenario	No Information	Replace more than one-third of fossil fuels (with renewables) for electricity and transport by 2030.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Marshall Islands	32% below 2010 levels by 2025	No Information	Reducing transportation emissions (including domestic shipping) by 16% in 2025 and 27% in 2030;	Limit import of cars aged 8 years or more; create tax exemptions for bus factories.
Mauritania	22.3% below 2030 BAU levels	No Information	No Information	Acquisition of hybrid and electric means of mass transport. Black carbon reduction plan
Mauritius	30% below 2030 BAU scenario	No Information	No Information	No Information
Mexico	22% reduction of GHG for 2030 compared with BAU scenario	36% reduction of GHG for 2030 compared with BAU scenario	No Information	Continue mobility policy of development of clean public transport, development of soft modes (pedestrian walkways, bicycle trips) and development of electric mobility.
Micronesia, Federated States of	Commits to unconditionally reduce by 2025 a 28% its GHGs emissions below emissions in year 2000	Could achieve by 2025 an additional reduction up to 35% below emissions in the 2000 base year.	No Information	No Information
Monaco	50% by 2030 compared to 1990 levels	No Information	Transport and waste sectors – 15 per cent GHG emissions reduction compared to BAU scenario has to be achieved by 2020;	Improve national paved road network (upgrade/pave 8000 km by 2016, 11000 km by 2021); - Improve Ulaanbaatar city road network to decrease all traffic by 30-40% by 2023; - Increase the share of private hybrid road vehicles from approximately 6.5% in 2014 to approximately 13% by 2030; - Shift from liquid fuel to LPG for vehicles in Ulaanbaatar and provincial centers by improving taxation and environmental fee systems; - Improve enforcement mechanism of standards for road vehicles and non-road based transport.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Mongolia	14% below 2030 BAU levels	No Information	No Information	No Information
Montenegro	30 % reduction by 2030 compared to 1990	No Information	Reduce transport emissions by 1.7 Mt CO2-eq. in 2030	Reduce fossil fuel subsidies and promote use of natural gas.
Morocco	13% reduction from 2030 BAU scenario	32% below BAU emission levels by 2030	No Information	Project of urban mobility in the municipality of Maputo
Mozambique	No Information	Total reduction of about 76,5 MtCO2eq in the period from 2020 to 2030	Reduce energy consumption in transport by 23% by 2030	National Transport Master Plan and National Implementation Plan on environmental improvement in the transport sector are being developed.
Myanmar	No Information	Remain a negative net sink country	No Information	Cities (e.g. Yangon) are studying options for sustainable transport development for example, and CSOs are engaged in proposing solutions to challenges for implementation.
Namibia	9% reduction from 2030 BAU	89% reduction from 2030 BAU	No Information	Commission of a mass transport system in City of Windhoek to reduce number of taxis and private cars by about 40%; - Implement a car pooling system to reduce fossil fuel consumption; - Improve freight transport to reduce the number of light load vehicles by about 20%.
Nauru	No Information	Replace diesel plant with a large scale solar PV array	No Information	No Information
Nepal	No Information	No Information	No Information	-Increase the share of electric vehicles up to 20% by 2020, promote the transformation of other regular vehicles to electric vehicles, and provide a subsidy scheme for the promotion of electric and non-motorized vehicles -Avoid unnecessary travel, reduce trip distances, promote shift towards more sustainable transport modes such as non-motorized transport, and further

