SUSTAINABLE mobility FOR ALL™

CATALOGUE OF POLICY MEASURES 2.0

Toward Sustainable Mobility

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Toward Sustainable Mobility

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ACKNOWLEDGMENTS

Sustainable Mobility for All (SuM4All) is a global coalition comprising 56 international organizations, and private companies that shares a common ambition toward sustainable mobility and has agreed to work together toward its achievement in countries with a special focus on the Global South. Established in 2017 and housed at the World Bank, SuM4All, brings together bilateral partners, multilateral development banks, U.N. organizations, inter-governmental organizations, private companies, and civil society with a shared ambition to transform the future of mobility.

The Catalogue of Policy Measures 2.0 Toward Sustainable Mobility report was developed in 2020-2022 by the team consisting of Nancy Vandycke, Gurpreet Singh Sehmi, Mary Ngaratoki Fabian, Josphine Njoki Irungu, Javier Morales Sarriera, and José Viegas. Emiye Gebre Egziabher Deneke and Duina Reyes contributed to the design of the Report.

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CONTEXT

This is the second edition of the Catalogue of Policy Measures toward Sustainable Mobility. The first edition was published in 2019, as part of the "The Global Roadmap of Action toward Sustainable Mobility" (GRA)[1] produced by the Sustainable Mobility for All partnership.[2]

The Catalogue of Policy Measures (CPM) compiles all the policy instruments available to country decision-makers to achieve sustainable mobility. By "sustainable mobility," we mean the simultaneous achievement of four policy goals of universal access, efficiency, safety, and green mobility. Since 2017, this concept is an emerging standard that the international transport community has increasingly accepted to refer to the ambition in transport and the movement of people and goods. Note that the concept covers all passenger and freight market segments, considering each segment via modes of transportation.

The original Catalogue included 182 policy instruments. In 2020, the COVID-19 crisis hit the global economy, including all transportation systems. The COVID-19 pandemic created major disruptions within the socio-economic system, including the transport sector. A second look at the original catalogue revealed that sanitary risks had been underestimated in the GRA, and the Catalogue should be expanded with additional instruments.

The Catalogue of Policy Measures 2.0 reflects updates made online in the Policy Module of the Decision-Making Tool and expands on the original CPM published in 2019 (and included in the GRA) on three fronts:

- 12 additional COVID-19 related measures
- Policy guidance and case studies derived from additional work done by the partnership on selected topics data sharing, e-mobility, and transport and energy nexus.
- Addition of the resilience criteria (to impact on each of the four policy goals and country relevance criteria) to appraise each policy instrument in the CPM

The catalogue was updated in 2020 with 12 new COVID-19 pandemic-related policies. This addition of 12 policy measures has an explicit focus on resilience in the face of the COVID-19 pandemic — bringing the total number of measures to 194. For example, added measures include "enhanced sanitary protocols in passenger transport", "use of transport operator data to inform policy response", and the "support of cross-border trade of essential goods during crisis response". Although the initial catalogue included more than 50 policy measures indirectly related to the COVID-19 crisis, the pandemic revealed that resilience was not a central aspect in the initial set of measures, and a third criteria was added to reflect the resilience aspect of each policy instrument.

"Further work was conducted in 2020-21 to refine selected policy instruments of the CPM and enrich the online CPM found in the Policy Decision-making Tool for Sustainable Mobility. This work was released under the GRA in Action Series (see Appendix C). This work focused on policy measure 124 "Support Data Sharing Programs and Platforms", policy measure 116 "Integrate New Mobility Solutions— including autonomous vehicles, e-mobility, and on-demand transportation— to Existing Transport", and policy measures 171, 87, and 5 "Promote Public Discussion on New Mobility Solutions"; "Expand Public Transport Infrastructure"; and "Plan for Integrated Multimodal Transport Networks". In 2022, the CPM will continue to be strengthened in the areas of safety, public transport, freight and logistics, and gender.

1 The "Global Roadmap of Action Toward Sustainable Mobility" (GRA) tackles heads-on the question any decision-makers face in transport: "How" can my country achieve sustainable mobility? https://www.sum4all.org/gra

2 Sustainable Mobility for All (SuM4All) is a global coalition comprising 56 international organizations, and private companies that share a common ambition toward sustainable mobility and have agreed to work together toward its achievement in countries with a special focus on the Global South. Established in 2017, it brings together bilateral partners, multilateral development banks, U.N. organizations, inter-governmental organizations, private companies, and civil society with a shared ambition to transform the future of mobility.

Each measure in the catalogue of policy measures 2.0 was assessed on three criteria: (i) impact on each of the four policy goals (ii) country relevance and (iii) Resilience. It is structured by toolboxes and thematic areas (*See Appendix A: List of Toolboxes and List of Thematic Areas*).

Criteria 1
IMPACT SCORE ON POLICY GOAL

This score is assigned to each policy measure to proxy its impact on a goal. The values – which vary from zero (no impact), to 1 (some impact), or 2 (high impact) – were sourced collectively and reviewed extensively by SuM4All experts from different organizations involved in the process to minimize subjectivity. Given the very high-level description of measures and the wide diversity of situations, a finer scale of impact scores would not make sense. Some policy measures may have an impact on more than one policy goal, indicating synergies between goals. For example, "applying market-based pricing to street parking" is considered very important for universal access (rating of 2) and green mobility (rating of 2).

Criteria 2
COUNTRY-RELEVANCE SCORE

This score describes the policy measure's relevance to a country as a function of the groups it belongs to in the different policy goals. The score for each country group ranges from zero (not relevant) to two (very relevant). For example, policy measure number 95 "Expand the all-season road network" is assigned a score of 2 for the groups of countries that perform poorly on universal rural access (country group D), and a score of zero for those that perform better on this goal (Country group A).

The country relevance rating accounts for two important aspects:

i. policy measures are not rated "very important" in countries that already implement the measure successfully, i.e., no additional effort may be required, and

ii. policy measures are not rated "very important" when conditions to make the policy measure effective are not in place, or when the country must focus its resources on more urgent policy measures.

Criteria 3
RESILIENCE SCORE

This score proxies resilience of each policy measure on two risk factors: (i) pandemics and (ii) extreme weather events. For each of the two risk factors identified, each policy measure is rated based on its potential to (i) preserve a decent level of operationality during crises and (ii) to support a quick recovery to normal levels, ranked from 1 (low potential) to 4 (high potential) respectively. For example, "adopting a build back better principle for reconstruction" is rated 4 (high potential) to support a quick recovery to full operationality for both extreme weather events and pandemics, as it will create more resilient systems through the implementation of well-balanced disaster risk reduction measures, including the physical restoration of infrastructure and institutional strengthening.

The CPM 2.0 includes 194 policy instruments to achieve sustainable mobility. While this provides a comprehensive policy framework to act on and engage with countries on how to achieve the Sustainable Development Goals (SDGs), countries cannot reasonably consider implementing all 194 policy measures in the catalogue at the same time—nor would it be adequate given disparities in mobility performances.

Thus, as part of the GRA, SuM4All partners structured an approach to select the most impactful policy measures, linking this selection to country performances and gaps in the four policy goals. To that effect, SuM4All developed a ***selection algorithm*** that, applied to the CPM generates a ***Prototype Action Plan*** for a country (*See Appendix B: Methodological Note on the production of Prototype Action Plans)*. This algorithm rests on a complex effort consisting of appraising each policy measure in the CPM using assigned scores on the 3 criteria outlined above to select the measures that provide the most effective and balanced set to address the identified gaps up to a satisfactory level. For most countries, this set will include between 25 and 35 measures. The resulting set of policy measures will form the initial "prototype action plan" (PAP).

Policy measures in the PAP are at a high-level and are not at a level of specificity and granularity needed to guide country or city implementation. Moreover, they do not take specific political realities or micro-local contexts into consideration. The resulting PAP should be considered a starting point for further customization and refinement through engagement with country representatives, local experts, and other relevant stakeholders. This engagement will help the PAP evolve into a **Country Action Plan** that is more practically aligned with a country's needs and context.

This approach takes the view that a one-size-fits-all approach for decision-making in transport is ineffective; policy and investment decisions should be tailored to countries' performances on sustainable mobility and reflect national priorities and realities. This step of confronting the PAP with the country's reality is essential to ensure that the action plan is credible, grounded in the political economy context of the country, and bears any chance to be implemented.

It is important to note that the implementation of a country's action plan is not in and of itself sufficient to reach sustainable mobility for most countries in the world. Systemic improvements in a country's transport system will require sustained country efforts on the policy and investment sides. Many issues simply cannot be addressed overnight or through a single set of reforms and redirections. Most often, a series of action plans will be needed to make progress over time towards the end goal. Action plans will need to be iteratively implemented and redefined in partnership with national and local authorities (to consider national priorities, political environment, etc.) and embedded as part of a broader "national roadmap of action towards sustainable mobility."

The Catalogue of Policy measures was updated in the online Policy Decision-making Tool for Sustainable Mobility (Policy Module) in 2021.[3]

3 https://www.sum4all.org/gra-tool/explorer-action

LIST OF POLICY INSTRUMENTS

Policy Number	Policy Measure	Policy Measure Description	"Impact Rating [0,1,2]"						Relevance by Country Group (level) [0, 1, 2]			
			Unv. Rural Access	Unv. Urban Access	Gender	Efficiency	Safety	Green Mobility	A: Closest to targets	B: somewhat close to targets	C: somewhat far from targets	D: Farthest from targets
Toolbox: Regulatory and Institutional												
Toolbox: Regulatory and Institutional / Thematic Area: Plans and Strategies												
1	Develop an integrated national transport plan	An integrated national transport plan guides the entire transport sector and incorporates: (1) a strategic framework and strategic goals, (2) a discussion of the role of transport services, for all modes, nationally and sub-nationally, and (3) a plan for the future of the transport system including physical network, revenue sources, and financing. It considers current and expected demand, the location of network and facilities, connectivity, cross-border transport, inter-city transport, trade-offs between modes, intermodal, multimodal, modal shift, terminal access, and the roles of the public sector and private sector. It enables the identification of issues of specific importance, such as urban transport or landlocked transit, as well as the identification of issues of global importance, such as motorization, climate change, and mainstreaming of gender into national transport plans, policies, and investments.	1	1	1	1	1	1	2	2	2	2
2	Set targets across policy goals	The implementation of sustainable mobility plans requires strategic long-term and interim goals and tasks to be accomplished with clear qualitative or quantitative statements that define and measure the performance (output, outcome) of the goals or tasks and should be aligned with an integrated sustainable mobility plan.	1	1	1	1	1	1	1	1	1	1
3	Develop mobility plans at the subnational level	Sustainable mobility plans and strategies at the subnational level should ensure adequate city-level or sub-national level regulatory frameworks that are consistent with the integrated national sustainable transport plan. Should also encourage the use of new technologies and data analysis tools to improve public service delivery. For example, a Sustainable Urban Mobility Plan (SUMP) considers the urban area and is based on cooperation across different levels of government and administration. Specific themes that must be considered in the urban mobility plan such as efficient road and parking pricing, high-occupancy vehicle priority lanes, and traffic control systems, travel demand management programs, and the use of real-time information and innovative technology solutions (ITS) to optimize the use of the road network.	2	2	1	1	1	1	1	2	1	1
4	Plan for a multitiered rural access approach	A universal rural access plan should consider four main types, or tiers, of rural access. These are basic access, motorcycle trails, low-volume rural roads, and higher-volume rural roads. They provide a basis for the upgrading of rural access in stages, using a less costly approach when traffic is low and investing in upgrading when traffic is higher. The approach should also consider that rural transport infrastructure must be based on affordability and feasibility including motorized modes such as motor vehicles and motorcycles and non-motorized modes such as animal-drawn carts, bicycles, and head loading.	2	0	1	0	1	0	0	1	1	2
5	Plan for integrated multimodal transport networks	Transport systems are comprised of a collection of corridors, linear facilities, and hubs, made up of different modes, put together as a network. The location of these network components must optimize supply, demand, and multimodal service availability, including road, rail, air, and waterborne transport networks. The plan should be complete and consistent to cover the relevant territory, minimize missing links, avoid overbuilding, integrate land use, incorporate resilience and adaptation to climate change. Plans need to be realistic but also strive to implement high-performing elements and characteristics.	0	0	0	2	0	1	1	2	1	1

Policy Number	Policy Measure	Policy Measure Description	"Impact Rating [0,1,2]"						Relevance by Country Group (level) [0, 1, 2]			
			Unv. Rural Access	Unv. Urban Access	Gender	Efficiency	Safety	Green Mobility	A: Closest to targets	B: somewhat close to targets	C: somewhat far from targets	D: Farthest from targets
6	Adopt ToD principles in land use planning	Land use is a fundamental determinant of transport demand and needs to be planned simultaneously with transport to ensure consistent transit-oriented development (TOD), mixed land use, and compact city planning. Reform development policies and zoning codes such as social inclusiveness and urban transport policy, limit urban expansion and incorporate walking, cycling, public transport use, rail network development in urban planning.	0	2	0	1	1	1	1	2	1	1
7	Mainstream gender aspects in transport plans	Transport policy, planning, and practice must address the gender-sensitive aspects of transport. Making transport policy more responsive to the needs of women requires a structured approach to understanding their needs, identifying instruments to address the needs, analyzing the costs and benefits of those instruments, and establishing an appropriate policy framework. The planning tools currently available for transport do not currently address gender aspects.	0	0	2	0	1	0	1	1	1	2
8	Address green and low carbon shipping in transport plans	An integrated national transport plan must address the environmental impact of freight and logistics, including low-carbon shipping aspects and describes the financial instruments that support it, including incentives and technical support programs at different levels of government. This includes factoring in energy and environmental concerns for better-informed shipping decisions, encouraging efficient supply chains and the circular economy, favoring modal shift toward more rail and waterways, increasing ship and truck energy efficiency, developing and promoting clean, low-carbon fuels.	0	0	0	0	0	2	1	1	1	2
9	Embed the safe system approach into transport planning	Transport planning requires specific capacity building at the global, regional, and country levels. A Safe System approach to road safety in all aspects of national and subnational transport planning will create the resources and tools necessary to target initiatives on a scale capable of reducing road deaths and injuries significantly and sustainably, particularly in low and lower-middle-income countries. It requires further knowledge transfer at regional, national and local levels to ensure current guidance on critical safety issues and available tools are well embedded.	1	1	0	0	2	0	2	2	1	1
10	Provide policy certainty to businesses and investors	Government must make its actions predictable, provide forward guidance on the stance of policy and reduce ambiguity and arbitrariness in implementation. Ensure a stable regulatory and policy framework, setting a timeline for sustainable mobility targets to increase the confidence of businesses and financial investors to make long-term decisions.	1	1	0	1	0	1	1	2	2	1
Toolbox: Regulatory and Institutional / Thematic Area: Institutional Design, Cooperation, and Coordination												
11	Coordinate planning across government agencies	Coordination to ensure meaningful shared responsibility for results must be addressed globally, regionally, nationally, locally; across and between sectors and levels of government; in delivery partnerships with government, non-government and business. This includes the coordination of road safety responsibilities and the coordination of response to extreme weather events among others.	1	1	1	1	1	1	1	2	1	1
12	Define roles and accountabilities across agencies	Government roles, responsibilities, and accountabilities in the transport sector should be defined across the four policy goals, modes of transport, national and subnational government levels, and passenger and freight transport. This will help to ensure broad and multi-sector issues are well-considered between transport and other sectors, and necessary for the successful implementation of transport policies and investments.	1	1	1	1	1	1	1	1	1	1
13	Establish a metropolitan transport governance	Strengthening the governance structure at the metropolitan level helps to achieve a more efficient decision-making process, and to deliver projects and solutions more effectively. The engaging well-prepared staff helps to ensure that the best decisions are taken, following technical and not political guidelines. A common metropolitan data repository allows for centralized information, which is available to all government dependencies and citizens. This helps to ensure that policies and programs proposed are supported on the existing data, as well as preventing extra costs associated with the double collection of data.	0	2	0	1	1	1	1	2	2	1

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			Unv. Rural Access	Unv. Urban Access	Gender	Efficiency	Safety	Green Mobility	A: Closest to targets	B: somewhat close to targets	C: somewhat far from targets	D: Farthest from targets
14	Establish joint gender programs across agencies	Achieving the Gender Policy Goal requires the exchange of knowledge, awareness, and action in two directions. First, institutions and practices within the transport system must take into account the requirements of advancing the Gender Policy Goal. Second, in a mirror-image way, the institutions and practices concerned with gender policy, regulatory change, and gender programs must take into account the context, situation, and requirements of the transport system. This two-direction exchange will be supported by joint programs between transport system institutions ministries and agencies responsible for gender to include transport in their work program.	1	1	2	0	1	0	1	1	1	1
Toolbox: Regulatory and Institutional / Thematic Area: International Agreements and Regulations												
15	Remove non-tariff barriers for international trade	Non-tariff barriers to trade (NTBs) restrict imports or exports of goods or services through ways other than the imposition of tariffs. Non-tariff barriers to trade are any obstacle to international trade that is not an import or export duty. They may take the form of import quotas, subsidies, customs delays, technical barriers, or other systems preventing or impeding trade including import licensing, rules for valuation of goods at customs, pre-shipment inspections, rules of origin, and trade-related investment measures. This will help ensure non-discrimination in the adoption and implementation of technical regulations and standards. Also, as the protection of human, animal, or plant life or health from certain risks.	1	0	0	2	0	1	1	2	2	1
16	Implement single-window and one-stop border posts	A one-stop border post with a single-window system is a border facility that combines two countries' national border control processing into one location where all border formalities for both countries can be completed. The system allows traders to file standard information and documents through a single entry point to fulfill all import, export, and transit-related regulatory requirements for all parties involved in trade, including private participants such as banks and insurance companies, as well as public agencies including immigration and vehicle registration authorities. This approach will save both time and the cost of trading.	0	0	0	2	0	0	1	2	2	1
17	Adopt the use of e-documents for international trade	Transforming what was traditionally a paper-based documentation system into an electronic format can speed up trade and ease the cost of doing business in today's interconnected world. Electronic documents serve as a promising means to deal with the logistical challenges of e-commerce and, in particular, small shipments across borders. Overall, it is quickly becoming an essential component of government efforts to improve the efficiency of customs controls and trade administration processes, and of ensuring trade competitiveness in a rapidly digitizing world.	0	0	0	2	0	0	2	2	1	1
18	Accede to and implement international conventions	The international community has adopted numerous instruments to shape the future of transport worldwide, ranging from legal agreements and conventions to declarations, resolutions, and programs of action. These instruments are often updated through amendments and help policymakers frame policy action to achieve at least one sustainable mobility goal and the 2030 Agenda. The nature and scope of these instruments vary widely: they can be binding or nonbinding for countries, global or regional, focus on specific modes of transport for both passengers and freight, or tackle sector-wide issues. for example, the TIR Convention, the WTO Trade Facilitation Agreement, or core road safety-related UN legal instruments.	0	0	0	2	1	1	1	2	2	2
19	Adopt trucking cabotage rules	Allow truck transport between two places in the same country by a transport operator from another country and/or by a foreign driver or crew. Accordingly, there are two categories of trucking cabotage laws: those affecting the equipment used and those affecting the driver. The aim of allowing cabotage is to improve the efficiency of road freight transport by reducing empty trips after the unloading of international freight.	0	0	0	2	0	2	1	2	2	1
20	Implement ICAO's carbon emission scheme	The International Civil Aviation Organization (ICAO) works to improve the aviation sector's performance while maintaining a high level of capacity and efficiency. Adopt aviation sector-specific emission mitigation approaches such as technological and operational improvements, sustainable aviation fuels, and the Carbon Offset and Reduction Scheme for International Aviation (CORSIA). CORSIA is a market-based mechanism focusing on offsetting emissions through the process of an airline purchasing emission units equivalent to its offsetting requirements. Participation of countries until 2026 is voluntary.	0	0	0	1	0	2	2	2	2	2

