



Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme Second Global Dialogue

Inputs by SLOCAT - 15 September 2023

About us: [SLOCAT](#) is the international, multi-stakeholder partnership powering systemic transformations and a just transition towards equitable, healthy, green and resilient transport and mobility systems for the people and the planet. We deliver on our mission through co-creation, co-leadership and co-delivery across knowledge, advocacy and dialogue activities in the intersection between transport, climate change and sustainability. Our multi-sectoral Partnership engages a vibrant and inclusive ecosystem across transport associations, NGOs, academia, governments, multilateral organisations, philanthropy and business; and a large community of world-class experts and change-makers. Going where others do not or cannot go individually, our Partnership is leveraged to set ambitious global agendas and catalyse progressive thinking and solutions for the urgent transformation of transport and mobility systems worldwide.

Since 2016, SLOCAT has been the official Focal Point for the transport sector in the Marrakech Partnership for Global Climate Action and in that role facilitates the engagement of transport stakeholders. SLOCAT welcomes the opportunity to submit its views as an observer to the UNFCCC, on the occasion of the **Second Global Dialogue** within the framework of the **Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme**.

This document describes critical challenges, opportunities and actionable solutions in the transport sector, focusing on accelerating just energy transition in transport.

1) Topic: Deploying and shifting to collective transport (rail, urban public transit, cycling, etc.)

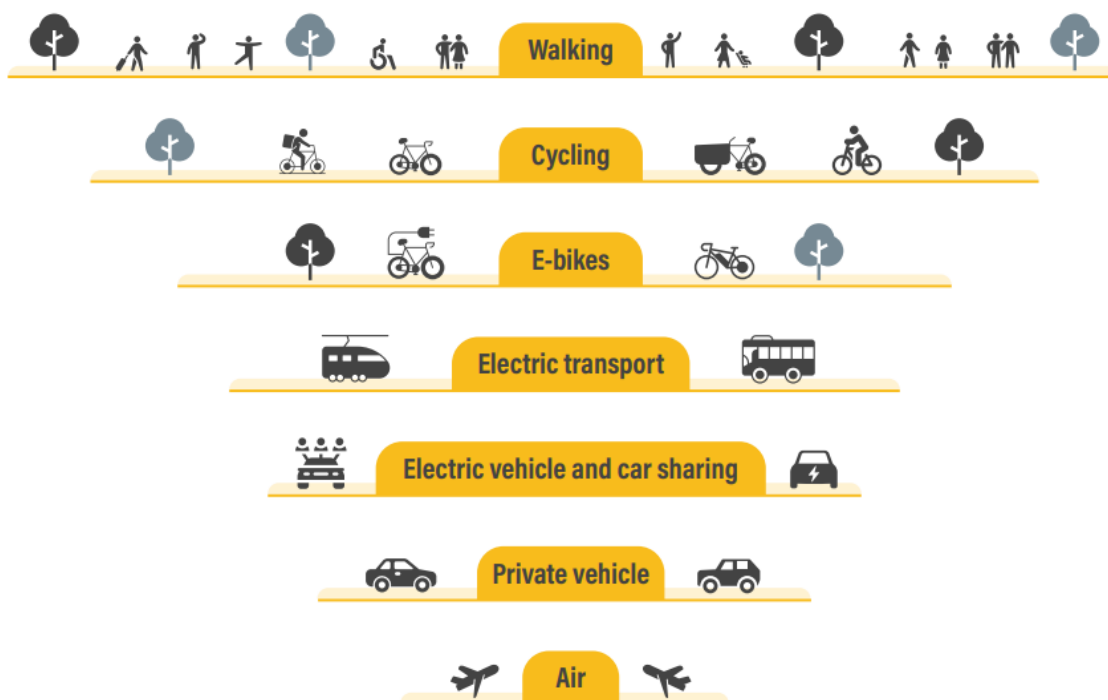
Opportunities: One of the most affordable ways to address climate change, air pollution and congestion is to design cities that enable public transport, walking and cycling. Application of the [Avoid-Shift-Improve framework](#) (ASI) can help unleash the full benefits of sustainable, low carbon transport and hasten the sector's transformation. The ASI framework calls for measures that promote *Avoiding* unnecessary motorised trips, while guaranteeing access to transport and mobility; *Shifting* to less carbon-intensive modes; and *Improving* vehicle design, energy efficiency and clean energy sources for different types of freight and passenger vehicles. Growing evidence shows that behavioural changes (*Avoid* and *Shift* strategies) can account for 40-60% of transport emission reductions, at lower costs than *Improve* strategies (transition to technologies).¹ *Avoid* measures allow cities to limit vehicle traffic to within the capacity of roadways, and reward travellers who use transport modes that are resource, space and energy efficient. In addition, railway and public transport infrastructure can act as the backbone of energy grids, through their well-connected networks in cities, between cities, industries and ports.