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				promote public transport systems -Promote public transport system and bicycles, introduce fuel tax in Kathmandu Valley for air quality improvement and further promotion of non-motorized transport to contribute to the reduction of pollution in urban areas -Develop electrical (hydro-powered) rail network by 2040 to support mass transportation of goods and public commuting
New Zealand	30% below 2005 levels by 2030	No Information	2.3% from BAU at 2030	Increase renewable electricity usage in transport and increase uptake of low emission technologies.
Niger	3.5% below 2030 BAU scenario	34.6% below 2030 BAU	No Information	No Information
Nigeria	20%	45%	Blending 10% by volume of Fuel-Ethanol with Gasoline (E10) and 20% by volume of Biodiesel with Petroleum Diesel (B20) for Transportation Fuels.	-Shift transport modes from car to bus, freight to rail, air to high-speed rail -Include increased protective margins in construction and placement of transportation and communications infrastructure (i.e. higher standards and specifications) -Undertake risk assessment and risk reduction measures to increase the resilience of the transportation and communication sectors -Strengthen existing transportation and communications infrastructure, in part through early efforts to identify and implement all possible 'no regret' actions. -Upgrade roads, urban transit, and toll roads; implement road pricing -Increase use of CNG -Reform petrol/diesel subsidies

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Niue	No Information	No Information	No Information	-Customs regulations were amended to encourage the import of fuel-efficient vehicles into Niue, and targets have been set under the Niue Strategic Energy Road Map (NiSERM) to deploy more fuel efficient vehicles -The Government welcomes international assistance in the development of opportunities for deep emissions cuts in the transport sector -2015-2020: Implement energy efficiency through supply side loss reduction, develop energy auditing, equipment standards and labeling, regulatory reform and fuel substitution for transport and cooking -2020-2030: Transport sector transition away from fossil fuels
Norway	40% reduction in 2030 compared to 1990 levels.	No Information	No Information	Reduce emissions in the transport sector and introduce environmentally friendly shipping.
Oman	No Information	2% below 2030 BAU	No Information	Low carbon transport initiatives
Pakistan	"Pakistan will only be able to make specific commitments once reliable data on our peak emission levels is available."	No Information	No Information	No Information
Palau	‒ 22% energy sector emissions reductions below 2005 levels by 2025 ‒ 45% Renewable Energy target by 2025 ‒ 35% Energy Efficiency target by 2025	No Information	No Information	-Currently there is a pending national legislation that would mandate the use and commercial sale of four-stroke outboard motor engines to reduce emissions -Palau is investigating a project to convert waste cooking oil to biofuel for diesel vehicles, beginning with public school buses and a potential public bus route
Panama	No Information	No Information	No Information	-To continue to expand current subway system in

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				Panama City
Papua New Guinea	No Information	Carbon-free electricity generation sector by 2030	No Information	Improve public transport by introducing energy efficient buses in the main urban centers; - Introduce future infrastructure for more sophisticated modes of public transport, such as trains and trams.
Paraguay	10% by 2030 relative to BAU scenario	A further 10% by 2030 relative to BAU scenario	No Information	Promote efficient multi-modal transport.
Peru	20% below 2030 BAU	30% by 2030 relative to BAU scenario	No Information	No Information
Philippines	No Information	Reduction of about 70%by 2030 relative to BAU	No Information	No Information
Qatar	No Information	No Information	No Information	-Introduce public transportation to reduce the demand on private vehicles and direct the nation towards the use of the public transportation and expressway programs that would enhance the traffic flow and divert it outside the cities -Improve emission standards for new motor vehicles, in accordance with regional and global emission standards
Republic of Korea	37% below 2030 BAU	No Information	No Information	Expand infrastructure for environmentally friendly public transport, while introducing low-carbon standards for fuel efficiency and emissions produced from automobiles; - Strengthen the average emission standard from 140g/km in 2015 to 97g/km in 2020; - Create incentives, including tax reductions, for electric and hybrid vehicles.
Republic of Moldova	64-67% reduction by 2030 compared to 1990 levels	Up to 78% reduction below 1990 levels	No Information	Adopt new technical and normative standards in transport and building sectors (adoption of Eurocodes) Adaptation measures: Analyze adaptation options, including altering assumptions about infrastructure design and