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21	Implement IMO's energy efficiency framework	The International Maritime Organization's (IMO's) energy-efficiency technical and operational framework includes: (i) the IMO Energy Efficiency Design Index (EEDI); the Ship Energy Efficiency Management Plan (SEEMP) and the Energy Efficiency Operational Indicator (EEOI). Strengthening and implementing them lays the foundation for future work at IMO on the reduction of GHG emissions from ships including ship design standards, pollution standards, and regulations.	0	0	0	1	0	2	1	1	1	1
Toolbox: Regulatory and Institutional / Thematic Area: Regulations for Transport Services												
22	Adopt a coherent competition policy	The competition encourages the development of new products, services, and technologies; which give users a greater selection and improved products. A clear competition policy for passenger and freight transport across different modes should be based on the principles that competitive markets are central to efficiency and acknowledge that market failures in the transport sector require regulation. A good overview of many transport competition issues can be found in the November 2016 OECD roundtable on the dynamics of competition inland transport. It provides an economic framework for examining competition in global transport and logistics businesses, discusses the adequacy of the remedies available to regulators when competition is threatened and explores the role of competition authorities and Transport Ministries in ensuring markets are efficient.	1	1	0	2	0	1	2	2	1	1
23	Regulate truck size and weight limits	Technical regulations such as limits on truck size and truck weight (including axle load weight) make trucking operations safer and reduce extraordinary wear or operational degradation of road infrastructure. Consistent and well-communicated regulations allow operators to procure vehicles or equipment knowing they meet safety standards and have operating permission throughout an international transport corridor. There are many sets of weights and measures prescribed by different countries. The International Standards Organization (ISO) provides standard vehicle test methods to evaluate safety (ISO Standard 43, Road Vehicles Engineering). The International Road Union (IRU) has a summary of the standards in place in many countries:	0	0	0	1	2	1	0	1	1	1
24	Regulate freight delivery hours in urban areas	Freight delivery in urban areas is often prohibited at nighttime due to concerns of noise, especially in areas with high residential density. Restricting freight to the daytime means less time-sensitive traffic is competing for roadway capacity with most passenger traffic and the other freight traffic. Allowing nighttime delivery, perhaps on a location-specific and pilot basis, could reduce overall traffic congestion. and noise pollution, mindful of the important role of freight delivery for economic activity.	0	1	0	1	0	1	2	1	1	0
25	Establish maximum driving times for drivers	Regulations regarding maximum driving times and minimum rest periods for professional drivers and vehicle operators; for example, road haulage and passenger transport vehicles are common in many countries. These regulations make trucking and passenger transport operations safer and may come with increased reporting requirements to monitor safety compliance across all service providers. Consistent enforcement reduces the incentive for firms to undercut their competitors by over-working their operators. This regulatory review must consider also competition policy to avoid creating monopoly situations.	0	0	1	0	2	0	0	1	2	2
26	Remove barriers to intermodal interoperability	Regulations that prohibit or restrict operators from working together or across different modes to achieve operational efficiency should be reviewed and, generally speaking, discarded. This regulatory review must consider also competition policy to avoid creating monopoly situations. Relaxed interoperability should come with increased reporting requirements to monitor anti-competitive behavior.	0	0	0	2	0	1	2	2	1	1
27	Review legal framework for women's security in transport	Improvements to women's security and protection from harassment while getting to and using transport services requ a review of the national legal, regulatory, and governance frameworks that apply to personal security in public spaces and personal security while in a transport vehicle. A recent study by the International Labor Organization showed that "limited access to and safety of transportation is estimated to be the greatest obstacle to women's participation in the labor market in developing countries, reducing their participation probability by 16.5 percentage points."	1	1	2	0	0	0	1	1	1	1

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28	Exclude drivers with a record of gender-based violence	National and local decision-makers can set and/or improve standards concerning license provisions, especially for taxis and buses to exclude those that have a history and/or criminal record of violence against women and minorities to reduce women's fear of harassment and violence. It is important to highlight that there are a growing number of female taxi drivers providing women-only services in countries such as India, the UK, and France.	0	0	1	0	0	0	0	0	1	1
29	Allow and regulate vehicle sharing and TNCs	Vehicle sharing programs (cars, bicycles, scooters), transportation networking companies (TNCs), and demand-responsive transport solutions, with a focus on last-mile connectivity to high capacity modes, provide multiple benefits for travelers, however, at the same time, the expansion of these services may generate negative externalities that must be regulated. Many times, these regulations are driven primarily by concerns around safety, insurance, congestion management, fares, mobility for all modes, accessibility, and data sharing.	0	2	0	1	1	1	2	2	1	1
30	Review transport regulations periodically	Regulations, and their administration through regulatory institutions and regimes, should reflect current technical, socio-economic, and ecological conditions to allow the fast-moving mobility solutions to evolve toward a sustainable and inclusive transport system and anticipate near-future requirements. There are many sources of change to be accounted for: technology, evolving institutional capacity, demography, market conditions, competition context, international norms, changed understanding of social or ecological requirements, the evolution of social values and goals.	1	1	1	1	1	1	1	1	1	1
Toolbox: Regulatory and Institutional / Thematic Area: Regulations for Vehicles and Vehicle Use												
31	Ensure legal certainty regarding driver permits	Adopt standards and compliance regimes for the provision and withholding of driver licenses and permits, disqualification of drivers and riders including compliance regimes designed to prevent and reduce fatal and serious injury risk. In both freight and passenger transport, the compliance regimes for driver licenses should be communicated to the public, and training in driving and the holding of a license should be open to all unless there is a compelling medical reason to not issue a license.	1	1	0	1	2	0	0	1	1	2
32	Define and enforce speed limits	Safe Speeds are at the core of a Safe System intervention strategy. The aim is to align speed limits with the modal mix, road function, and the protective qualities of roads, roadsides, and vehicles against the risk of death and serious injury in crashes. Publicity and compliance regimes and in-vehicle driver assistance technologies are also involved.	1	1	0	0	2	1	1	1	2	2
33	Define low emission zones in cities	low emission zones (LEZ) are areas where the most polluting vehicles are regulated through access restrictions, which could be based on vehicle emission standards or vehicle age.LEZs are powerful tools for framing and communicating policies on these issues, and enacting policies within a designated zone, rather than a whole city, can be more acceptable for the public and local businesses. They provide a way for cities to take ambitious action more quickly in a priority area. They can also serve as pilot projects or benchmarks for broader applications as the benefits become visible.	0	1	0	0	1	2	0	1	1	2
34	Limit the number of parking spaces in new developments	Replace parking minimum requirements with caps (maximum limits) and other policies that support parking management strategies. The challenge is to have rates that do not hamper economic activities (e.g. shopping) while at the same time discouraging traveling by auto, notably during peak times. Cities should efficiently manage on- and off-street municipal parking.	0	1	0	1	0	1	1	1	0	0
35	Establish electric vehicle manufacturing mandates	Greater use of electric vehicles, where electricity is generated sustainably, will reduce local air pollution and GHG emissions. Countries should ensure that regulatory and industrial policies encourage the manufacturing and deployment of electric vehicles. Many countries around the world have set mandates for zero-emission vehicle manufacturing, hoping to scale up the availability of electric cars in the market. China and some states in Canada and the United States, for example, have adopted ambitious ZEV mandates.	0	1	0	1	0	2	0	0	2	2

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36	Limit the number of new license plates for cars	Implementing restrictions on vehicle ownership can reduce the growth of automobile use. Care must be taken to allocate the licenses fairly and transparently with public support. Related to this policy, road space rationing, also known as alternate-day travel, is another travel demand management strategy aimed to reduce the negative externalities generated by urban air pollution or peak urban travel demand over available supply or road capacity. To maximize the benefits of driving restrictions policies, providing quality public transport options is essential.	0	1	0	1	0	1	0	1	1	0
37	Limit the import of second-hand vehicles	A younger vehicle fleet means, on average, more fuel-efficient and safer vehicles are in operation. However, the vast majority of cars, trucks, and buses imported to low-income countries are second-hand vehicles. They are typically many years or even decades old and have no catalytic converters to reduce toxic gas emissions, thus contributing significantly to air pollution. There are several ways for developing countries to address this situation such as banning second-hand car imports older than a certain age, charging additional excise duty on used and older vehicles, and applying depreciation rates to these imports.	0	1	0	0	1	2	2	1	1	1
38	Establish more stringent fuel economy standards	Many countries are accelerating their rate of emissions intensity improvement with successive standards. All countries allow varied targets across the light vehicle fleet that are based on an attribute such as vehicle mass or size. None applies a flat standard to which all vehicles must comply regardless of size or weight. For instance., the US and EU have more flexible yet more administratively complex designs, including trading or pooling arrangements, and have financial penalties for non-compliance. The detail of standard design varies across developed and emerging markets.	1	1	0	1	0	2	0	1	2	2
39	Set fuel quality requirements and blending mandates	Fuel quality and blending requirements can promote the use of fuels that produce less dangerous end-products or fuels that require fewer environmental inputs in their production. For example, the use of low-sulfur petroleum products, and blending mandates to support alternative fuels can ensure that road freight transport will continue to support economic growth while meeting key energy and environmental policy objectives.	0	1	0	1	0	2	2	2	1	1
40	Require periodic vehicle inspection	Regulations and standards function best when combined with monitoring and enforcement to ensure the regulations governing emissions and safety are performing as expected and that they are being followed. Some care must be taken in designing a periodic inspection process to ensure it is effective but not overly costly to administer or for users to comply with. For example., a requirement for an inspection of safety and mechanical fitness at the time of resale and transfer of ownership is a pragmatic way of ensuring that scooters, motorcycles, automobiles, and light trucks are periodically inspected.	0	0	0	0	2	2	1	1	1	1
41	Establish stricter noise pollution standards for vehicles	Road vehicles produce many outputs from their operation. Some, such as air pollution or accidents, are easily identified as a problem. Other outputs, such as the amount of land/space consumed or noise, are less obviously a problem. However, noise has become recognized as a major negative effect of road vehicle use, especially in urban areas. Countries should review and create noise pollution standards for transport vehicles across modes.	0	0	0	0	0	2	0	0	1	1
42	Define laws for key safety rules	Safe Road Use is a component of the Safe System intervention strategy. It involves standards and compliance regimes for the licensing and disqualification of drivers and riders and key safety rules (compliance with speed limits, use of seat belts, child restraints, crash helmets; driving without alcohol or other drugs or fatigue; driving without distraction), education and compliance regimes designed to prevent and reduce fatal and serious injury risk. The aim is for road users to have the knowledge, capability, capacity, willingness, and assistance to use roads and vehicles safely such that if crashes occur, they do not lead to death and serious injury.	0	0	2	0	2	0	1	1	2	2
43	Require new and used vehicles to meet safety standards	Safe Vehicle is a component of the Safe System intervention strategy. It concerns the planning, design, operation, and use of vehicles through regulation, consumer information, and industry initiatives to provide driver assistance to avoid crashes, reduce fatal and serious injuries as well fast access to emergency medical help. The aim is to support correct in-vehicle use and to protect drivers and passengers as well as road users outside the vehicle.	0	0	1	0	2	0	2	1	1	0

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44	Require crash protective designs in vehicles	Crash protective designs aim to prevent and reduce fatal and serious injuries as well as fast access to emergency medical help. The aim is to support correct in-vehicle use and to protect drivers and passengers as well as road users outside the vehicle such that if crashes occur, they do not lead to death and serious injury. Modern cars, for example, may use crumple zones to absorb crash energy, improve side impact protection with increased door strength, internal padding, etc., airbags, among other features.	0	0	1	0	2	0	1	2	2	1
45	Adopt emission standards for aircraft	Aircraft are required to meet the engine certification standards adopted by the Council of ICAO to respond to concerns regarding air quality in the vicinity of airports. As a consequence, they establish limits for emissions of oxides of nitrogen (NOx, carbon monoxide, unburned hydrocarbons, for a reference landing and take-off (LTO) cycle below 915 meters of altitude (3000 ft). There are also provisions regarding smoke and vented fuel. While these standards are based on an aircraft's LTO cycle, they also help to limit emissions at altitude. Of particular relevance is the Standard for NOx, a precursor for ozone, which at altitude is a greenhouse gas.	0	0	0	1	0	2	2	2	2	2
46	Adopt noise management approaches to aircraft	Much of ICAO's effort to address aircraft noise over the past 40 years has been aimed at reducing noise at the source. Airplanes and helicopters built today are required to meet the noise certification standards adopted by the Council of ICAO. When compared to a baseline of today's aircraft, the goals show more promise for noise reduction for larger aircraft because of a broader scope of technologies that can be applied to such aircraft and minimize the number of people affected by significant aircraft noise.	0	0	0	1	0	2	2	2	2	2
47	Implement regulations to prevent pollution from ships	.Countries should strengthen the design standards and regulations for the prevention of pollution from ships according to International Maritime Organization's (IMO) regulations to address air pollutants from international shipping, particularly sulphur oxide (SOx) and nitrogen oxide (NOx). There is a global limit on sulphur content in fuel oil, currently, 3.5 percent (m/m) which will be lowered in January 2020 to 0.5 percent, while in IMO designated Emission Control Areas the limit is 0.1 percent	0	0	0	1	0	2	1	1	1	1
48	Adopt emission standards for rail transport	Changes in rail transportation are fundamental to achieving energy transitions globally. Yet while rail is among the most energy-efficient modes of transport for freight and passengers, it is often neglected in public debate. The Future of Rail examines how the role of rail in global transport might be elevated as a means to reduce the energy use and environmental impacts associated with transport. Adopt emission standards for diesel-powered locomotives and railcars, for example, the non-road mobile machinery by European Commission regulations.	0	0	0	1	0	2	1	1	1	0
49	Support vehicle connectivity and smart charging regulations	Smart charging is a form of electric vehicle charging in which the time and rate at which an EV's battery pack is charged can be controlled in a more "intelligent" way than the simple use of a manual on/off switch. Smart charging would lead to lower energy waste, reduced congestion, fewer collisions, and lower greenhouse gas emissions. Implement regulations supporting internationally harmonized vehicle-to-everything (V2X) technologies and smart charging solutions, both in hardware and software, to facilitate the growth of e-mobility	0	0	0	1	1	2	2	1	0	0
Toolbox: Regulatory and Institutional /Thematic Area: Regulations for Data Collection, Share, and Use												
50	Establish data protection regulations	The use of personal data and travel data by governments, companies, non-profit entities, and individuals is a fast-growing and rapidly changing topic that has come under much scrutiny in the last few years. There is imperative to establish data protection regulations and standardize processes that handle personal data with appropriate safeguards that ensure personal data is not made available or used without explicit informed consent. The European Union leads the world concerning formally protecting the data of individuals. While other jurisdictions are considering how to deal with data protection and privacy issues, they are still to develop a comprehensive approach. Data protection regulations will fundamentally reshape how data is handled across every sector, including those with a close nexus with transport	1	1	1	0	0	0	1	1	1	1

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51	Require service providers to report standardized data	A basic requirement for any policy development or regulatory regime is to have a good understanding of what is happening in the real world, that is, empirical data. There is no single set of international standards for transport data, but a variety of approaches depending on the mode and use of the data. Within a given country, however, it should be possible to develop standards to allow consistent policy, planning, and regulation. All transport service providers, whether government or private sector, collect operational and transaction data in the course of providing their services. These data are collected over time, which is itself a valuable aspect of the data set. Some of these data are incorporated into financial statements, while others are included in operating statistics provided to regulators, statistics agencies, or used in marketing. In addition, transport data are collected by governments, academics, NGOs for a variety of purposes. New types of service providers such as transportation network companies (TNC) and bike- or car-share companies also have a vast array of data on transport, albeit they have less history and experience in reporting their activities. In total there is a great range of sources of data and a wide spectrum of uses for the data. Standardizing data reporting is key to sustainable mobility as it facilitates efficiency and promotes integrated multimodal transport systems.	1	2	1	2	1	0	2	2	1	0
52	Develop data repositories and data collection guidelines	Data sets in isolation or that are difficult to access/analyze are much less valuable as a resource than data that are accessible and easy to use. Unlocking the full potential of data requires common standards for data collection, data storage, and retrieval. To do so, it is important to establish international standards for collecting and holding transport data and transport databases with a variety of approaches depending on the mode and use of the data. Data collection guidelines are also relevant to allowing the comparison of indicators between cities and countries (differences may be caused by different methodologies or definitions, adjustments, estimates, missing values, invalid or inconsistent entries, potential errors, or other methodological as well as conceptual issues). Not having guidelines has resulted in major discrepancies between organizations. Therefore, the focus should be on a consistent and coordinated approach for processing data and metadata, particularly validation and editing.	1	1	1	1	1	1	1	2	2	2
53	Require use of data to support decision making	Using an evidence-based approach to decision-making in the transport sector is key to making better investments and adopting better policies. Decision-makers should use customized data and evidence to produce actionable information and recommend specific policy pathways to maximize impact. The use of data can inform project delivery during design and implementation, documenting the effects of policy and investment intervention. This use of data should go beyond inclusion in operating statistics provided to regulators, statistics agencies, or used in marketing. Countries should require that usage and financial information and operational data from infrastructure asset managers and transport service providers (public or private) is provided to government or regulatory bodies in confidence. This supports decision-making and regulatory oversight. However, because asset managers and service providers may regard information-sharing as an unnecessary cost, this needs to be explicitly required by governments and regulatory bodies. This information can also be used for service and land use planning, rate setting, and pricing.	1	1	1	1	1	1	1	1	1	1
59	Integrate Gender in Public Procurement and PPPs	Integrate gender in bidding documents for standard public procurement and public-private partnerships (PPPs) by requesting bidders to demonstrate gender experience, by setting gender-specific targets for women's employment and entrepreneurship, for example, quotas for contracts to be awarded to women-owned and managed businesses.	•	•	••				2	2	1	1