Many *Avoid* measures aim to actively manage transport demand, with approaches such as congestion charging, carbon pricing for all transport modes, and incentives for behavioural modifications leading to

¹ SLOCAT, *Avoid-Shift-Improve Refocus*, <https://slocat.net/asi/>

wide-scale changes. As illustrated in Figure 1, in tandem with *Avoid* measures, a *Shift* to less carbon-intensive modes – that is, from private vehicles to public transport, shared mobility, walking and cycling – offers greater and enhanced opportunities for an equitable, just energy transition. *Avoid* and *Shift* measures also offer numerous societal benefits including better air quality, social cohesion and democratic use of public space. Railways are already significantly electrified, allowing for a quick uptake of renewable-produced electricity. According to the Intergovernmental Panel on Climate Change’s Assessment Report 6 (IPCC AR6) public transport-focused development and mixed land use can reduce GHG emissions by 23-26% by 2050.

Figure 1: Sustainable Transportation Hierarchy²



Challenges: As of the end of 2022, the updated Nationally Determined Contributions (NDCs) under the Paris Agreement continue to focus strongly on *Improve* measures (52% of all measures). *Shift* and *Avoid* measures account for 38% and 10% respectively. Achieving the Paris Agreement requires economy-wide emission reduction measures, and the mitigation potential of transport electrification in particular depends heavily on the decarbonisation of the power sector. In addition to *Improve* measures, *Avoid* and *Shift* measures are needed to support transport decarbonisation, as emission reductions will not be achieved without critical transitions in transport modes. Walking and cycling deliver progress towards more of the UN Sustainable Development Goals (SDGs) than any other mode; however, active mobility is still under prioritised in the transport and mobility mix and in the wider climate agenda.

The transport sector has dominated infrastructure investments in both G20 countries and in the member countries of the Organisation for Economic Co-operation and Development (OECD). However, much of this investment has been for road construction and highway expansion, supporting rising motorisation rates while not necessarily enhancing collective transport, walking and cycling. Transport was also a major recipient of COVID-19 recovery investment.

² SLOCAT (2023), *Global Status Report on Transport, Climate and Sustainability – 3rd edition, Module 3*, <https://tcc-gsr.com/figures-module-3/>

Within the transport sector, informal transport services are among the most common urban mobility systems globally, present in nearly every city and town in low- and middle-income countries (LMICs), with an enormous electrification potential to curb emissions. Yet, they are discarded from decarbonisation efforts due to lack of consolidated and robust information. Reliable data on informal systems facilitate the integration of informal transport into planning transport systems that are not only zero emission, but demand oriented, agile and flexible to users' needs. It sets the foundation to engage informal transport's labour, associations, owners, firms, and investors ensuring their inclusion, and equitable distribution of opportunities and benefits; contributing to a more equitable and just transition.