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				operations, and incorporating uncertainty into long-range decision making.
Republic of Serbia	9.8% below 1990 levels by 2030	No Information	No Information	No Information
Russia	No Information	Limit anthropogenic greenhouse gases to 70-75% of 1990 levels by 2030	No Information	No Information
Rwanda	No Information	Estimated impact of policies is underway and will be informed by the Third National Communication Report to be completed by 2017.	No Information	Develop efficient resilient transport systems; - Improve vehicle efficiency through vehicle and fuel quality regulations and taxation policies; - Promote new technologies to reduce transport emissions; - Establish an integrated multi-modal urban transport system.
Saint Kitts and Nevis	No Information	22% reduction of absolute GHG from BAU in 2025 35% reduction of absolute GHG from BAU in 2030	No Information	Proposes to reduce GHG emissions by focusing on electricity generation and the transport sector
Saint Lucia	No Information	16% reduction relative to BAU projection by 2025, 23% reduction by 2030	No Information	-Promote efficient vehicles -Improve and expand public transit -Introduce a new levy to control importation of used vehicles, and reduce excise tax and duty for importers of fuel efficient vehicles and alternative energy vehicles -Escalate taxes on higher engine capacity vehicles

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Saint Vincent and Grenadines	22% compared to BAU scenario by 2025.	No Information	10% reduction over the next 10 years	-Extrapolate historical road vehicle numbers for transport planning -Produce a Nationally Appropriate Mitigation Action (NAMA) for the country's transport sector. New policies to reduce the import duty paid on low emission vehicles are in the process of being introduced to encourage their use. It is estimated that this will result in avoided emissions of approximately 10% over the next 10 years. Significant potential for greater reductions (e.g. improved public transport) is achievable if international finance can be made available, however this needs further analysis to quantify the reduction potential and support required and consequently these measures have not been included in the economy-wide contribution at this stage. Currently, transport is the fastest growing source of emissions and reductions from this sector will be largely dependent on international financial support and technology transfer.
Samoa	100% renewable electricity generation target in 2017	No Information	No Information	Implement regulations to restrict vehicle emissions.
San Marino	20% below 2005 levels by 2030	No Information	No Information	No Information
Sao Tome and Principe	24% emission reduction by 2030 relative to 2005	No Information	No Information	No Information
Saudi Arabia	130 million tons of CO2eq avoided by 2030	No Information	No Information	- Introduction of efficiency standards in the transportation sector. - Encourage actions that promote the development and use of mass transport systems in urban areas. - Take the necessary actions to expedite the development of the metro system in Riyadh.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
				- Support and expedite the planning and development of metro systems in Jeddah and Dammam.
Senegal	5% below 2030 BAU scenario	21% below 2030 BAU scenario	ENERGY SECTOR: 6% below 2030 BAU (unconditional), 31% below BAU 2030 scenario (conditional)	Implement Bus Rapid Transit (BRT) pilot in Dakar/Guédiawaye
Seychelles	29% below 2030 BAU scenario	No Information	No Information	Maintain a high penetration of public transport, target fuel efficiency and biofuels in import regulation, and move towards electric vehicles and two-wheelers, with potential to reduce oil imports for transport purposes by 15% to 30% (or more) by 2030 compared to BAU.
Sierra Leone	No Information	Maintain emission levels close to the world average of 7.58 MtCO2e by 2035	No Information	Develop and enforce regulations on regular maintenance of vehicles and vehicle emission testing: - Formulate transport plans; - Improve and promote use of public transport (e.g. road, rail and water) for passengers and cargo to reduce traffic congestion and GHG emissions; - Diversify economic growth through strengthened transport sub-sector (particularly infrastructure) to reduce regional and global emissions and build a stable economy.
Singapore	36% below 2005 levels by 2030, and stabilize emissions with the aim of peaking around 2030	No Information	No Information	No Information
Solomon Islands	30% below 2015 level by 2030	45% reduction in GHG emissions by 2030, compared to BAU	No Information	No Information
Somalia	No Information	No Information	No Information	No Information