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Toolbox: Regulatory and Institutional / Thematic Area: Procurement and Contracts												
54	Prepare public procurement rules and procedures	Developing and requiring harmonized operational practices in procurement allows the transport sector to reduce operating costs, improve oversight, open competition, ensure quality, and encourage innovation. To encourage competition and ensure that the procurement process is timely, efficient, and transparent, the government should prepare procurement rules, procedures, standard bidding documents, and contract documents for the program, supported by an e-procurement platform. The e-procurement platform should guide how to prepare bids; information on forthcoming tenders; support the process of qualifying eligible contractors and inviting and receiving bids; announce the contract awards; track contact performance, and provide a repository of procurement-related documents for the program.	2	2	0	1	1	0	1	1	2	2
55	Procure contractors on a competitive basis	Competitive procurement is generally the best way to obtain value for money when undertaking civil works for construction and periodic maintenance of transport infrastructure. Developing and requiring competitive procurement practices allows the transport sector to reduce operating costs, improve oversight, ensure quality, and encourage innovation. Labor-intensive, community-based contractors may be suitable for performing basic access improvements and routine maintenance of rural roads. Local governments should generally be responsible for procuring contractors subject to obtaining prior or post-facto central government approval of contracts. Procurement packages should generally group batches of individual projects in the same geographical area, to provide contract sizes capable of attracting competition among capable contractors. This will also support the administrative efficiency of the program by limiting the number of contracts to be procured and administered. In some very remote areas, it may be difficult to attract the most capable contractors, and local governments may need to use smaller contractors—including labor-intensive community contractors—and provide them with capacity-building support. Contract documents should provide for core labor standards and equal pay for women and men and reserve a proportion of construction employment for local residents and disadvantaged groups such as women and the poor.	2	2	0	1	1	0	1	1	2	2
56	Use public procurement to support the circular economy	The "Circular Economy" is an alternative to a traditional linear economy (make, use, dispose of) in which we keep resources in use for as long as possible, extract the maximum value from them while in use, then recover and regenerate products and materials at the end of each service life. Countries should encourage more efficient supply chains, a circular economy, and more locally produced goods, without compromising countries' development objectives through trade. This supports meeting the demand for goods with fewer total ton-kilometers. Policy instruments to promote this can include public procurement regulations, improved information for consumers through product labeling, national targets, and incentives for the recycling of various goods. Also, optimizing logistics to reduce empty trips, increase the load factor of vehicles, and re-time urban deliveries can be achieved through infrastructure (for example, consolidation centers), facilitation of information (such as freight exchange), pilot projects, and addressing non-tariff barriers. Each commodity type (for example, fossil fuel, building material, food, or chemicals) has its dynamics in its respective supply chain. Tackling transport emissions thereby touches upon wider topics and structures such as green supply chains, local production of goods, and the circular economy.	0	0	0	0	1	2	1	1	1	1
57	Use public procurement to support vehicle electrification	An Electric Vehicle deployment plan often includes green procurement programs to stimulate demand for electric vehicles. These procurement programs stimulate automakers to increase the availability of EVs on the market, plus provide the impetus for an initial rollout of publicly accessible charging infrastructure. In the EU, for example, policy instruments to increase the adoption of electric vehicles include the Clean Vehicles Directive, which provides for public procurement of electric buses.	0	0	0	0	0	2	1	1	2	2

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58	Establish green procurement practices	Green procurement is about procuring goods and services with a reduced environmental impact. Environmental performance is considered along with other priorities such as price, availability, quality, and performance. Green procurement benefits the environment by reducing greenhouse gas emissions, the use of hazardous and toxic substances, and pollution, including plastic waste. It also supports the economy by creating new markets for innovative products and services. The entire procurement cycle, from deciding to procure goods or services to accepting the completed work and making the final payment, is an administrative process that can be updated to promote more sustainable outcomes. Environmental criteria and sustainable development approaches can be built into the terms of reference for the goods or services being procured. Similar criteria and approaches can be built into each stage of the procurement process including requests for information, requests for expressions of interest, requests for quotations, requests for proposals, etc. The evaluation of each of these tasks can explicitly include environmental and sustainable development criteria. The conclusion or wrapping up of any procurement should conduct at least a minimal review of how well the procurement process and the work were performed. This closing evaluation up should also include environmental and sustainable development criteria.	0	0	0	0	0	2	0	0	1	2
59	Integrate gender in public procurement and PPPs	Procurement policies and practices can support changes in personal and industry behavior. Contracting and procurement practices can be used, where appropriate, to help achieve quotas of females in the workforce - especially in construction, maintenance, and operations. Integrating gender in bidding documents for standard public procurement and public-private partnerships (PPPs) can be achieved by requesting bidders to demonstrate gender experience and by setting gender-specific targets for women's employment and entrepreneurship. There are already some examples of preferential contracting rights for female-owned providers which help to stimulate women entrepreneurs, especially in engineering and construction. Selection criteria and evaluation criteria in procurement can help ensure that gender is considered in purchase decisions. Setting targets and recognition programs have already helped in occupations such as train, tram, and bus driving where there are already a growing number of women workers.	1	1	2	0	0	0	2	2	1	1
60	Establish a pool of technical and financial experts	When formulating the transport programs, the central government should establish a pool of independent experts to undertake technical and financial audits of projects, to support quality assurance, value-for-money, and anti-corruption. Engineers and technical experts should conduct technical audits, and accountants and other financial specialists should conduct financial audits. The technical should physically verify that all executed works have been carried out in compliance with the contract and accordance with technical standards and specifications. The financial audit should examine financial records and reports, verify compliance with procurement laws and procedures, and determine whether audited projects have provided value for money.	1	1	0	0	1	0	1	1	2	2
Toolbox: Regulatory and Institutional / Thematic Area: Capacity Building and Human Resource Development												
61	Identify and empower sustainable mobility champions	Sustainable mobility is an important enabler for economies to prosper and be socially inclusive. Achieving sustainable mobility requires political will from champions, such as ministers and mayors. These actors will champion the cause and will be responsible for personally moving the needle for the implementation of policy measures that support sustainable mobility, and advocating for the cause at a local, national, and international level, creating momentum with other policymakers and champions.	1	1	1	1	1	1	1	1	1	1

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62	Build capacity across levels of government	The transport system is complex and reaches across several parts of a country. Aside from a very small number of city-states, no one level or order of government can completely deal with the complexity and requirements of transport and its interactions with other sectors of the economy. Countries must ensure that coordination across all levels or orders of government is included in their national capacity. This includes coordinating across the whole national government to ensure broad and multi-sector issues are well-considered between transport and other sectors. Building national and local capacity across levels of government, jurisdictions, organizations, and modes, should also include providing training and information resources. Countries should also minimize fragmentation of the legislative framework and ensure legal certainty for transport asset creation, maintenance, and operation.	1	1	1	1	1	1	0	1	1	2
63	Provide training for the workforce in leadership positions	The transport system makes use of various inputs to deliver its services, including land, capital, and labor. Labor, or human resources, is generally the most expensive part of providing a transport service on a day-to-day basis. Infrastructure costs seem large because they require very large initial land and capital inputs. However, once the infrastructure is in place, labor for operations and maintenance becomes the largest input. Countries must support the development of human resources in transport- as this is the input that can adapt to new circumstances more readily than physical assets such as infrastructure or vehicles. This implies that human resources are an important part of adapting to the dynamic needs of sustainable mobility. Additionally, transport sector requirements should be coordinated with broader government human resources policy to ensure sufficient funding for technical training is provided for the current and future transport workforce. Funding should be provided for workforce transition where shifting requirements have made workers redundant.	1	1	1	1	1	1	1	1	1	1
64	Facilitate capacity building at the international level	Support sector-specific (passenger or freight traffic; by mode) international capacity building by actively participating in international initiatives, adopting and implementing international initiatives, and taking lessons learned from country experience forward for international consideration. Many international organizations have well-developed programs of work (such as ICAO State Action Plans) that can provide guidance and support for national implementation as well as an opportunity for country participation in shaping the programs.	1	1	1	1	1	1	2	2	2	2
65	Build capacity for local path and road maintenance	Initially, this involves conducting a capacity assessment of the main entities responsible for planning, implementation, and maintenance of rural access infrastructure and regulation of local transport services. This should identify capacity gaps and the types of capacity-building activities needed. Capacity-building support should then cover subjects such as rural access program leadership, management and oversight, rural network planning, community consultation, technical standards, rural access engineering and construction materials, social and environmental safeguards, construction supervision, project management by private contractors and/or labor-based community contractors, rural access asset management, and methods of regulating local transport services. Capacity-building activities should be generally conducted through existing national or regional institutions such as engineering institutes and universities, training centers for road sector professionals and technical staff, and local government and rural development training organizations.	2	0	1	0	1	0	1	1	2	2

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66	Train more women on skills needed in transport	Efficiency within the transport sector can be increased by filling known gaps in skill sets with more female and non-traditional candidates. Positions include engineers, drivers for heavy-duty vehicles including buses, road haulage, logistics, off-road activities such as mining, and many areas in the rail sector. New skills may be required, but gaps in the market are also created by aging within the sector; this can be eased with the injection of suitable female and male candidates. An example from the mining industry shows that women are now the preferred drivers of large heavy-duty construction vehicles as they tend to be more careful and follow operating directives more carefully, resulting in lower operational costs. In addition, it is important to promote role models for all jobs that women can do, but maybe traditionally seen as masculine, including operating heavy machinery, engineering, technical positions, and driving - planes, ships, trains, and road-based transport. Women should be able to benefit from equivalent opportunities for training and career development. Targeted awareness proactive programs and campaigns to influence decisions made at key life-stage points such as working with schools and learning academies, dedicated programs to provide skills to women can help to change embedded preferences for male recruitment and fill existing and upcoming skill gaps.	1	1	2	0	0	0	1	2	2	1
67	Build capacity on gender-inclusive accessibility planning	There have been many developments in transport planning over the past twenty years that can be used to make transport more gender-sensitive, such as accessibility planning. These need to include more information about the centers of interest for women and the gender-specific aspects of access to education and health care. Many of the planning tools currently available for transport do not fully address gender aspects. International research studies show that women's accessibility to transport depends on a complex interaction of four main elements: financial accessibility, physical accessibility, cognitive accessibility, and emotional accessibility These elements affect women differently (with age and life stage) and may vary according to the time of day (e.g. traveling in poor light or darkness is generally avoided), day of the week (such as avoiding certain days). Travel decisions are also influenced by third-party events or the personal experiences of others, more profoundly. Beyond socioeconomic aspects, these four aspects combined constrain and restrict women's mobility and behaviors. The same transport option can thus be interpreted differently by women and men, affecting their decision to travel or not.	1	1	1	0	0	0	1	1	1	1
68	Ensure legal protection for women in the workplace	Laws and regulatory rules can influence behavior in pervasive and sometimes unintended ways. Laws and rules must be reviewed to ensure that gender issues are being considered. This should be supplemented with nondiscrimination in enforcement and legal protection of women in workplaces. The main areas for action include removing legal and social barriers and addressing the gender pay gap. Additionally critical is improving legal working conditions in the transport sector and writing up contractual rights to be more family-friendly. This should be done to overcome perceived and real barriers that make working in transport incompatible with a quality work-life balance. This includes part-time work and flexible hours, without the need to be a full-time employee, offering maternal protection, health arrangements, improving options for re-entering the workforce after a career break, and the legal requirement for female-friendly facilities. Other measures that help make transport jobs attractive to women include ensuring that the social conditions and protections (health insurance and pension rights), and contractual rights to paternity and maternity leave include female needs which may include career breaks for family reasons.	0	0	2	0	0	0	2	2	1	1

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69	Include women in recruitment and foster women's leadership	Public authorities and service providers should be encouraged to include women in their recruitment processes (gender-neutral job profiling), including for maintenance works for rural roads, and foster talent and leadership to create a baseline of decision-makers in transport and promoting candidates to positions of power. Not all transport jobs are attractive to women, nor should they be. Positions requiring long periods away from family, or those requiring physical strength, do not suit everyone but women themselves should be free to choose if they wish to follow these careers. Recruitment procedures should be 'blind' i.e., a resume or job application is presented without name or gender. Additionally, gendered attention to health and safety in the workplace, especially concerning violence against women (cited today as being one of the main constraints to women looking for employment in the sector) needs to be mainstreamed. Legal protection for women in the workplace and public spaces is a prerequisite for addressing this. Vigilance and enforcement are needed at all levels to ensure a zero level of tolerance. There is a need on the one hand to ensure that workers know their rights and that gender-sensitive training is available, and on the other to promote women into their ranks to ensure that there is greater equity.	0	0	2	0	0	0	2	2	1	1
70	Train security and transport staff in gender aspects	The safety and security of transport users depend on the physical design and services offered, but more importantly, it depends on the practices and attitudes of the people involved in providing the transport service. Transport staff needs to understand the gendered aspects of security and use safe practices. While men and women both worry about personal security (especially theft), sexual harassment on (public) transport is a hazard faced principally by women and young girls. Safety and security strongly influence the mobility of women and girls. The lack of provision of safe traveling environments is crucial for women, transgender, and girls, constraining their access to opportunities, goods, and services. This policy recommends making provisions for gender-sensitive training for security agencies, transport operators, and the creation of gender units to deal with complaints and grievances.	1	1	2	0	0	0	1	1	2	2
71	Create mentoring programs and professional networks	Create programs to promote role models, mentoring, and networks of transport professionals, including programs targeted at women. A mentoring program is about helping the transport workforce to develop more effectively. It is especially important for women, who can benefit from role models in male-dominated careers. A mentoring relationship is designed to build confidence and support the mentee, so they can take control of their development and work. Mentoring is not the same as training, teaching, or coaching, and a mentor doesn't need to be a qualified trainer or an expert in the role the mentee carries out. They need to be able to listen and ask questions that will challenge the mentee to identify the course of action they need to take regarding their development.	1	1	1	1	1	1	1	1	1	1
Toolbox: Engineering and Technology												
Toolbox: Engineering and Technology / Thematic Area: Technical Standards												
72	Establish technical standards for transport infrastructure	Establish high technical standards for transport infrastructure design. Modern construction standards should be developed and used so that transportation infrastructure is created using accepted, up-to-date, harmonized standards and regulations. The adoption and use of these standards, regulations, and norms will support the broader construction industry and ensure the construction of assets that: (i) promote sustainability in transport and adaptation to climate change; (ii) are not reinvented for each project; (iii) encourage efficiency, such as lower cost, faster and more reliable travel time, greater productivity; (iv) promote interconnections between different assets; (v) promote system inter-operability (such as narrow versus standard rail gauge); and (vi) take account of advances in knowledge and evidence and do not lead to costly over-or under-design. Additionally, there is a need to manage transport assets using accepted, up-to-date, and harmonized standards and regulations for asset management and maintenance. The adoption and use of these standards, regulations, and training methods will ensure management practices do not need to be redeveloped in each case and will promote interoperability among the use of various assets and technologies.	2	1	0	1	0	1	1	1	2	2

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73	Harmonize construction standards along corridors	Adopt construction standards so that assets are created using accepted, up-to-date, harmonized standards and regulations, across borders, within regions, and along transport corridors. Construction standards must promote interconnections between different assets and promote system inter-operability (such as narrow versus standard rail gauge). In doing so, policymakers should plan for complete networks that optimize supply, demand, and service availability. In the European Union, the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC) develop standards for various transport modes (road, rail, and maritime), and relating to horizontal topics such as interoperability, intermodal transport, intelligent transport systems (ITS) and the transport of dangerous goods.	1	0	0	2	1	0	1	2	2	1
74	Recruit qualified firms for project design and feasibility	Good quality and reliable transportation services depend on having good quality inputs at all stages of developing and operating the transport system. These stages include feasibility analysis, initial and detailed design, and supervision and quality assurance during construction and operation. Local governments should generally recruit qualified consulting firms to perform the tasks of preparing feasibility reports and engineering designs (including the preparation of basic engineering drawings and bills of quantity) and supervising civil works. Feasibility reports are required to confirm compliance with program eligibility criteria and technical and economic feasibility. Engineering design and supervision are needed to ensure that construction and maintenance works will meet required technical standards, to provide the technical documentation required for procurement of contractors, and to supervise contractor performance.	1	1	0	1	1	0	0	1	1	1
75	Ensure safe roads design with lower design speeds	Plan and design safe roads and roadsides for lower speeds, including features that calm traffic, making increasing use of bicycles and pedestrian flows in urban areas into consideration. The planning, design, and operation of Safe Roads and Roadsides sets the framework for safe road and vehicle use. Research has shown that road-related factors are very strongly linked to fatal and serious injury causation in road collisions. The aim is to support correct road use in the form of "self-explaining" roads and "forgiving roads and roadsides" such that if crashes occur, they do not lead to death and serious injury. Safe Speeds are at the core of a Safe System intervention strategy. The aim is to align speed limits with road function and the protective qualities of roads, roadsides, and vehicles against the risk of death and serious injury in crashes.	1	1	0	0	2	0	2	2	2	1
76	Ensure integration of public transport and bicycles	Physical and technological infrastructure projects can improve urban access. Many of these have a high impact but also need very high investments as they relate to major physical interventions. Some of them imply the implementation of civil works but are smaller in size and cost. These measures are generally popular and well regarded by policymakers in general as they are physically visible, and change is evident. Examples of such interventions include bicycle parking and allowing bicycles in public transport (with limitations because of vehicle size or passenger density). Bicycling and public transport should be integrated as cycling extend the catchment areas of public transport stops far beyond walking range (first and last-mile connectivity). Public transport, in turn, complements cycling by overcoming long distances, physical barriers, or bad weather.	0	1	0	1	0	1	1	1	1	0
77	Improve intermodal connections in transport hubs	A transport hub is a place where passengers and cargo are exchanged between vehicles or/and between transport modes. These transport hubs include train stations, rapid transit stations, bus stops, airports, and ferry slips. Freight hubs include dry ports, airports, seaports, and truck terminals, or combinations of these. Efficient intermodal connections are increasingly important to achieve sustainable mobility to be able to rip the individual and social benefits of each mode of transport, increasing the share of multimodal trips.	1	2	0	2	1	0	1	1	1	0

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			Unv. Rural Access	Unv. Urban Access	Gender	Efficiency	Safety	Green Mobility	A: Closest to targets	B: somewhat close to targets	C: somewhat far from targets	D: Farthest from targets
78	Set design standards for sidewalks and bicycle paths	Standards for sidewalks and bicycle paths are important to ensure the safety of pedestrians and cyclists, and also to enhance their travel experience, and encourage a shift to active modes of transport. To do so, agencies must implement high-quality design standards for sidewalks and bicycle paths, for example, safe and convenient pedestrian crossing and adequate street lighting, ensuring accessibility to persons with disabilities, and considering gender-sensitive aspects. Gender considerations would include, for example, dropped curbs at crossings, the size of refuge islands, and the timing of traffic signals. All of these elements are considered in a complete street design standard, which is a transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation.	0	2	2	0	2	1	1	2	2	2
79	Ensure transport project design includes gender aspects	The planning and design of transport infrastructure (corridors, networks, facilities, hubs, etc.) must include considerations for women and people with disabilities. For example, bus/train crowding levels, the height of steps, location of grab rails/hanging straps, reserved seating, sightlines and visibility, lighting, separated facilities when needed (bathrooms, rest areas), safe access points, and waiting areas. Additionally, infrastructure maintenance funding for women and accessibility must receive equal consideration to other maintenance.	1	1	2	0	1	0	1	1	1	1
80	Set and implement climate change adaptation standards	Climate change poses major threats to infrastructure investments and services by increasing disaster risks, both in terms of severity and frequency. This includes aggravated risks of flooding, storms, and heatwaves, which may impact roads, rail infrastructure, ports, and airports. It is also responsible for triggering longer-term changes, such as average temperature increase, sea-level rise, changing precipitation patterns, permafrost melting, or desertification. Transport disruptions as a result of climate change can also have an important impact on the economic activity of a region, area, or country since trade and production are highly dependent on transportation to generate revenues. On the other hand, reliable access to transport can help alleviate the impact of extreme weather events, especially when it comes to disaster recovery, making resilient transport a valuable asset in adapting to climate change. The case in favor of more resilient transport is thus very clear, as it would enable accessibility and the movement of people and goods despite climate-triggered shocks and disruptions. However, this will only be made possible through major adaptation strategies on international, regional, and local levels. At present, a few operational stakeholders and governments have taken initial steps toward a more resilient infrastructure. Only a limited number of countries are developing full-fledged national adaptation plans. Consequently, adaptation efforts today are too weak and should be strengthened and broadened, in combination with mitigation measures.	1	1	0	1	0	2	2	2	1	1
81	Set low-noise engineering and traffic management practices	Noise has been linked to serious health risks, including an increased likelihood of hypertension and heart disease, a deteriorated quality of life from increased stress levels, sleep disturbances, and interference with cognitive development and performance. Nonetheless, despite being a global and serious problem, noise suffers from a lack of precise data in various regions, with the most accurate measurements found in studies focusing on the EU. As far as transport is concerned, road traffic (including honking, accelerating, highspeed driving, and stop-and-go behavior) is the key source of noise for a majority of people, even if rail and air can also be substantial sources locally. Trucks and conventionally fueled motorized two- and three-wheelers are particularly harmful. Additional factors contributing to noise impacts include the maintenance levels of both the vehicles and the road surfaces or rail tracks, and the closeness of the transport infrastructure to the receptors, including its vertical alignment. Tracks or roads that are aligned vertically with the receptors result in higher noise-related disruptions, as noise is then transmitted more easily. Consequently, building road or rail infrastructure slightly below ground level or elevated on a platform can help decrease noise levels. Additionally, setting traffic management practices to reduce noise pollution, for example, speed limitations, speed humps, traffic lights coordination, and roundabouts, and setting low-noise road engineering and maintenance practices, for example, low-noise pavement and noise barriers, can help decrease noise levels.	1	1	0	0	1	2	2	2	1	1

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82	Modernize air traffic management	Modernize air traffic management to improve aviation safety and efficiency, as defined in the ICAO global air navigation plan (GANP), endorsed by the ICAO Assembly. The ICAO GANP is a strategy to achieve a globally interoperable air navigation system, for all users during all phases of flight, that meets agreed levels of safety, provides economic operations, is environmentally sustainable, and meets national security requirements. The GANP encourages innovation and guides the aviation community to modernize the provision of air navigation services by applying innovative solutions while increasing capacity and improving efficiency.	0	0	0	2	2	0	2	2	2	2
83	Establish a state aviation safety oversight system	Establish and implement a state's safety oversight system in line with the ICAO Global Aviation Safety Plan (GASP) objectives and progressively adapt them into more sophisticated means of managing safety. The Global Aviation Safety Plan (GASP) sets out a strategy that supports the prioritization and continuous improvement of civil aviation safety. The GASP provides a framework for the development and implementation of regional, sub-regional and national plans. Through this document, ICAO promotes harmonization and coordination of efforts aimed at improving international civil aviation safety. The overall purpose of the GASP is to guide the harmonized development of regional and State safety planning, supported by regional safety activities coordinated by the regional aviation safety groups (RASGs).	0	0	0	0	2	0	2	2	2	2
84	Coordinate new transport and telecom infrastructure	Transport infrastructure assets are characterized by being long, linear, facilities (a road, a railway) that connect location-specific nodes or hubs (freight depot, passenger terminal, maintenance yard). These characteristics are shared with several other types of infrastructure such as telecoms, electric power, water supply, wastewater treatment, and oil and gas pipelines. There are clear advantages to combining linear corridors during strategy and planning to make efficient use of land and to minimize the disruption that infrastructure and utilities may cause by blocking easy access across infrastructure rights-of-way. Coordination among the different civil works is necessary for new mobility infrastructure to maximize synergies and limit costs.	0	0	0	2	1	1	1	1	1	0
Toolbox: Engineering and Technology / Thematic Area: Asset Construction												
85	Build complete multimodal networks	The goal of "allocative efficiency" is to "build the right things". In transport terms "building the right things" means planning complete networks that optimize supply, demand, and service availability. Plans for the transport network system should be informed by the transport strategy-setting process and integrated land use and transport planning. Improvements in the performance of transport networks can be achieved through technological innovation and by using advanced planning and regulatory tools, including participatory planning and gender considerations. Several regional agreements focus on efficiencies of infrastructure — the identification, design, development, construction, and signage of international transport networks, and the creation of mode-specific or multimodal transport facilities, such as terminals and border-crossing points. These agreements contribute to transport efficiency by enhancing infrastructure quality and connectivity within and between countries.	0	0	0	2	1	1	1	2	1	1
86	Build rail and maritime transport infrastructure	Every transport mode has its particular technical characteristics. Sustainable mobility seeks to reduce the impact of transport by taking advantage of the benefits of each model to the impact of transport on society. Some modes, such as rail and water transport, are inherently more energy- and space-efficient than some other modes, such as road and air transport. In addition, multimodal freight transport systems that operate high load factors and capture the economies of scale of rail and waterborne freight may also unlock multiple synergies, providing for green mobility by lowering emissions per ton-kilometer, enhancing efficiency in terms of energy consumed, and improving safety via the safer operation of rail and water freight movement than road freight transport.	1	1	0	1	1	2	2	2	1	1

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87	Expand public transport infrastructure	The mainstream approach in urban planning for many cities across the globe continues to give greater emphasis to low-density and sprawled urban areas, greater investment and street space for individual motorized traffic, and lower investments (and institutional care/ consideration) for public transport, cycling and walking. To reverse this trend, an expansion of public transport networks is a solution that also provides reduced air pollution, reduced traffic congestion, increased fuel efficiency, more safety on the roads, encourages healthier habits, and benefits communities financially. Expanding the public transport network must be done considering demand requirements, with an emphasis on equitable access and focusing on the most appropriate modes in each context, including bus, rail, demand-responsive service, cable-propelled transport, and ferry transport. The provision of public transport should be enhanced with compact and mixed land use urban development that favors the use of sustainable transport modes.	1	2	1	1	1	1	1	1	2	2
88	Prevent the construction of urban expressways	Expressways or motorways were promoted as transportation options in urban areas between about 1950 and 1990. Since then, the more negative aspects of this type of transport have become recognized and appreciated. These negative aspects include the promotion of travel by personal automobiles, local air pollution, local noise pollution, extensive use of urban land, fragmentation of urban activity through the boundary effect of an impassable right-of-way, and the promotion of sprawling land-use patterns. Removing urban expressways from consideration as a type of transport investment has three benefits: there is a high level of impact on transport city-wide, the time required to implement this policy is minimal, and the costs avoided from a highway investment can be directed to other types of urban transport. Preventing the development of new urban expressways can help avoid the segregation of neighborhoods and avoid additional car travel.	0	1	0	0	0	1	1	2	2	1
89	Build logistics consolidation centers	Modern freight transport is based on logistics. That is the sum of all arrangements needed to move a shipment from its origin to its final destination and their interaction of these arrangements with each other. This has replaced the older way of thinking about freight shipments as a piece-to-piece or step-by-step process. Logistics thinking requires an integrated and multimodal way of doing freight, using real-time information and operational flexibility. Logistics requires a very high level of coordination and understanding between all the links in the logistics chain. Multimodal freight requires no friction or misunderstanding between everyone participating in the freight movements. Building logistics consolidation centers and exchange platforms with a focus on multimodal transport avoids fragmented supply, production, and distribution chains; fostering private sector participation in investment and operations of logistics hubs. Consolidation of separate freight movements into larger shipments allows the use of higher-capacity transport modes, for example from the truck to rail, and truck again. A complete understanding of the supply chain encourages "logistics hubs" where co-location of different transport and storage facilities simplifies the ability to choose the most efficient link and attracts more services to locate at the same place, thus improving the level of logistics service on offer. More selection and cheaper costs make for more integrated and more efficient transport.	0	0	0	2	0	1	2	2	1	1
90	Build roadside produce storage for farmers	Simple roadside produce storage facilities need to be established to allow farmers to consolidate produce before collection and reduce losses from perishability. Small farmers often face problems in obtaining fair returns for their produce because of limitations in rural logistics. Since the volume of each farmer's production is low, farmers have little choice over who will buy their product and are often unable to obtain fair prices. The cost of transporting small volumes of produce to market is high, partly because transport services operate at low levels of capacity utilization, and there are problems with empty backloads. In the absence of basic roadside storage facilities to protect against weather and infestation, the condition of a farmer's produce awaiting collection will deteriorate, leading to lower prices at the time of sale.	2	0	0	1	0	0	0	0	1	2

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91	Invest in quality aviation infrastructure	Invest in the modernization and expansion of quality aviation infrastructure as defined in the ICAO GANP endorsed by the ICAO Assembly. The ICAO Global Air Navigation Plan (GANP) is a strategy to achieve a globally interoperable air navigation system, for all users during all phases of flight, that meets agreed levels of safety, provides economic operations, is environmentally sustainable, and meets national security requirements. The GANP encourages innovation and guides the aviation community to modernize the provision of air navigation services by applying innovative solutions while increasing capacity and improving efficiency. The GANP, at the national level, supports the development by States, in coordination with relevant stakeholders, of air navigation plans. For new infrastructure investment projects, the GANP recommends that the objectives should be described in terms of (i) enhanced safety, (ii) increased system capacity, (iii) reduced costs, (iv) bad weather detections, and (v) increased traffic.	0	0	0	1	1	0	2	2	2	2
92	Develop infrastructure for road transport electrification	The use of electric cars is expected to increase drastically over the next decades, and road electrification will be needed to support the increase in the demand for charging stations. The establishment of an electrified road (e-roads) infrastructure network allows for charging electric vehicles conveniently will reduce the restraints from the battery. Developing infrastructure for road transport electrification, such as charging stations, e-road systems, electricity, and hydrogen power capacity, is critical to meet the demand for electricity from trucks, cars, buses, etc.	0	1	0	1	0	2	0	1	1	2
93	Invest in port electrification	While ground transport is currently leading the transition to electric propulsion, maritime transport is starting to see its share of electrification with several large ferries recently having gone all-electric. Electric ships may however find a role in inland water transport before being used for global long-distance shipping. This measure calls for investing in infrastructure for port electrification, such as electric charging facilities in ports and hybrid and electric ships.	0	0	0	1	0	2	0	0	1	2
94	Invest in railway electrification	To achieve climate objectives, there is a need for deep decarbonization of all modes. For larger trucks and ships, electrification faces higher barriers than the passenger transport sector and may not deliver all of the required GHG reductions. Therefore, alternative fuels such as sustainable biofuels, power-to-liquids/gas, hydrogen from low-carbon energy sources, and methanol, may play an important role as well. For rail, although it is the lowest carbon-intensive surface mode now, further electrification with the use of catenary lines or hydrogen fuel-cell trains is required as well. This is geared toward reducing the dependence on diesel fuel, increasing energy efficiency, and reducing noise and vibrations. The International Union of Railways promotes world rail transport to meet the challenges of mobility and sustainable development. It promotes interoperability, (including common solutions with other transport modes), and facilitates international cooperation among members and the sharing of best practices (benchmarking).	0	0	0	1	0	1	0	0	2	2
95	Expand the all-season road network	Improvement of access is one of the four goals set by the global SuM4All initiative, aimed at ensuring the sustainability of the transport sector and helping countries move along the path to achieving the SDGs. Universal rural access is embodied in SDG target 9.1. The key elements are that access should be provided for all people equitably and should be affordable. The expansion of infrastructure should support economic development and human well-being. Additionally, it should be quality, reliable, sustainable, and resilient. By referring to infrastructure supporting economic development and human well-being, it identifies the importance of providing access to jobs and productive opportunities, and access to markets and basic services such as health and education. By mentioning quality, reliable, sustainable, and resilient infrastructure, the target points to the need for rural access infrastructure and services to be well designed, built, managed, and maintained, with in-built climate resilience.	2	0	1	1	0	0	0	1	2	2

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96	Improve first and last-mile access infrastructure	In passenger transport, "First/Last Mile" (FLM) refers to the entire journey of an individual from trip origin to destination. People may use several modes of transport to begin and complete the journey – they may walk, drive, ride a bicycle, take a train, or - in many cases - combine several modes. Bus and rail services often form the core of a trip on public transport, but users complete the first and last portion on their own. For example, they must first walk, bike, drive or roll themselves to and from the nearest station. Improvements to the FLM can encourage more use of public transport. This begins by identifying existing barriers, then planning and implementing improvements for the first/last mile portions of an individual's journey. Examples of FLM improvements include infrastructure for walking, rolling, and biking (e.g. bike lanes, bike parking, sidewalks, and crosswalks), shared-use services (e.g. bike share and car share), facilities for making modal connections (e.g. auto/transit and bus/rail interface), and signs, way-finding, and information and technology that supports travel (e.g. information kiosks and mobile apps). In freight transport, the term "last mile" has been applied to supply chain management. Transporting goods via freight rail networks and container ships is often the most efficient and cost-effective manner of shipping. However, when goods arrive at a high-capacity freight station or port, they must then be transported to their final destination. This last leg of the supply chain is often less efficient, comprising up to 28% of the total cost to move goods. This has become known as the "last mile problem." Sustainable, inclusive, prosperous, and resilient cities depend on transportation that facilitates the safe, efficient, and pollution-free flow of people and goods, while also providing affordable, healthy, and integrated mobility for all people. It should be about high-occupancy, solving first/last mile issues, and must complement public transport.	1	1	1	0	1	0	1	1	1	1
97	Expand the network of bicycle lanes	This measure recommends building quality and safe infrastructure for cycling, with a focus on protected bicycle lanes. The planning, design, and operation of Safe Roads and Roadsides is a component of the Safe System intervention strategy. It sets the framework for safe road and vehicle use. Safe and Healthy Modes covers the provision and promotion of access to safe public transport modes as well as the road safety needs associated with increasing use of higher risk (due to users' vulnerability), but otherwise healthy, road user modes such as walking and cycling. Some expansions may however call for change in national design standards for streets and roads, requiring strong collaboration with national governments.	0	1	0	0	2	1	1	1	1	0
98	Repurpose road space to allow access for all modes	Repurpose existing road space with complete street designs accommodating diverse users and uses, with access for all modes, particularly pedestrians and cyclists, and their access to public transport stations. Measures to repurpose road space for other modes, e.g. using bicycle lanes, are generally popular and well-seen by policymakers in general as they are physically visible, and change is evident.	0	1	1	1	2	1	2	2	1	1
99	Invest in sustainable fuel storage for ships	Investments to support sustainable fuel storage for ships include low-Sulphur diesel standards for ships and trucks, incentives and standards for sustainable biofuels (bio-methane, second and third-generation biofuels) as well as other sustainable gaseous or liquid synthetic fuels (power to gas, power to liquids, hydrogen, methanol). These are particularly important for trucks, ships, and aviation infrastructure, for example, incentives for charging stations and hydrogen supply systems.	0	0	0	1	0	2	0	0	1	2
100	Ensure an optimal level of vehicle availability and use	For well-functioning transport services, there must be a good plan, good standards of service, well-organized means of service delivery, and finally, the three elements must come together in an optimal service using optimal infrastructure assets such as vehicles. For example, adapt bus or train capacity to activity and load factor, invest in buses and rolling stock to reduce public transport crowding, plan levels of service to maximize the match between transport demand and supply, plan services to optimize availability, reliability, and access along routes, and plan services to ensure alignment with other transport and non-transport activities. For optimal use, services should be provided using accepted, up-to-date, and harmonized standards for service provision. Easily accessible information about the services available—timetables, points of access and egress, and prices— is essential for users to make efficient use of the services.	0	1	0	2	0	0	1	1	1	1