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
South Africa	Limit emissions to maximum 614 MTCO2eq by 2030	No Information	No Information	Integrate electric vehicles and target 20% hybrid-electric vehicles by 2030
South Sudan	No Information	No Information	No Information	-Establish emissions standards for vehicles -Establish exhaust testing centers, subject cars that fail the tests by emitting fumes above allowable emissions levels to mandatory repairs or scrappage -Consider measures to restrict importation of vehicles that do not adhere to allowable emissions levels
Sri Lanka	7% below 2030 BAU scenario	23% below 2030 BAU scenario	25-40% of public transport to be green fuelled by 2030	Energy efficient and environmentally friendly transport systems. Mode shift, Electric rail, Shift unproductive, improve efficiency.
Sudan	Pursue implementing low carbon development interventions in three sectors of energy, forestry and waste	No Information	No Information	No Information
Suriname	Increase the percentage of forests	Above 25% renewable energy by 2025	No Information	No Information
Swaziland	Develop a mitigation goal and associated action plan by 2020	No Information	No Information	Target 10% ethanol blend in petrol by 2030
Switzerland	50% by 2030 compared to 1990 levels	No Information	No Information	No Information
Tajikistan	Not to exceed 80-90% of 1990 levels by 2030	65-75% of 1990 level by 2030	No Information	Modernize industry and transport
Tanzania	10% by 2030 relative to the BAU scenario	20% by 2030 relative to the BAU scenario	No Information	Promote low emission transport systems through deployment of mass rapid transport systems and investments in air, rail, marine and road infrastructures.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Thailand	20% below 2030 BAU scenario	Up to 25% below 2030 BAU scenario	At COP20 in Lima, Thailand pledged our pre-2020 contribution of 7-20% GHG emission reduction by 2020 below business-as-usual (BAU) in the energy and transport sectors.	Environmentally Sustainable Transport System Plan proposes ambitious actions to promote road-to-rail modal shift for both freight and passenger transport, including extensions of mass rapid transit lines, construction of double-track railways and improvement of bus transit in the Bangkok Metro area. A vehicle tax scheme based on CO2 emissions will become effective beginning 2016.
Togo	11.4% below 2030 BAU	31.14% below 2030 BAU	20% reduction of fossil fuel use	Planned actions are designed to reduce fossil fuel consumption 20 through the improvement of the road network, the promotion of public transport, limiting age of imported vehicles to 5-7 years, and promoting active transport (bicycles, walking, bike path development).
Tonga	No Information	No Information	No Information	-Diesel Engines Fuel Efficiency Services Training -Solar Vehicle Public Awareness Tour Project -Developing transport sector measures to include in the Tonga Energy Road Map (TERM) strategies; undertaking training and public awareness actions on vehicle maintenance, public transport and bicycle usage -Interested in developing biofuels for both transport and electricity generation -Participating in regional transport sector mitigation efforts being developed by the Secretariat of the Pacific Community -Welcoming international assistance in the development of mitigation opportunities to reduce Tonga's oil dependence and GHG emissions in this sector

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Trinidad and Tobago	No Information	15% below 2030 BAU emission levels.	30% reduction in GHG emissions by December 31, 2030 in the public transportation sector compared to a business as usual (BAU) scenario (reference year 2013)	No Information
Tunisia	13% reduction in carbon intensity relative to 2010	41% compared to 2010	No Information	Around 20 energy efficiency actions have been included, covering the entire industrial, building, transport and agricultural sectors.
Turkey	21% reduction in GHG emissions from BAU by 2030	No Information	No Information	Ensure 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; - Implement sustainable transport approaches in urban areas; - Promote alternative fuels and clean vehicles; - Reduce fuel consumption and emissions of road transport with National Intelligent Transport Systems Strategy Document (2014-2023) and Action Plan (2014-2016); - Complete high speed railway projects; - Expand urban railway systems; - Achieve fuel savings through tunnel projects; - Scrapping old vehicles; - Implement green port and green airport projects to ensure energy efficiency; - Implement special consumption tax exemptions for maritime transport.
Turkmenistan	No Information	Stabilize or begin to reduce GHG emissions by 2030	No Information	No Information