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101	Modernize railway infrastructure	Older train fleets tend to be based on older and less efficient technologies but are often not replaced at the end of their natural lifespans. However, these systems can be modernized by retrofitting newer technologies, especially newer traction power systems that are more powerful and more efficient; this transition can be accomplished quickly and at a relatively low cost. Rail transport agencies and operators should modernize rail infrastructure by investing in lightweight rail vehicle components, electronic brakes, aerodynamic shape of rolling stock, and energy consumption metering system, to improve energy efficiency.	0	0	0	0	0	1	1	1	1	1
Toolbox: Engineering and Technology / Thematic Area: Design and Deployment of Transport Services												
102	Improve the quality and safety of public transport	Public and private as well as formal and informal public transport operations must have high quality and safety standards such as service frequency, reliability, cleanliness, and safe driving practices. Improving the quality and safety of public transport operations requires an understanding of the minimum standard level of transport service that must be provided to everyone, including poor and vulnerable users. Customer satisfaction surveys should include features such as safety and security, cleanliness, waiting for time/frequency, information, ticketing system, and staff/driver attitude. Implementation of bus lanes and other bus priority measures also improve the quality and safety of public transport.	1	2	1	0	1	1	0	1	2	2
103	Provide effective car and bicycle sharing systems	The new urban transport paradigm recognizes the unique and important roles that active (walking and bicycling) and public transport (buses, trains, and shared taxis for last-mile connectivity) play in an efficient and equitable transport system. They are resource-efficient (they have minimal financial, space, and energy requirements) and inclusive (they accommodate diverse users).	0	2	0	1	0	1	2	2	1	0
104	Ensure access to transport services in underserved areas	The underlying goal of any public transport system is to connect people to economic opportunities, regardless of the area where people reside. Accessibility analysis is the umbrella concept to measure the ease of reaching a destination, whether it is a park in one's neighborhood or a job 20 miles away. Accessibility requires an integrated view of transportation and land use since decisions made under each policy discipline will intrinsically affect the other. While mass rapid transit systems often do not reach the poorest areas in large cities, public transport agencies must provide efficient and quality feeder transport services in underserved areas. Oftentimes, in many cities in Latin America such as Medellin, Colombia, and La Paz, Bolivia, providing accessibility to underserved populations involves modes of transport such as aerial cable car transport, which allows connecting poorer neighborhoods in urban regions with hills.	2	2	1	0	1	0	1	2	2	1
105	Prioritize pedestrians and cyclists in traffic management	Transport systems should ensure safety to higher risk and vulnerable road users in modes such as walking and cycling through (1) traffic management strategies to control the amount of traffic on particular streets such as street layout, traffic routing, and traffic control devices; and (2) Traffic calming strategies specifically intended to reduce vehicle speeds and volumes. Traffic management and traffic calming are often critical components of pedestrian and bicycle planning. Traffic calming measures enhance the pedestrian environment and encourage cycling. The measures also reduce the need for special/ separated bike lanes.	0	1	0	0	2	0	1	1	2	2
106	Support truck platooning strategies	Truck platooning strategies utilize a lead truck driven by a human that is then linked to two or more vehicles. The lead vehicle can communicate and coordinate with other trucks, enabling them to travel in close sequence on highways. In the early stages of platooning, drivers would remain in each vehicle within the convoy to monitor the driving situation and assume control of the vehicle if needed. It requires skilled truck drivers and well-functioning, sophisticated semi-automated driving support systems. It also requires other road users to be aware of the use of platooning and be comfortable with sharing the road with the truck platoons. The truck platooning technology has multiple benefits: including energy savings through increased fuel efficiency, the potential for reduced highway congestion due to shorter following distance, and possible safety improvements from faster reaction times and supporting systems, such as air disc brakes	0	0	0	1	0	2	0	1	1	2

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107	Provide eco-driving training for truck drivers	Truck drivers should be trained on fuel-efficient driving techniques that can reduce fuel consumption. These techniques include: (1) accelerate gently, (2) maintain a steady speed, (3) anticipate traffic, (4) avoid high speeds, and (5) coast to decelerate	0	0	0	1	0	2	1	1	1	1
108	Develop online platforms for rural transport services	The rural transport system can benefit from online platforms for service hailing and other innovative services that improve the convenience, quality, efficiency, and price of freight and passenger services. A further option for improving the efficiency and competitiveness of transport services and rural logistics is to introduce a web-based text messaging platform to create a marketplace linking rural transport service users with service providers and to help streamline the rural logistics chain. Such platforms can automate the process of scheduling transport services, attract better fares as a result of increased competition, and simplify the tasks of consolidating loads and arranging storage. They could also be used to bypass inefficient transport services cartels. In some cases, the private sector is already providing such platforms (such as Logistimo in India) but in others, the government needs to attract suitable companies or encourage venture capital to finance relevant startups or expansion projects.	2	0	0	1	0	0	2	2	1	1
109	Implement ITS solutions for providing transport information	Countries should implement online platforms and other ITS solutions for providing information on traffic, routes, the occupancy rate in train parts, public transport, and transport mode options for both passengers and freight transport, to enable users to make informed decisions about what transport service to use, that is relevant to their own needs at the time of deciding to use a service. The information must be comprehensive, that is it must include all relevant transport options. It must be detailed, it must include all relevant attributes of the transport options such as route, cost, travel time, transfers or transshipments, etc. It must be current, that is it must be up-to-the-minute for all relevant transport options.	1	2	0	1	1	1	1	2	2	1
110	Conduct accessibility evaluation and mapping	Two related aspects are needed to support the development of good transport policies and plans: (1) availability of geospatial data, (2) application of accessibility metrics on the data. Knowledge of the geographic patterns of origins and destinations, as well as a good understanding of the locations within the geography, are the starting points for all transport analysis. Accessibility requires an integrated view of transportation and land use since decisions made under each policy discipline will intrinsically affect the other. Data on the topography, drainage, and land use must be collected systematically and comprehensively. These data should be available for storage, review, and manipulation by various analytical tools. Such tools include statistical analysis packages and geographic information systems (GIS) and their associated databases. These data should be combined with current and historical information on climate, weather, ecology, demographics, and socio-economics.	1	2	1	1	0	0	1	1	1	1
111	Implement mobility as a service package	Implement integrated packages combining different services and platforms. Through this integration, transport moves away from its pure function of taking people and goods from A to B on a specific mode of transport and shifts to mobility solutions ie Mobility as a Service (MaaS). MaaS is possible through sharing arrangements, digitalization of services, Intelligent Transport Systems (ITS), mobile applications, autonomous vehicles, and better vehicle and train propulsion technologies. However, their development must bear in mind privacy and how to analyze data responsibly to support sustainable transport policy goals.	0	2	0	1	0	0	2	1	1	0
112	Introduce pedestrian and bicycle means of delivery	A new planning paradigm represents a progression from traffic-oriented to mobility-oriented, and then to accessibility-oriented planning. Accessibility-oriented planning considers active and public transport improvements and roadway expansion that privileges more efficient modes, mobility substitutes such as telework and delivery services. In this new paradigm, technological and system innovations that may impact freight systems include "last-mile" delivery options, such as electric trucks and delivery vehicles (including two/three-wheelers), pedestrian, and bicycle means of delivery.	0	1	0	0	0	1	1	1	1	0

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113	Adopt best practices for train driving and timetabling	The energy consumption of trains is highly efficient due to the low friction between steel wheels and rails, although the efficiency is also influenced largely by the driving strategy applied and the scheduled running times in the timetable. Optimal energy-efficient driving strategies can reduce operating costs significantly and contribute to a further increase in the sustainability of railway transportation. Therefore, the railway sector should adopt train driving and timetabling practices, such as eco-driving, automatic train operations, real-time driver advisory systems, synchronization of acceleration and braking.	0	0	0	0	0	1	1	1	1	1
114	Implement railway electrical smart grids	The development of next-generation electrical smart grids (ESGs) has been one of the priorities for railway transport. An ESG consists of the integration of information technologies into the electrical system to improve its controllability. In traditional power systems, the control has been carried out only by the power plants and some elements of the grid, whereas, in the next-generation smart grids, most of the elements can respond to control orders from the system operator. Because of this improved controllability, ESG technologies promise a significant improvement in the capacity utilization, the reliability of the system, and the energy efficiency of the grid.	0	0	0	0	0	1	1	1	1	1
115	Invest in rail sector digitalization	Railways are in the midst of a profound transformation, driven by emerging digital technologies like 5G, big data, the Internet of Things, automation, artificial intelligence, and blockchain. Digital technology is disrupting all components of railway operations which include: control and signaling systems, improvement of train localization, advances in automation and self-diagnostic, adoption of autonomous trains, faster self-learning algorithms for more efficient dispatching, routing, and maintenance schedules, and smart monitoring and surveillance systems.	0	0	0	2	0	0	2	1	1	0
116	Integrate new mobility solutions (including autonomous vehicles, e-mobility and on-demand transportation) to existing transport	, Infrastructure is often lagging behind the full-fledged deployment of sustainable mobility market solutions. New mobility offers a chicken and egg paradox. For instance, the sale of electric vehicles (cars, vans, light-duty vehicles, and heavy trucks) will only increase if supported by a sufficient supply of infrastructure, while in return the offer of infrastructure will only emerge if there is a critical demand for Evs. The future infrastructure will have to combine classical infrastructure works with digital infrastructure. This equation profoundly alters the traditional mobility ecosystem. It also requires the acquisition of specific competencies to manage the growing assets.	1	2	0	1	0	1	1	2	2	1
Toolbox: Engineering and Technology / Thematic Area: Design and Deployment of Programs												
117	Adopt building back better principle for reconstruction	Natural disasters such as extreme weather conditions can, and do, affect any transport system. In all cases, asset and service providers are under pressure to re-establish transport services quickly after a disruption. Despite this time pressure, repairs or reconstruction after a disaster provides an opportunity to improve the quality of the transport asset or service by improving the design, the materials, the equipment, or the operation. A coordinated and participatory approach to the design and implementation of repairs or reconstruction can help make trade-offs between the rapid resumption of service compared to taking the time to do it better, and between the lowest short-run cost of repair compared to investing in a higher quality of infrastructure or service. It is more cost-effective in the long term to rebuild to a higher standard of resilience if existing transport infrastructure has been damaged.	0	0	0	1	0	1	1	1	1	1
118	Map the full extension of the road network	Countries should have complete and up-to-date knowledge of the location and condition of the road network to be able to manage their road network assets. This data must be collected systematically and comprehensively. These data should be available for storage, review, and manipulation by various analytical tools. Such tools include statistical analysis packages and geographic information systems (GIS) and associated databases, such as OpenStreetMap (OSM). Once data is available the practices of asset management can be applied to the road network.	2	0	0	1	0	0	0	1	1	2

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119	Identify risks and vulnerabilities to extreme weather events	Transport infrastructure is likely to be impacted by extreme weather in the long term. More intense future weather conditions could lead to considerable disruptions and losses in terms of both finance and productive time. Also, weather-related damage to transport infrastructure can have strong safety implications, such as the increase in vehicle crashes on roads in worse conditions. Transportation systems have largely been designed and operated for historical climate conditions that are now often exceeded. The long-term reliability and functioning of transportation systems will increasingly need to consider and plan for climate change and extreme weather events.	1	0	0	2	0	1	1	2	2	1
120	Monitor weather events and develop warning systems	The inherent uncertainty linked to climate change makes it particularly difficult - if not impossible - to have a one-time foolproof solution; hence the need to conduct systematic monitoring and constantly upgrade and adapt time monitoring of the asset condition, and early warning systems in case of special weather events. The efficiency of such plans also highly depends on good communication and dissemination to the public, to ensure citizens are aware of the different transport alternatives and are thus better prepared for special weather events.	1	0	0	1	1	1	1	1	1	0
121	Deploy road safety cameras	Traffic enforcement cameras aim to provide a safe environment for all road users. Road safety cameras are an important tool to monitor the condition of the road and enforce traffic violations. More specifically, cameras could monitor traffic, capture red-light violations, speeding, tool collection, unauthorized use of a bus lane, recording vehicles inside congestion charge areas, among others. Cameras are essential for speed management, and therefore are one of the most effective tools for contributing to behavior change in the fight against deaths and injuries from collisions.	0	1	0	0	2	0	1	2	2	1
122	Promote driver assistance technologies	A vast number of vehicle crashes are tied to human error. New driver assistance technologies hold the potential to prevent road crashes and save thousands of lives every year. Some driver assistance systems are designed to warn the driver when there is a risk of a crash, while others are designed to take action to actively avoid a crash, for example, blind-spot detection and braking systems.	0	0	0	0	2	0	2	1	1	0
123	Ensure adequate post-crash intervention	Post-crash care deals with the rescue, treatment, and rehabilitation of crash victims. The aim is for efficient emergency notification, fast transport of qualified medical personnel, correct diagnosis at the scene, stabilization of the patient, prompt transport to point of treatment, quality emergency room, and trauma care, and extensive rehabilitation services to reduce the severity of the injury and its consequences.	1	1	0	0	2	0	1	2	2	2
124	Support data sharing programs and platforms	All transport service providers, whether government or private sector, collect operational and transaction data in the course of providing their services. Additionally, transport data are collected by governments, academics, NGOs for a variety of purposes. Data and data sets in isolation or that are difficult to access or manipulate are much less valuable as a resource than data that are accessible and easy to use. Unlocking the full potential of data requires common standards for data collection, data storage, and retrieval. Moreover, governments and other organizations need to establish frameworks and promote data sharing programs and platforms across different sectors to exchange data relevant to transport policy, such as data collaboratives, data pooling, research partnerships, among others. In such programs, participants from public and private sectors companies share their data to create public value. The develo of a sound policy framework to enable data sharing between public and private sectors can help achieve sustainable mobility goals and ultimately facilitate the decarbonization of transport.	1	1	1	1	1	1	1	1	1	0

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125	Provide incentives to increase car occupancy	Increasing car occupancy is part of efficient roadway management. Roadway management uses regulations, space allocation amendment pricing to favor higher value travel and space-efficient modes, reflecting a sustainable transport hierarchy. In most cases, prioritization tends to benefit commercial travel, including freight and service vehicles, buses, and business travel because they have high travel time values and support economic activity. Heavy vehicles (trucks and buses) impose large congestion, road wear, accident, and pollution costs, so efficient freight transport can reduce externalities. Favoring High Occupant Vehicles (HOVs) increases travelers' incentive to use these modes, which increases system efficiency and benefits, disadvantaged groups. As a result, transport prioritization and management increase system efficiency and equity, providing many benefits.	0	1	0	1	0	2	0	1	1	2
126	Provide sustainable alternatives for commuting trips	Countries should adopt measures at the place of employment that promote sustainable transport. Sustainable mobility options for employees, such as employer-sponsored transport programs, carpooling schemes, and public transport commuter benefits can help promote the use of higher value travel and space-efficient modes. Implementing sustainable mobility programs through a place of employment has the benefits of (1) reaching a collection of people with a common transportation goal which allows specific targeting of the program to a common need, (2) financial incentives can be bundled with remuneration, (3) service providers benefit from having a collection of passengers and possibly with coordinated trip arrival and departure times.	0	1	1	1	0	1	1	1	0	0
127	Implement telecommuting policies	Policies that allow flexible work schedules and telecommuting, such as work from home schemes, help avoid non-essential trips and reduce total transport system demand. Part of the rise in telecommuting stems from employers' changing attitudes and the increase in jobs that can be done outside an office. Tech-oriented occupations ideal for working remotely have grown, far exceeding job gains in manufacturing and other industries less conducive to it. Advancements in teleconferencing, mobile phones, and the increasing availability of high-speed internet have also played a role in gains over the long term. For transportation systems, the most promising outcome of telecommuting is the removal of cars from the road and reduced congestion.	0	1	0	1	1	1	2	1	1	0
128	Support freight parcel standardization and containerization	Industry and governments should support corporate initiatives to standardize freight parcels and promote containerization, facilitating intermodal integration. There are numerous benefits of having common, widely adopted, shipping parcels, pallets, and containers container standards. The use of the same basic sizes of containers across the globe has lessened the problems caused by incompatible rail gauge sizes in different countries. The use of container trains makes transshipment between different trains of different gauges easier. The use of container trains in countries with broad or narrow rail gauges makes transshipment between different trains of different gauges easier.	0	0	0	1	0	1	2	2	1	1
129	Develop vehicle rental platforms for different types of use	Cities should create agreements between the private sector, NGOs, and other stakeholders to promote better use of sustainable transport through shared mobility. They should (1) provide effective shared car and bicycle-sharing systems as an alternative to vehicle ownership and, (2) promote the use of vehicles adapted to daily needs—small battery electric vehicles (BEVs) for daily trips—and offer alternate renting solutions for exceptional journeys, that are range-extender or longer BEVs holidays.	0	1	0	2	0	2	1	1	1	0
Toolbox: Engineering and Technology / Thematic Area: Asset Management												
130	Develop asset management standards and plans	Governments should ensure that the practices of good asset management, preservation, and maintenance are applied to all transport infrastructure over their life cycle, whether publicly or privately owned. This requires the following four actions. (1) create and continuously update management standards and plans, (2) promote the application of management standards by adopting mode-specific legislation and regulatory law and establishing mode-specific regulatory bodies, (3) make available and maintain complete transport networks to transport service providers that optimize supply, demand, and service availability, and (4) provide active oversight of the asset management industry.	1	1	0	2	1	0	1	2	2	1

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131	Establish approaches to feeder road asset management	Establish reliable approaches to manage assets of feeder roads. Involve communities to perform routine maintenance in rural paths and roads, where feasible, and contractors to periodically maintain these assets, based on reliability, availability, maintainability, and safety (RAMS) approach	2	0	0	1	1	0	0	1	2	2
132	Set up audits for construction design and safety	Countries should provide active oversight of the construction industry. This includes setting up independent audits of design and safety before construction begins, and audits of asset condition upon completion of construction, to ensure the quality and improve the functioning of the construction industry. Countries should also provide active oversight of the asset management industry. This includes reviewing the quality of infrastructure asset management practices against the established standards. Governments or regulators should publicly report on asset management outcomes.	1	1	0	2	0	0	1	1	1	1
133	Audit the usability and safety of public transport for women	There are often unintended safety and security consequences of transport projects on women and girls. The government or a public transport agency can create safer public transport by performing audits that generate policy recommendations about designated transport waiting areas, stations, assault prevention programs, and better safety policies and practices in vehicles. Geo-referenced data on the perception of personal safety for women and girls are used to design and implement interventions in mass public transport and public spaces.	0	0	2	0	1	0	0	1	1	1
Toolbox: Engineering and Technology / Thematic Area: Safeguards												
134	Ensure women are not marginalized during resettlements	Large transport projects can divide existing communities, creating new physical barriers to access that affect women and children more than men. Resettlement may result in preferred markets, jobs, or employment opportunities, children's schools or sports facilities may now be less accessible, exacerbating female time poverty. For example, access may entail a longer walk or a climb up or downstairs via a passenger overhead bridge—daunting prospects to a time-poor, low-income woman traveling with shopping and young children. Countries should ensure that women can access employment opportunities equally during the construction period as well as benefit from the final results.	0	0	2	0	0	0	1	1	1	1
135	Ensure project-induced resettlement is conducted fairly	Countries should design consistent and coherent safeguard policies on the environment, involuntary resettlement, and indigenous peoples that comprehensively address environmental and social impacts and risks. The policies should aim to (1) promote sustainability of project outcomes by protecting the environment and people from projects' potential adverse impacts by avoiding adverse impacts of projects on the environment and affected people, (2) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible; and (3) help to strengthen the safeguard systems and develop the capacity to manage environmental and social risks.	1	1	1	0	0	0	1	1	2	2
136	Comply with gender-based violence prevention practices	The development and operations of large transport infrastructure projects can alter the economic and social fabric of the communities surrounding these investments which increase the risk of or compound risk factors that contribute to Gender-Based Violence (GBV). It is therefore critical for governments to take preventative and mitigation measures. Following are some actions that can be taken in this regard: (1) conduct a GBV risk assessment before development to mitigate and minimize such risks, (2) require contractors to commit to an agreed code of conduct that should be applied to employees and subcontractors, ensuring compliance with gender-based-violence prevention and response practices, (3) engage the local community throughout the lifecycle of the project to create awareness about GBV risks, and (4) develop response mechanisms in case of a GBV incident.	1	0	2	0	0	0	0	1	1	2
137	Mitigate the impact of transport on ecosystems and biodiversity	The potential for adverse impacts on the environment from building and operating the transport system has long been recognized. The ways of dealing with this issue have evolved over the last few decades as our understanding of the complexity of environmental issues has improved. Countries should develop and use policies to manage and mitigate potentially adverse environmental impacts of transport projects on ecosystems and biodiversity.	0	0	2	0	0	0	1	1	1	1

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Toolbox: Economics and Finance												
Toolbox: Economics and Finance/ Thematic Area: Project or Program Cycle												
138	Evaluate long-term transport infrastructure needs	The infrastructure finance needs of transport must be balanced with the long-run infrastructure needs of other economic sectors such as agriculture, education, and health. The long-run financial needs of the transport system can be best understood and met by adopting a strategic policy perspective on finance, pricing, and subsidy policy by mode; including revenue sources and the role of the public sector, the private sector, and public-private partnerships (PPPs) - separately for freight transport and passenger transport. Such strategic initiatives must evaluate long-run infrastructure finance needs, including any existing backlog of deferred maintenance(the "infrastructure gap"). The evaluation of infrastructure finance needs must be coordinated with the development of the financing policy framework. Examples include the application of sustainable, innovative, financing, and guarantee schemes for asset creation, or asset use charges to allow for the return on investments. Price is a signal for both demand and supply behavior. It can be used to match demand and supply and so ensure allocative efficiency.	0	0	0	2	1	0	1	2	2	1
139	Use a robust framework for project prioritization	The investment evaluation framework used to decide the allocation of public infrastructure funds should be applied to all modes of freight and passenger transport, using economic and financial life-cycle evaluations and network-based demand estimates. The core of the evaluation framework will be a modern and comprehensive cost-benefit analysis that will incorporate quantifiable social and environmental considerations. The framework applies to all public spending decisions: funding for asset creation and management and funding for service provision. The framework considers current deficiencies and forecast demand and is informed by the finance, pricing, and subsidy policy, land policy, and urban transport policy. The framework should also consider (1) the ultimate level of service is being designed for, (2) possible alternative investments and innovations, (3) broad social costs and externalities including environmental - air, water, soil, and noise pollution; economic - the cost of congestion; and overall competitiveness - including the long run creation of, and access to, employment. It must evaluate risks, including the possible future impacts of climate change. It should ensure that proposals have a good match between demand and supply to prevent inefficiency from the underutilization of the asset, or unmet demand if the asset is inadequate to need.	1	1	0	2	1	0	1	2	2	1
140	Establish selection criteria for feeder roads projects	Rural access network planning and robust project selection are necessary elements of improved rural access. The government should establish a set of project selection criteria that is closely aligned with the overall objective of the national rural access policy. The criteria should reflect the views and priorities of the rural communities to be served. If there is a large gap in rural access and the policy prioritizes the early achievement of universal rural access, greater emphasis will initially be given to small investments in spot improvements to provide basic access, followed later by an increased emphasis on more costly investments in rural access networks. Criteria may cover minimum settlement size, eligible types of investment in each of the main categories of rural access improvement (including basic access, motorcycle trails, low-volume rural roads (LVRR), high-volume rural roads (HVRR)). The criteria should include an economic viability threshold, special provisions to support projects serving very poor and vulnerable groups, safeguarding of environmental and social impacts, and the commitment required on maintenance financing. An economic cost-benefit analysis should be used to determine if the project is cost-effective and if it project meets a minimum level of economic internal rate of return (EIRR). The analysis should take into account estimated investment and maintenance costs and economic benefits over the life of the project and it should be adjusted depending on the project type.	2	0	1	1	0	0	0	0	1	2

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141	Establish performance monitoring and evaluation schemes	Promoting an institutional culture and practice of monitoring and evaluation (M&E) in the overall project cycle develops a logical and comprehensive approach and supports learning from experience. Several elements will contribute to this approach: (1) set up a program of independent audits of design and safety before construction begins, and audits of asset condition upon completion of construction, to ensure quality and improve the functioning, (2) review the outcomes of the components of the transport system periodically or at appropriate milestones and adjust accordingly, (3) establish mode-specific regulatory bodies to monitor competition, access, service quality, tariffs, and safety among infrastructure asset managers and transport service providers and establish standards for asset management and services quality practices, (4) improve guidelines on the planning, design, implementation, measurement, monitoring, and evaluation, to better reflect male and female user profiles to evaluate the gender benefits or disbenefits systematically.	1	1	1	1	1	1	1	1	1	1
142	Conduct impact evaluation studies	Advances in data and technology have created new opportunities to work on the evaluation of large infrastructure investments. To overcome the limitations of traditional M&E, the development community is increasingly turning to impact evaluation, an alternative approach whose methods more directly address the issue of causality. The expected benefits include: informing project delivery during design and implementation, documenting the effects of policy and investment interventions, prioritizing and filling knowledge gaps in the sector, and improving the evidence base for making decisions on transport investments. The government should consider the impact of transport infrastructure projects on economic growth and employment, and consider differentiated impacts on women.	1	1	1	1	1	1	1	1	1	1
143	Implement transport projects on time and on budget	Delivering transport projects on time and on a budget is a complex issue requiring several elements to be optimized: (1) government must specify good projects that are well planned and well designed, (2) inter-governmental functions must work well to plan, finance and support implementation of projects, (3) the construction sector must be able to supply quality construction on time and budget, and (4) public or private actors that are commissioning projects must be able to procure and project manage complex multi-year projects. These should be complemented by (i) coordination and exchange of ideas across the national government to ensure broad and multi-sector issues are well-considered between transport and other sectors, (ii) minimized fragmentation of the legislative framework, and ensure legal certainty for asset creation and maintenance, (iii) good intergovernmental relations with local government and improved planning and administration among different jurisdictions, (iv) availability of information and data to support policymaking, (v) enhanced local capacity and coordination, (vi) institutional strengthening for local actors to help ensure the appropriate management of contracts, oversight of operations, and successful integration of local systems and services, (vii) creation of harmonized, acceptable and up-to-date construction standards and regulations for assets, and (viii) provision of active oversight of the construction industry.	0	0	0	1	0	0	1	1	1	2
Toolbox: Economics and Finance / Thematic Area: Allocation of Public Funds												
144	Require projects to meet cost-effectiveness thresholds	Decisions on spending public funds on transport investments need to be supported by economic analysis. Governments should require transport projects to meet an economic viability threshold based on a cost-effectiveness comparison, cost-benefit analysis, and an estimation of the economic internal rate of return (EIRR). Investments need to be capable of producing favorable socio-economic returns; otherwise, they may displace other more productive investments and become a financial burden with a higher likelihood that the assets created will not be well maintained. If a proposed project cannot meet the threshold, alternative types of improvement should be considered, or the project should be deferred until it can meet the economic viability threshold.	1	1	0	2	0	0	1	2	2	2

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145	Allocate funding for transport safety interventions	Allocate funding and other resources for safety interventions on a sustainable basis, using a rational evaluation and programming framework. While some progress is evident in-country management systems and results achieved in low- and middle-income countries, the findings of the global status reports, road safety management capacity reviews, and assessments indicate that insufficient progress is being made in establishing appropriate road safety management. Many lower-middle-income countries can be characterized by: (1) missing focus on results, (2) ineffective coordination arrangements between sectors and underfunding since the road safety budget is a small budget line in the transport budget, (3) weak supporting legislation and ineffective and fragmented road safety interventions that are not based on evidence and, (4) poorly targeted promotional efforts, and ill-developed monitoring and evaluation systems. Embedding the Safe System approach requires (i) specific capacity building at the global, regional, and country-level to create the resources and tools necessary to target initiatives on a scale capable of reducing road deaths and injuries significantly and sustainably, and (ii) knowledge transfer at regional and national levels to ensure current guidance on critical safety issues and available tools. While the cost-benefit analysis may not always be the best tool for determining road safety priorities, many interventions demonstrate very high benefits to costs. For example, high-visibility safety policing combined with social marketing initiatives to reduce drinking and driving, and speeding, increased use of seat belts; investments in safer roads; and vehicle safety initiatives.	0	0	0	0	2	0	2	2	2	2
146	Implement an international taxonomy for green investments	Some overarching actions by governments are essential in creating a policy framework conducive to sustainable transport. For instance, a clarified taxonomy for sustainable and green investment can define a shared understanding of those investments, including mobility projects, that can be labeled green and those that cannot. A taxonomy on green and sustainable investments will guide companies and investors by creating a level playing field for so-called “green” financial products. A well-designed taxonomy will contribute to establishing a common language for Sustainable Mobility Finance and address the current communication gap between investors and companies. It will provide greater clarity to the markets on how to make an impactful investment in a sustainable future for the planet and our businesses.	0	0	0	0	0	2	2	2	1	1
Toolbox: Economics and Finance / Thematic Area: Fiscal and Financial Measures												
147	Enable municipal revenue through tax and bonds	Raising local taxes and fees and spending public money responsibly requires good governance, good institutional and technical capacity, and good public engagement. To finance capital projects, state and local governments may be allowed to issue bonds that could be either general obligation bonds secured by general tax revenue or revenue bonds secured by revenue from the project the bonds will finance. States and municipalities may also be allowed to utilize alternative sources of revenue to pay for transport, including tolls, parking fees, and vehicle registration fees, congestions fees, among others.	0	2	0	1	0	0	1	2	1	0
148	Apply innovative solutions financing for asset creation	The long-run needs of the transport system for asset creation can be supported by adopting innovative finance solutions. Innovative financing refers to various non-traditional mechanisms to raise additional funds for transport infrastructure through "innovative" finance such as micro-contributions, taxes, public-private partnerships, and market-based financial transactions. This may include tax-increment financing, land value capture, tolls, and other user fees, carbon tax, among others. Effective implementation of innovative financing requires good governance, good institutional and technical capacity, and good public engagement. Governments should adopt strategic policy perspectives on finance, pricing, and subsidy policy by mode; including revenue sources and the role of the public sector, the private sector, and public-private partnerships (PPPs) — separately for freight and passenger transport. Because infrastructure finance is tightly linked with the choice of price, consistency between pricing and financing policies is essential.	1	1	0	2	0	0	1	1	1	0

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149	Set user fees to support transport infrastructure funding	Pricing mechanisms in the form of user fees are a valuable revenue source for infrastructure and services. Fees are useful to raise revenue ratio demand. Fees may be specified differently for freight and personal travel for rural and inter-city travel compared to urban travel. Decisions should be made on the level of the fee, the structure of the fee, and the use of the revenue raised. User fees can be structured in a variety of ways: by distance, by weight, by distance and weight, by the time of day, by season, etc. The choice of fees and fee structure should be informed by overall policies related to infrastructure finance, competition, and local conditions. Given the level of uncertainty involved, user fees should be reviewed after some time; and could be revised up or down depending on their impact. The fee collection and revenue administration mechanisms can support better planning through user data but need to be balanced against the protection of personal information. Fee collection mechanisms can be the starting point for service integration in urban settings.	1	1	0	2	1	0	2	2	1	1
150	Mobilize public and private capital for transport finance	Transport systems around the world, now and in the future, need substantial amounts of long-run financial resources to build new capacity and rehabilitate existing capacity, using modern climate-adaptive standards. This need creates an opportunity to use this demand for public and private capital for transport finance, encourage more efficient construction, maintenance, and operations through the use of Public-Private Partnerships (PPPs) to improve sector efficiency when appropriate, and help bridge the transport infrastructure gap. PPPs agreements allow private companies to take on traditionally public roles in transport projects while keeping the public sector ultimately accountable for a project and the overall service to the public. In PPPs, a government agency typically contracts with a private company to renovate, build, operate, maintain, manage or finance a facility. PPPs have been shown to reduce upfront public costs through accelerated or more efficient project delivery. PPPs don't create new money but instead leverage private sector financial and other resources to develop infrastructure. In the end, a source of revenue such as tolls or other public revenue still is required to pay back the private investment.	1	1	0	2	1	0	2	2	2	1
151	Use land value capture schemes	Use land value capture schemes to increase funding for urban transport systems, capturing the increase in property value around new transport infrastructure development. Land adjacent to transport improvements will see its value increase from the greater access made available by the transport improvement. It is reasonable to tax or otherwise capture some of this increase in value. General property taxation can accomplish this if the assessed value of the properties is updated regularly from time to time. More focused approaches include an additional tax levy on specified geography adjacent to the transport improvement. Various kinds of local revenue arrangements related to transport and land development are possible. All land value capture schemes require strong land ownership and regulation regime.	0	2	0	1	0	0	2	1	0	0
152	Prioritize financial products for sustainable investment	Governments should develop and promote financial products for sustainable development. This requires good governance, good institutional and regulatory capacity, and good public engagement. The government should reinforce blended finance models both for local multistakeholder projects and large projects that leverage revenue sources from the public sector, private sector, public-private partnerships (PPPs), and international financial institutions (IFIs). Blended finance offers the possibility to scale up to commercial financing for developing countries and to channel such financing toward investments with development impact.	0	0	0	1	0	1	1	1	1	1
153	Support sustainable mobility impact funds	Governments should define regulatory frameworks to facilitate the creation of impact funds targeting sustainable mobility including small-scale projects led by start-ups or NGOs. Governments should also support existing funds. The impact funds should engage in impact investments aiming to generate specific beneficial social or environmental effects in addition to financial gains. Impact investments may take the form of numerous asset classes and may result in many specific outcomes. The point of impact investing is to use money and investment capital for positive social results.	0	0	0	1	0	1	1	1	1	1

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Toolbox: Economics and Finance / Thematic Area: Pricing for Efficiency and Inclusion												
154	Implement fuel taxes and phase out fuel subsidies	Many countries subsidize vehicle fuels or charge less than international market prices or production costs. Governments should implement and increase fuel taxes while phasing out fossil fuel subsidies. This provides a strong incentive for energy efficiency improvement in the transport system. The revenues can be used to compensate for the impact on the poor, as well as for investments in public transport. Further policies would ensure that fuel prices are raised to internalize external costs, including lifecycle greenhouse gas emissions, air pollution, and other impacts. Reducing these subsidies increases efficiency and equity.	0	1	0	1	0	2	1	2	2	1
155	Use congestion charging or pay-as-you-drive schemes	Private vehicle use generates a series of externalities, which include air pollution, congestion, road danger, and noise. Often, private motorists do not pay for any of the social costs they generate, only assuming the direct costs of driving a vehicle. Implementing road user charging schemes helps make visible the true cost of using a private vehicle, internalize the social costs, as well as act as disincentives to use private vehicles. The revenue gathered can be used to improve conditions for pedestrians, cyclists, and public transport users, thus making these modes more attractive.	0	2	0	1	0	1	2	1	0	0
156	Implement or increase vehicle registration fees	Countries should implement or increase vehicle registration fees as a part of their transport policy framework. Revenue gathered can be used to support road maintenance funding. Vehicle registration fees act as disincentives for purchasing a vehicle. Since lower-income households tend to own fewer vehicles, this tends to be progressive with respect to income. Efficient and clean vehicle incentives can be based on charging higher taxes on the purchase or licensing of higher-pollution vehicles and fuels and offering discounts and rebates on cleaner vehicles and fuels.	0	1	0	1	1	1	1	1	1	2
157	Apply market-based parking pricing	Countries should apply pricing to parking as a part of their transport policy framework. Parking is an effective mechanism to internalize costs associated with driving, as well as reduce incentives for using private vehicles. Establishing an adequate parking supply, based on market prices, eliminates hidden subsidies for driving and can be a source of revenue for investing in more sustainable transport modes. Adequate supply also reduces the costs of building housing and reduces pressure on overland supply, leaving valuable land to be used for different purposes, such as housing, retail, or public space. Parking pricing should be implemented such that it encourages shopping and other economic activities while discouraging travel during the peak.	0	1	0	1	0	2	1	2	1	1
158	Promote green port fees	Countries should implement differentiated port fees, dues, or incentives based on ship emissions (e.g. NOX, SOX, CO2), pollutants, waste collection, or "green" performance features of the ship calling the port, e.g. alternative fuels like LNG, or use of the OPS (onshore power supply). Green port fees and incentives are market-based tools for addressing the environmental impact of the shipping industry. Other less common green solutions include incentives to reduce speed, green procurement, etc. These important policy instruments should be designed to address negative environmental impacts such as air pollution, greenhouse gases, emissions to water, noise, and other sustainability issues. The main aim of environmentally differentiated port fees is to charge lower fees for less-polluting ships which means that the most "green" and clean vessels get either fixed or proportional deductions on the regular port fee. Ports apply various charging schemes of discounts and rebates according to the type, or size of the ship and its environmentally friendly technical performance.	0	0	0	1	0	2	1	1	2	2