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Tuvalu	A reduction in total emissions of GHGs from the entire energy sector to 60% below 2010 levels by 2025.	No Information	No Information	Planning to address growing emissions in the transport sector, as evidenced from the increased numbers of vehicles on land and vessels for sea transport, through technological innovations.
Uganda	No Information	22% reduction of national greenhouse gas emissions in 2030 compared to BAU	Reductions of between 24% and 34% of BAU projections for road transport)	Development and implementation of a long-term transport policy accounting for climate change mitigation concerns. Fuel Efficiency Initiative National Appropriate Mitigation Action: Policies and regulations to promote cleaner fuels, and more fuel-efficient vehicle technology. (Approximate investment cost USD 5.8m over 6 years).
Ukraine	Not to exceed 60% of 1990 emissions	No Information	No Information	No Information
United Arab Emirates	No Information	No Information	No Information	- The introduction of a new fuel pricing policy, which will put the UAE in line with global prices. This reform aims to support the national economy, lower fuel consumption, and protect the environment; - A federal freight rail network crossing the country and eventually integrated into the GCC network; - The Emirate of Abu Dhabi has also set targets to shift 25% of government vehicle fleets to compressed natural gas; and - The Emirate of Dubai has invested in a multi-billion dollar light-rail and metro system, which will continue to add new lines
United States	Reduce emissions by 26-28% below 2005 levels in 2025	No Information	No Information	- Introduce fuel economy standards for light-duty vehicles for model years 2012-2025 and for heavy-duty vehicles for model years 2014-2018.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Uruguay	Reduce CO2 emissions by 25%, CH4 by 44% and N2O by 40% per unit GDP by 2030	Reduce CO2 emissions by 40%, CH4 by 68% and N2O by 41% per unit GDP by 2030	No Information	Implement BRT corridors for metropolitan public transport; - Introduce electric and hybrid private and public vehicles; - Increase the percentage of biofuels in gasoline and diesel oil blends; - Introduce public and private vehicles that support a higher percentage of biofuel blends; - Enhance vehicle fleet through higher power efficiency standards and lower emissions; - Improve cargo transport, through the incorporation of new multimodal systems, and increased use of railroad and inland waterway transport.
Vanuatu	No Information	30% reduction in energy sector below 2030 BAU scenario	No Information	No Information
Venezuela	No Information	20% GHG emission reduction target by 2030 below BAU.	No Information	- To release framework to improve road safety - To renew public transport fleet to make it low-carbon and sustainable with public-sector financing. - To open public driving schools - To continue to open new passenger terminals - To (re)pave urban public transport routes - To continue to build new efficient public transport systems across the country (currently building new subway lines in Caracas and in Valencia)
Vietnam	8% below BAU scenario	25% below 2030 BAU scenario	No Information	Develop public passenger transport, especially rapid transit in large urban centers; - Restructure freight to reduce share of road transport and increase share of transport via rail and inland waterways; -Encourage buses and taxis to use compressed natural gas and liquefied petroleum gas; -Implement management solutions for fuel quality, emissions standards, and vehicle maintenance.

Country	Economy-wide Target (Unconditional)	Economy-wide Target (Conditional)	Transport Sector Target	Summary of Proposed Transport Measures
Yemen	14 percent GHG emission reduction target by 2030 below BAU (1 percent unconditional target)	14 percent GHG emission reduction target by 2030 below BAU (13 percent conditional target)	No Information	Improving energy efficiency in transportation sector.
Zambia	25% below 2030 BAU scenario	47% below 2030 BAU scenario	No Information	Promote fuel switching (e.g. diesel to biodiesel).
Zimbabwe	No Information	47% below 2030 BAU scenario	0.341 MtC02eq less in 2030	Refurbish and electrify the rail system.