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			Unv. Rural Access	Unv. Urban Access	Gender	Efficiency	Safety	Green Mobility	A: Closest to targets	B: somewhat close to targets	C: somewhat far from targets	D: Farthest from targets
159	Provide financial incentives to reduce environmental impact	Countries should use financial incentives as part of their transport policy framework. These strategies include: (1) eliminating and reducing fuel subsidies, (2) implementing fuel taxes, (3) Providing efficient and clean vehicle incentives such as charging higher taxes on the purchase or licensing of higher-pollution vehicles and fuels and offering discounts and rebates on cleaner vehicles and fuels, (4) implementing efficient road pricing including road tolls or vehicle-travel fees, (5) applying efficient pricing to municipal parking and encourage private property owners to charge for parking (revenue from parking fees should repay all costs, including the equivalent of rents on land devoted to parking facilities, landlords should unbundle parking from building space, provide cash benefits equivalent to parking subsidies to people who don't drive, charge daily rather than monthly or annual parking fees, so motorists have incentives to use alternative modes part-time.), (6) implementing pay-as-you-drive pricing such that vehicle insurance and registration fees are based directly on vehicle-kilometers driven to give motorists an incentive to reduce vehicle travel.	0	1	0	1	0	2	1	2	2	1
160	Make public transport fares affordable for the poor	Because transport is needed by everyone, every day, it must be available to everyone, every day, including poor or vulnerable users. Governments must develop support for access for low-income or vulnerable users of transport services. This includes concessionary fares, other fare discounts, and the integration of fares into the broader social welfare framework. The objective of this policy is to improve the welfare of the poorest, therefore demand-side incentives are the most efficient means to channel subsidies. For the implementation of this measure, significant effort should be devoted to improving the targeting properties of public urban transport subsidies using means-testing procedures to ensure a more pro-poor incidence of subsidies.	1	2	1	1	1	1	1	2	2	2
161	Ensure integrated fare payment across all modes	Several initiatives and innovations have emerged making it possible to have integrated fare or payment systems: (1) economic strategies use transport prices to encourage efficiency and equity, (2) new technologies and mobile applications have allowed the development of integrated service payment systems that can be combined with navigation systems to give users a single point-of-contact for transport needs, and (3) integrated approaches for road, parking, and transit fares are being developed into convenient payment systems. This integrated technological implementation requires coordinated planning between public agencies, private companies, and users. Government leadership ensures efficient integration of services between different mobility service providers and modes and incorporates features such as payment and problem reporting. This integration increases user convenience and system efficiency, which supports the use of more efficient transport modes such as bike-sharing, ridesharing, and public transit. However, the development of integrated payment systems must bear in mind privacy and how to analyze data responsibly in order to support sustainable transport policy goals	1	1	1	0	1	0	1	2	1	1
Toolbox: Economics and Finance / Thematic Area: Innovation Policy and Enhancement												
162	Provide education programs for innovation	Countries should ensure training and education for innovation are provided with good government and private sector support and cooperation. The following outlines some of the main considerations: (1) governments should support the development of human resources in transport example through the provision of funding for technical training for the current and future transport workforce, (2) government and private sector should foster a culture of learning from experience, (3) use economic incentives to promote innovation, such as support for dedicated training and education programs, and subsidies or tax breaks to encourage research and development, (4) countries should support information sharing and the diffusion of innovation across government, organizations, agencies, companies, civil society, and the education sector; encourage an open attitude towards improvement; and benchmark local practices against international standards, (5) countries should support technical innovation (civil or mechanical engineering, vehicle technology, instrumentation, and data transmission) while ensuring interoperability and harmonization.	0	0	1	1	0	0	1	1	1	1

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163	Support innovation through regulatory incentives	Innovation through regulatory incentives requires good government and private sector support and cooperation beginning with high-level policy and working through to "front-line" applications. The following outlines some of the main considerations include: (1) governments should encourage innovation in transport policy development and decision making and the use of economic instruments to foster innovation, (2) transport policies should counter the tendency of existing actors and incumbents to resist innovation and create conditions that encourage innovation and its deployment to existing systems, (3) government and private sector put in place an approach to regulation that supports innovation and review regulatory barriers to innovation,	0	0	0	2	0	1	1	2	1	1
164	Provide financial incentives to R&D and innovative products	Research and development (R&D) is a fundamental activity to develop new knowledge, new understanding, and new applications. R&D is done by governments, private companies, educational institutions (such as colleges and universities), and NGOs. It is important to develop R&D strategies to make the best use of resources and to promote sharing of knowledge. To support innovative products originating from R&D, subsidies, tax breaks, as well as reduced tariffs, should be considered for experimental or pilot projects. These incentives can include income or sales or property tax reductions for individuals or corporations; and temporary funding or funding for a specific initiative to encourage research and development and the supply of innovative products or services.	0	0	0	1	1	1	2	1	1	1
165	Support R&D to reduce environmental impacts	Promising but still immature low-emission technologies need significant research, development, and deployment support to improve technology and cover risk for early adopters. This includes research to optimize the life cycle of batteries for vehicle electrification, alternative fuels—sustainable biofuels, biogas, synthetic fuels, hydrogen—and intelligent transport systems (ITS). International research programs on new sea powertrains and vessel design are also required, focusing on ammonia, methanol, fuel cells, dual fuel, electricity or hybrid, wind, and solar, for example. Autonomous and semi-autonomous logistics systems could benefit from joint research programs while noting that potential implications for energy and emissions are ambiguous. Innovation should be encouraged in transport policy development and decision making and the use of economic instruments to foster innovation.	1	1	0	1	0	2	1	1	2	2
166	Support R&D to optimize the life cycle of vehicle batteries	Research and development (R&D) on vehicle batteries has made significant progress and now electric vehicles have become more affordable and lighter. In response to concerns about dependence on oil imports and climate change, the demand for electric vehicles, including hybrid electric vehicles (HEVs), plug-in hybrid electric vehicles (PHEVs), and battery electric vehicles (EVs), is increasing. Li-ion batteries will be critical to increasing electric vehicle marketability, due to their large energy storage capability. Accordingly, the demand for automotive Li-ion batteries is projected to grow significantly. Given the importance and projected growth of electric vehicles, the battery industry must identify the materials or processes within a battery's life cycle that are likely to pose the greatest impacts on both public health and the environment and evaluate the innovations in advanced Li-ion batteries for electric vehicles that may enhance battery performance. The industry must also assess the impacts associated with recycling the batteries after their useful life.	0	0	0	2	0	2	2	1	0	0
167	Develop a demand-driven research framework	It is important to incorporate a demand-driven research framework into R&D strategies to make use of the real-world situation and needs of the transport system's users. This includes both passenger and freight transport. Citizens and shippers are the end-users of mobility services for their transport and shipment, and the success of new solutions depends on the adoption (or not) by the end-user. The future of mobility will be based on demand-driven solutions, building on new technologies and digitalization. The end-user needs to be associated with the development of these solutions in collaborative ecosystems at the early stage of design and experimentation. Private companies, such as transport operators that are in direct contact with customers play an important part in this process.	0	0	0	1	0	1	2	1	0	0

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Toolbox: Communication												
Toolbox: Communication / Thematic Area: Consultation and Public Engagement												
168	Consult with stakeholders during the full project cycle	From the earliest stages, stakeholder involvement plays a critical role in the development and implementation of a transport policy and investment program. The government and private sector should consult extensively with stakeholders when assessing needs and formulating transport policy, regulations, projects, and programs, and should establish an overall framework for continuous shareholder consultation during implementation. This will help to ensure that the policy and program will address the main concerns of stakeholders; that stakeholders will have a sense of ownership over the plans, commitments, and assets being created; and will provide channels of communication for stakeholders to inform the central and local government of issues arising during implementation. Other key stakeholders are local communities, including poor and vulnerable groups, other transport users (such as wholesalers), transport service providers, the police, institutional stakeholders in the public and private sectors (including the national government, local government, transport agencies, funding institutions, transport services regulators, and training organizations), vehicle suppliers (freight and passenger, large and small scale, formal and informal) and suppliers of vehicle support services (manufacturers, importers, and retailers, mechanics, fuel suppliers), civil works contractors, and engineering consulting firms, professional associations, unions, and NGOs.	2	2	2	0	0	0	1	1	2	2
169	Use participatory planning methods	Participatory planning methods should be used to help communities propose interventions. Communities know best how present access limitations affect their economic activities (including agricultural production and marketing) and access to essential services (such as health and education). They can also provide important insights into how these limitations can be overcome, both through infrastructure investments and by tackling shortcomings in the provision of transport services and logistics. The local government should also coordinate with key sectors and development projects that may depend upon or influence the use of transport services by the community. If a major development project is planned, the approach to access and development should be closely integrated.	1	1	1	1	1	1	1	2	2	1
170	Ensure women's participation in consultation processes	To promote a more balanced and equitable transport system women need to be more involved in public consultation and decision making. Making transport more responsive to the needs of women requires that women's voices—and those of similar groups, such as transgender persons— are also represented at each step of the cycle of planning, design, and implementation. There are numerous roles for women to participate in at all levels; but this requires leadership and commitment by governments and institutions, the private sector, NGOs, and Civil Society. Gender must be specifically included in project design and planning and participatory planning methods to include the views /voices of local women. This must be followed by continuous consultation to ensure that the voices of women are upheld during pre-and post-project. Public consultations, especially those involving infrastructure projects, must allow women to 'meaningfully' participate, properly engage, and be heard in the process.	1	0	2	0	1	0	1	2	2	2
171	Promote public discussion on new mobility solutions	Government should develop a long-term vision for new mobility alternatives in connection with stakeholders and civil society, including NGOs, companies, and professional bodies, in tune with policy frameworks for green mobility. Public discussions must be observed in urban areas where new mobility solutions emerge rapidly. Free-floating bikes and scooters outpaced regulation in many cities and imposed a new business model, requiring public actors to adapt while maintaining their goals to promote modal shifts. In the development of regulations related to new mobility solutions, civil society must be involved and be consulted. Three Key Recommendations for Promoting Public Discussion on New Mobility Solutions include: (1) be solutions-driven, not only technology-driven, highlighting diverse user benefits, (2) engage end-users in the decision-making process and identify their demands and concerns, (3) Involve different public and private actors -as well as universities-from the energy and mobility sectors at the outset to ensure buy-in and higher success in enabling access to sustainable urban mobility.	1	1	1	1	1	1	1	1	0	0

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172	Ensure neutrality on technology related communication	New technologies and associated practices bring new policy challenges to the government to ensure fairness and encourage efficiency. In addition to consistency and flexibility, informed technological neutrality is essential to foster sound and fair competition in favor of sustainable mobility. By setting common rules for all actors, technology neutrality by policymakers is essential to provide a level playing field both within a single mode of transportation and between modes (ex: buses vs. trains vs. shipping). Policymakers should monitor technology activity to ensure that provision of selective information does not reduce competition. Policymakers should also strive, with the help of the private sector, to provide objective information on the advantages and disadvantages of each mobility solution to promote informed choices. With regards to green mobility and GHG emissions reduction, clear carbon pricing mechanisms at the regional or national level, taking into account the whole life cycle of products, providing effective tools to remain technology-neutral and avoid premature strategic choices, potentially leading to lock-in situations For sustainable mobility and transportation will no doubt include a set of various technologies and tailored solutions.	1	1	0	0	0	1	1	1	0	0
Toolbox: Communication / Thematic Area: Promotion Campaigns and Public Awareness												
173	Implement awareness and behavior change strategies	Governments must encourage behavioral change to support sustainable transport. Transport efficiency is increased when users - both travelers and shippers - make lifestyle choices and adopt behaviors that reinforce efficient results, either within the transport sector or in residential and work locations, including the purchase of transport-related goods - bicycles, motor vehicles, and energy-efficient trucks. Green mobility solutions require changes to the transport system but also the behavior of the participants in the system, service providers, and users. There is no path by which the triple win of long-term economic prosperity, social, and environmental sustainability can be achieved that does not involve fundamental changes in technology, behavior, and lifestyles that currently dominate global trends. Governments should implement awareness and behavior change (ABC) strategies to help shift attitudes toward sustainable modes, for example, public transport, walking, and cycling, complementing another engineering, legal, or economic measures.	1	1	1	0	1	1	2	1	1	1
174	Label products according to environmental performance	Information about products and services should include energy and environmental characteristics or levels for better-informed purchase decisions. Shippers, who choose carriers to ship their products, need to be enabled to better factor in aspects related to the environment and energy. This can be achieved through the development of green- freight labeling schemes that both shippers and carriers can join, to be rated on their environmental performance. This includes adopting fuel economy labels displayed on all cars and light trucks for sale, green freight labeling schemes for logistics service providers and eco-rating schemes that allow shippers to choose green freight practices, and labeling products based on their embedded energy use.	0	0	0	1	0	2	0	1	2	2

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175	Run campaigns to attract women to transport professions	To make the transport industry a more attractive workplace for women, and to eliminate the risk of gender inequality at work, government attention needs to be devoted to several areas of action: (1) remove legal and social barriers and address the gender pay gap; improve working conditions and contractual rights to be more family-friendly; and ensure social conditions and protections (health insurance and pension rights), and contractual rights to paternity and maternity leave include female needs which may include career breaks for family reasons, (2) develop public awareness campaigns to attract women to transport sector professions to break down stereotypes about jobs that are traditionally seen as masculine including operating heavy machinery, engineering, technical positions, and driving—planes, ships, trains, and road-based transport, (3) give gendered attention to health and safety in the workplace, (4) aspire to achieve a 30 percent representation of women in employment across all sectors (with a stretch goal of 50 percent) supported by actions to attract, recruit, and maintain more women in the sector, (5) Set quotas and targets for public and private sector decision-making positions, and initiate programs with incentives to stimulate change to help build the pipeline of high-caliber candidates for middle and senior positions at the national and local levels.	0	0	2	0	0	0	1	2	1	1
176	Implement anti-harassment campaigns in public transport	Sexual harassment toward women, whether they are walking on the streets, taking buses, or riding trains, is a major problem in both developed and developing countries. The fear of harassment in public spaces not only limits women's and girls' mobility but consequently limits their access to other services health and education as well as being an obstacle to their participation in the labor market. Governments should develop an evidence-based strategy for gender-sensitive, sustainable transport, to better address the differing mobility needs of women (and create disaggregated national mobility data sets) to set solid baselines. At the policy level, ensuring that laws and regulations include, protect, and respect women's needs are combined with protocols against sexual harassment and have legislation on harassment in public spaces.	1	2	2	0	0	0	1	1	2	2
177	Raise road safety awareness	Countries should ensure sustained communication as a way to promote and raise awareness of road safety as a core business for government and society. It should emphasize the shared responsibility for the delivery of road safety interventions to achieve results, with safe speeds at the core of the Safe System intervention strategy.	1	1	0	0	2	0	2	2	2	1
178	Make information publicly available on projects and policies	Public understanding and acceptance of transportation plans and investment strategies is a necessary condition for broad social license and political support. This acceptance needs to be long-lived and durable, to support the long duration of asset creation and lengthy asset management arrangements. Governments should describe the role of the transport system and its supporting policies to build general public support for investments, infrastructure management arrangements, and transport services. Making summary information as well as in-depth information available is critical. Regular media, social media, the web, and mobile phone applications should be included in disseminating information to the public. Governments should provide the basis for informed discussion by publishing the mode-specific legislation and regulatory laws, infrastructure construction standards, infrastructure asset management standards, procurement methods, and related educational materials. Governments should also publish transport pricing and subsidy policies, outlining the role of user fees and public financial support.	1	1	0	1	1	0	1	2	1	1

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179	Foster a security culture in public transport	Government should foster a security culture in the transport system to improve the efficiency and attractiveness of public transport, based on the psychological elements that make passengers feel secure while using buses, trains, and other modes of public transport. Improvements to personal security while getting to and using transport services will require a review of the national legal, regulatory, and governance frameworks that apply to personal security in public spaces and personal security while in a transport vehicle.	0	1	1	0	1	0	1	1	1	1
180	Increase awareness about the real cost of mobility	Governments should incorporate topics on sustainable mobility into formal and informal education in order to increase the population's awareness of the challenges of mobility (including externalities). Further, the government should raise the willingness to pay and use efficient, safe, and green transport services. Mobility service providers may also inform their customers of the carbon impact of their trips, sometimes allowing for comparison between different transport modes. The measure will enable companies/operators to raise awareness and help consumers better realize the impact of their individual mobility choices. It may be appropriate for regulators to monitor such activity to ensure that provision of selective information does not reduce competition among service providers.	0	0	0	1	0	2	2	2	1	1
Toolbox: Communication / Thematic Area: Knowledge Management and Dissemination of Best Practices												
181	Share knowledge on successes and best practices	An efficient, responsive, and innovative transport system is built on sharing of knowledge and best practices among all parts of the system. Participants should support information sharing and the diffusion of innovation across government, organizations, agencies, companies, civil society, and the education sector. An open attitude toward improvement should be encouraged. Local practices should be compared (benchmarked) against international standards. Evidence-based solutions will encourage: (i) resource-efficient standards; (ii) standards able to meet new challenges, including climate change; and (iii) linkages and synergies with technical developments in other areas which could lead to reductions in costs, and extend asset life cycles. All actors in the transport system should foster a culture of learning from experience.	1	1	1	1	1	1	1	1	1	1
182	Inform users about new sustainable solutions	Consumers must accept and adopt new technology and business models for sustainable mobility goals to reach their targets. For this, communication and education are instrumental to change behaviors. Consumers' lack of understanding and the overall cultural dimension can represent a true barrier to innovation. It affects individuals, citizens, and also companies—as key consumers of freight services—and local public authorities as actors in parts via public procurement. With their knowledge and their connection to the end-user, private actors have a key role to play alongside public actors in strengthening communication and education for all types of consumers.	1	1	0	0	0	1	1	1	1	1
Additional COVID-19 Policy Measures												
Toolbox: Regulatory and Institutional												
Thematic Area: International Agreements and Regulations												
183	Support cross-border trade of essential goods during crisis response	In a crisis event such as pandemics or war, frontiers between countries may close or waiting times can increase significantly due to tight border controls. However, truck drivers, seafarers, and aircrews need to continue to cross borders to keep supply chains operational. In the medium term, protectionist measures may undermine economies, as countries lose access to essential products in response to the crisis. Governments should refrain from introducing new barriers to trade and consider removing import tariffs and other taxes at the border on critical medical equipment and food. Some countries may choose to facilitate the movement of truck drivers by adopting multiple-entry or visa-free entry for truck drivers to increase the flexibility of cargo operations. Designating "green lane" border crossing points can help keep supply chains intact for essential goods, fast-tracking inland border crossing. Many countries can choose to redirect incoming passengers and trucks to specific ports and inland border crossing points with the capacity to handle high volumes while ensuring minimum contact.	1	1	0	2	0	0	1	1	1	2

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Thematic Area: Regulation of Transport Services												
184	Safeguard the health and safety of transport workers	During crisis response to events such as a global pandemic, keeping transport personnel safe is critical for maintaining essential services since teleworking is not an option for most transport workers. Transport workers must follow detailed guidance on the use of personal protective equipment, hygiene best practices, social distancing measures. Examples include installing special barriers in buses to help drivers and passengers maintain a physical distance and fitting vehicles with a transparent plastic barrier separating the driver and rider. Other lessons from the COVID-19 pandemic include tracking of transport workers' journeys and contacts, (video) monitoring of adherence to measures, providing training in correct sanitation practices, implementing social distancing also in communal staff spaces such as canteens, creating employee assistance and counseling programs to ensure practical help and strengthen mental resilience. These policy measures include protecting workers with the provision of latex gloves, hygiene, social distancing, testing, and quarantining.	1	1	1	1	0	0	1	1	1	1
185	Adopt sanitary protocols and reduce crowding in passenger transport	In crisis response to events such as pandemics, special protocols should be adopted to safeguard the health and security of transport services, including disinfection and distancing measures for passenger transit, as well as screening and quarantining measures for international travel. Passenger transport, including public transport and civil aviation, implies proximity and therefore risk of contagion. In public transport, measures should aim to dissuade non-essential travel while ensuring safe use and maximum support for health and other essential workers. Examples of these solutions include: (i) installing graphics and signs to represent the minimum preventive distance of 1.5 meters between each person, (ii) providing sanitation gel or hand sanitizer with dispensers, (iii) enhanced cleaning and sanitizing schedule for all types of transport, (iv) develop the capability to inform passengers about bus occupancy levels, (v) Limit the number of standing passengers, (vi) replace smaller vehicles with larger vehicles whenever possible, (vii) Requires masks on all public transport, among others.	2	1	1	1	0	0	2	2	2	2
186	Prepare contingency plans for the provision of lifeline mobility services for critical workers and emergency circumstances	The objectives of contingency plans should be to (i) ensure continuity of supply for all essential goods(for example food and fuel); (ii) maintain a lifeline network of public collection points (in the event of closure of commercial suppliers); (iii) maintain business continuity for essential goods; (iv) maintain lifeline operations at ports and associated marine services; (v) secure essential air services to allow for the arrival of key workers and lifeline imports of essential medical supplies and equipment, and (vi) prepare lifeline service by public transport agencies and operators. Other solutions to guarantee lifeline mobility services include providing special rates for essential workers, unhoused, or vulnerable individuals.	2	1	1	0	0	0	1	1	1	1
Thematic Area: Regulations for Data Collection, Share, and Use												
187	Use transport operator data to inform policy responses	App-based mobility companies and other data-driven businesses such as map and route planning services collect mobility data and have analytical capabilities that can support effective government decision-making. This may include on-demand routing for public transport based on passenger occupancy and demand, apps to provide information to users on alternative transport modes, and using the information to adjust the level of service of public transport. Another example is using the Global Navigation Satellite System (GNSS) to monitor and facilitate the free movement of freight, making it possible to reduce waiting times at border crossings.	2	2	1	2	1	1	1	1	1	1

Policy Number	Policy Measure	Policy Measure Description	"Impact Rating [0,1,2]"						Relevance by Country Group (level) [0, 1, 2]			
			Unv. Rural Access	Unv. Urban Access	Gender	Efficiency	Safety	Green Mobility	A: Closest to targets	B: somewhat close to targets	C: somewhat far from targets	D: Farthest from targets
Thematic Area: Capacity Building and Human Resource Development												
188	Set up support programs for transport workers affected during crisis response	During events such as global pandemics, natural disasters, war, or others, many transport workers may lose their livelihoods due to reduced demand or may see their income streams severely affected due to the same reasons. Financial compensations are needed for short-term emergency support for the loss of revenue or the loss of employment for transport workers during crisis response to events such as pandemics. These may include direct subsidies for owner-operators of transport, including taxi or truck drivers.	1	1	1	1	0	0	1	1	1	1
Toolbox: Engineering and Technology												
Thematic Area: Design and Deployment of Transport Services												
189	Activate capabilities of the transport sector in non-traditional ways during crisis response	When the transport sector is hindered from using its full resources to provide mobility, the slack can be harnessed in creative ways to overcome crises. For example, rail operators have converted old train carriages into rolling hospitals to distribute patients more evenly across the country. Likewise, automotive and aircraft manufacturers can reconfigure production lines to manufacture urgently needed medical equipment, sometimes in unconventional partnerships. Grounded airline staff with first responder qualifications can be slated to take over support roles in the health system. Autonomous vehicles can transport patients that need to be quarantined.	1	1	0	1	0	0	1	1	1	1
190	Leverage innovative forms of mobility during crisis response	Emerging transport innovations have important roles even if not yet mainstream and may be leveraged during crisis response. Automated vehicles and drones are among the current technology with the most potential. These are already used, if on a small scale, for delivering supplies to high-risk groups or transporting infected persons. Drones can also spray disinfectants, monitor social distancing behavior, and make public service announcements. These forms of mobility avoid public gathering at collection points/retailers. Easing regulations to quickly scale up or allow the most targeted use of transport innovations is worth considering. Other examples include new ways of contactless delivery using Transportation Networking Companies, for example, sending packages to family and friends and doing grocery shopping.	2	2	0	1	1	1	1	1	1	1
Thematic Area: Design and Deployment of Programs and Initiatives												
191	Support active modes as an alternative to motorized transport	Cycling and walking help keep citizens healthy and avoid the negative health effects of sedentary life, and should be prioritized to reduce the number of trips that are motorized. During a pandemic, cycling, and biking are important to prevent trips that were previously taken using public transport shift to automobiles and motorcycles. Cycling and walking should be encouraged as an alternative to sharing vehicles where the risk of contagion is high. For example, cities may decide to close streets for cars and dedicate them to walking and cycling in order to provide adequate space for social distancing. Bike-sharing systems may offer free rides to medical and other essential workers. Other solutions may include prolonged traffic light time for pedestrians and cyclists, construction of new bicycle lanes to guarantee social distancing, offering cycle training courses, promoting repair shops, and 'bike to school' incentives.	2	2	1	1	1	1	1	1	1	1
192	Implement smart and contactless fare collection systems	Smart and contactless fare collection systems, including smart cards, credit cards, and mobile phones, generate numerous benefits to public transport and other means of transport and help prevent human-to-human contact and the exchange of cash - which has been found to pose a significant risk harboring viruses during pandemics. Other contactless technologies that are helpful during pandemics include automated walk signals, suspension of onboard ticket sales, and contactless parcel delivery services.	2	1	0	1	0	0	1	2	2	1

Policy Number	Policy Measure	Policy Measure Description	"Impact Rating [0,1,2]"						Relevance by Country Group (level) [0, 1, 2]			
			Unv. Rural Access	Unv. Urban Access	Gender	Efficiency	Safety	Green Mobility	A: Closest to targets	B: somewhat close to targets	C: somewhat far from targets	D: Farthest from targets
Toolbox: Economics and Finance												
Thematic Area: Fiscal and Financial Measures												
193	Support the transport sector's financially sustainability during the crisis	In events such as pandemics or other shocks that affect demand, a drop in mobility can present an economic challenge to operators across all modes. Most aircraft can be grounded and airports can come to a standstill. In cities, formal and informal operators must reduce or discontinue service and may require quick financial relief. In this sense, fiscal packages can support hard-hit sectors, usually also transport. Sector-specific financial relief —for airlines and urban transport—can also be provided. State guarantees for bank loans, debt restructuring, employee salary grants, cash payments, and waived fees and payments may help in difficult financial situations. Subsidies need to be well-targeted and should not discriminate among operators. Services to regions struggling to maintain transport lifelines may require more attention. For road haulage operators, governments must ensure the provision of adequate supply as well as mothballing arrangements for vehicle fleets.	1	1	0	2	0	0	1	1	1	1
194	Finance labor-intensive transport investment to stimulate the economy during a crisis	Invest in shovel-ready labor-intensive transport construction as part of fiscal stimulus to create employment opportunities during economic recovery periods, with a focus on sustainable types of transport. Examples of labor-intensive construction that has large economic and employment multipliers include sidewalks, bike paths, complete streets, Bus Rapid Transit Corridors, passenger transfer terminals, vertical bus depots, park and ride facilities. During the recovery period, new infrastructure must be constructed while sustaining momentum on decarbonization, promoting sustainable projects.	0	0	0	2	0	1	1	1	1	1

APPENDIX A: List of Toolboxes and Thematic Areas

The table below shows toolboxes, thematic areas, and corresponding numbers of the policy measures.

Toolbox	Policy Measure Number	Thematic Area
Regulatory and Institutional	1-10	Plans and Strategies
	11-14	Institutional Design, Cooperation, and Coordination
	15-21	International Agreements and Regulations
	22-30	Regulations for Transport Services
	31-49	Regulations for Vehicles and Vehicle Use
	50-53	Regulations for Data Collection, Data Sharing, and Data Use
	54-60	Procurement and Contracts
	61-71	Capacity Building and Human Resource Development
Engineering and Technology	72-84	Technical Standards
	85-101	Asset Construction
	102-116	Design and deployment of Transport Services
	117-129	Design and deployment of Programs and Initiatives
	130-133	Asset Management
	134-137	Safeguards
Economics and Finance	138-143	Project or Program Cycle
	144-146	Allocation of Public Funds
	147-153	Fiscal and Financial Measures
	154-161	Pricing for Efficiency and Inclusion
	162-167	Innovation Policy and Enhancement
Communications	168-172	Consultation and Public Engagement
	173-180	Promotion Campaigns and Public Awareness
	181-182	Knowledge Management and Dissemination of Best Practices
Additional COVID-19 Policy Measures		
Regulatory and Institutional	183	International Agreements and Regulations
	184-186	Regulations for Transport Services
	187	Regulations for Data Collection, Data Sharing, and Data Use
	188	Capacity Building and Human Resource Development
Engineering and Technology	189-190	Design and deployment of Transport Services
	191-192	Design and deployment of Programs and Initiatives
Economics and Finance	193-194	Fiscal and Financial Measures

APPENDIX B: Methodological Note on the production of Prototype Action Plans

Prototype Action Plans are produced by applying the Selection Algorithm to the Catalogue of Policy Measures, through the Action Module in the online Policy Decision-making Tool for Sustainable Mobility.[4]

Input Considerations. The algorithmic production of prototype action plans considers:

- 4 policy goals (universal access, efficiency, safety, and green mobility), where universal access is subdivided into urban, rural, and gender sub-goals.
- Country relevance of a policy measure as a function of how meaningful it can be for countries in each of four groups organized by distance to the targets in each of the policy goals.
- 2 areas where resilience is considered a desirable property for the transport system (extreme weather events and pandemics) and 2 resilience characteristics for each area (preservation of operationality and quick recovery).
- 6 market segments, as follows: 3 for Passenger Transport (Urban, Intercity, International) and 2 for Freight (Domestic and International). Because some measures are transversal to the whole sector, a segment called "All" was also included. This classification is fully independent of the transportation mode used in each segment.

Objective. The algorithm aims to select the set of most impactful measures from the catalogue and produce a Prototype Action Plan (i.e., a set of a reasonable number of policy measures for a country) that attains the highest possible balanced achievement across all policy goals and resilience aspects while ensuring adequate representation of every market segment.

Algorithmic Procedure. The steps for producing a prototype action plan are detailed below.

1. The input variables are defined as:
    a) Initial Scores
        i. Scores of "impact on policy goals" and of "country relevance" are defined for each measure and combined (by multiplication) in what we call "refined impact" scores.
        ii. Scores on the 2 x 2 resilience aspects for each measure.
        iii. For the 6 market segments, a binary value was attributed to each of the measures in the catalogue, depending on whether that measure has an impact on that market segment or not.

4 https://www.sum4all.org/gra-tool/interactive-tool

b) Thresholds:

   i. A satisfaction threshold is defined at 60% of the maximum possible score value, representing the minimum desired level of achievement in the average score of the selected measures for the Prototype Action Plan for each of the policy goals and resilience aspects.

   ii. Two acceptance thresholds are defined: one for the average score across policy goals and resilience aspects (it must be at least 40% of the maximum possible) and one for the minimum score in any of those dimensions (it must be 30% of the maximum possible)

2. In simple terms, the iterative procedure starts with an empty set of measures and successively picks up for the Prototype Action Plan the measures that provide the highest reduction of the average gap to the satisfaction threshold (as in 1 b) i.), while ensuring that the acceptance thresholds defined in 1 b) ii) are respected.

3. Once that procedure is completed, a check is made whether the satisfaction threshold has been achieved across all market segments and there are at least 2 measures relevant for each market segment. If that is not the case, step 2 is repeated to improve the inter-segment balance of the Prototype Action Plan but considering only measures that are incident on the segments for which that level has not been reached.

4. An assessment of possible underperformance in one or more market segments of the country under analysis in comparison with its peers is useful, as it allows selective addition to its Prototype Action Plan of some measures providing 'positive discrimination' of those market segments. This assessment is made as follows:

   a) A method for identification of peer countries has been developed taking into consideration their relative differences in each of 4 variables with a strong impact on the capacity of a country to develop and operate a sustainable mobility system: income, population, latitude, and geographical situation (coastal vs. landlocked). To keep all benchmark exercises easily understandable, the number of peer countries has been fixed as 8 for any country being analyzed.

   b) Sixteen indicators have been selected from the Data Module[5] of the *Policy Decision-Making Tool for Sustainable Mobility 2.0* based on their wide availability across all countries and their balanced coverage of all market segments and transport modes. The values of each of those indicators are standardized to the [0, 100] range.

   c) Considering sequentially each of the market segments, the country under analysis is found to be "underperforming" in that market segment if it has an average of its standardized indicators related to that market segment below 75% of the average of the medians for its peer countries.

5. If the country for which the PAP is being produced has been found in a situation of underperformance (as described in 4c) in one or more market segments, 2 previously unselected measures are added for each of these segments, considering the highest possible balanced achievement across all policy goals and resilience aspects.

Note: Country prototype action plans can be found in the Action module of the *Policy Decision-Making Tool for Sustainable Mobility 2.0*.

5 https://www.sum4all.org/gra-tool/country-performance/global

APPENDIX C: The GRA in Action series[6]

The GRA in Action series seeks to provide actionable policy guidance on how to implement selected policy instruments and enrich the Catalogue of Policy Measures. In 2021, the new series focused on three topics: data sharing, e-mobility, and the transport-energy nexus.

- **Sustainable Mobility: Policy Making for Data Sharing[7]**: This paper takes a deep dive into policies and global experience available to act on "data sharing program and platforms"—measure 124 in the CPM—and associated measures including measures 50, "establish data protection regulations", measures 51, "requirement for service providers to report standardized data", measures, 52, "develop data repositories and data collection guidelines", and measures 53 "use of data to support decision making". The paper offers a global policy framework and practical guidance for policymaking on data sharing. Recognizing the hyperlocal context of mobility needs and policies, the nascent state of the data sharing market, and limited evidence from regulatory practices, the paper offers multiple case studies from across the globe to document emerging good practices and policy suggestions.

- **Sustainable Electric Mobility: Building Blocks and Policy Recommendations[8]:** This paper takes a deep dive into policies and global experience available to act on "integrate new mobility solutions (including autonomous vehicles, e-mobility, and on-demand transportation) to existing transport"—measure 116 in the CPM—and associated measures including measure 35 "establish electric vehicle manufacturing mandates", measure 49 "support vehicle connectivity and smart charging regulations", measure 57 "use public procurement to support vehicle electrification", measure 92 "development of infrastructure for road transport electrification", measure 94 "invest in railway electrification", measure 171 "promote public discussion on new mobility solutions", measure 166 "support R&D to optimize the life cycle of vehicle batteries" and measure 182 "inform users about new sustainable solutions". The paper focuses on policy enablers for e-powered mobility solutions. It analyzes the main barriers to electric mobility development, including two and three-wheelers; identifies seven essential building blocks for successful public policies in the field of electric mobility; and provides policy recommendations for three target audiences—international development public policy community, the national public policy community, and local public policy community. The paper is published in English and Spanish[9].

- **Digital Toolkit for Energy and Mobility[10]:** The toolkit presents a discourse on some of the best practices to achieve energy efficiency in transport through the lens of three policies: (i) promote public discussions on new mobility solutions, for instance, autonomous vehicles, e-mobility, and on demand transportation; (ii) expand public transport infrastructure; and (iii) plan for integrated multimodal transport networks"—measures 171, 87, and 5 in the CPM respectively. This paper takes a deep dive into three policies and global experience available to act on the nexus between the transport and energy sector. The toolkit aims at bridging the gap between the transport and energy sectors when seeking to achieve universal, efficient, safe, and green mobility while developing sustainable, and energy-efficient transport projects.

6 https://www.sum4all.org/publications/gra-action-series
7 https://www.sum4all.org/data/files/policymakingfordatasharing-040622-press.pdf
8 https://www.sum4all.org/data/files/buildingblocksandpolicyrecommendations_040722_press.pdf
9 https://www.sum4all.org/data/files/movilidadelectricasostenible-press.pdf
10 https://www.sum4all.org/data/files/digitaltoolkit4energymobility-press.pdf

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