Actionable Solutions/Best Practices:

- Decision makers have at their disposal **planning tools** like:
 - **Transit-oriented development:** The creation of compact, walkable, pedestrian-oriented, mixed-use communities centred around high-quality public transport systems low-, ultra-low and zero-emission zones, parking policy reforms, etc.
 - **Complete streets:** An approach to planning, designing, building, operating and maintaining streets that enable safe access for all people who need to use them, including pedestrians, cyclists, motorists and public transport riders of all ages and abilities
 - **Low-, ultra-low and zero-emission zones (LEZ, ULEZ, ZEZ):** Areas where access for more-polluting vehicles is restricted. Dozens of cities in Europe, China and India had planned or implemented ZEZs by mid 2021. LEZ in Europe grew 40% (from 228 to 320 zones) between 2019-2022, and is projected to grow another 58% by 2025 (507 zones). Some cities have chosen to establish specific **zero-emission zones for freight (ZEZ-Fs)**, like in 2021 the Netherlands announced plans to implement ZEZ-Fs in 30 to 40 of the country's largest cities by 2025.
 - **Parking policy reforms:** Reducing parking mandates and pricing parking more efficiently so motorists pay directly for using parking facilities, with higher prices at peak times and locations.
- **Proximity planning** – such as the '15-minute city' in Paris, the 'super blocks' in Barcelona and the 'low traffic neighbourhoods' in London should be used as a reference for stimulating collective and non-motorised transport.
- Governments should **commit to prioritise investments in public transport, walking and cycling**. [SLOCAT's Six Action to Enable Walking and Cycling](#), summarises how governments at all levels, multilateral organisations, international financial institutions and other stakeholders, can support this critical shift to more sustainable modes.
- Similarly, in a letter to governments signed by more than 400 civil society organisations from around the world, the **Partnership for Active Travel and Health (PATH)** called on national and city governments to **commit to prioritising investment in walking and cycling**, including through NDCs as well as concrete actions for infrastructure, campaigns, land-use planning, integration with public transport and capacity building.
- The Transport Decarbonisation Alliance called on all Parties to the UNFCCC and global financial institutions to invest USD 100 million to **train 10,000 mobility professionals in the planning, design, operations, and promotion of walking and cycling**, to build a local knowledge base and to create a pipeline of projects to ensure sustained, high-quality investment in active mobility at a global scale.

2) Topic: Energy and resource efficiency in the transport sector (design improvements, circular economy and material changes, vehicle vintage, carpooling)

Opportunities: Improving the energy efficiency of the transport sector and scaling up renewable energy uptake in parallel with enabling public transport, walking and cycling, will maximise decarbonisation benefits, while also supporting progress on sustainability. Circular strategies in transport could cut

emissions from materials used in vehicles (of all types) as much as 60% by 2040; currently, 78% of a vehicle is recyclable, but this share could be increased to 97% by 2040.³ **Energy efficiency savings continued to be outweighed by rising transport emissions** due to the overall growth in transport demand and modal shift towards higher-emitting transport; however, better engines, hybrid powertrains and electric vehicles led to an 8.2% increase in energy efficiency of cars and vans from 2015 to 2021.

Challenges: Increased popularity of Sport Utility Vehicles (SUVs) and larger vehicles poses a huge challenge to reducing energy consumption and emissions. In 2023, SUVs consumed around 20% more fuel than a medium-sized car. Between 2021 and 2022, SUVs were responsible for a third of the total growth in oil consumption globally. SUVs were the only major area across all sectors (even beyond transport) where emissions increased during the pandemic. African countries in particular are highly dependent on imports of used vehicles. In East Africa, fleets of used light-duty vehicles are much older - Rwanda (which has no age limit for used vehicle imports) and in Uganda (which has a 15-year age limit on used vehicles). The Netherlands exported 35,000 light-duty vehicles to West Africa during 2017-2018, most of which (80%) were 16 to 20 years old and fell below Euro 4 vehicle emission standards.

Countries have different levels of development among phases of EV battery circularity (e.g. Mining and raw material processing; battery cell component and pack production; EV production/assembly, recycling and reuse). A lack of coordination in this supply chain leads to economic inefficiencies and fails to leverage regional economies of scale.

Actionable Solutions/Best Practices:

- **Mandatory standards for energy efficiency and for greenhouse gas emissions** have proven to be effective instruments to drive efficiency and the shift to zero emission vehicles. An increasing number of countries (mostly with limited or no domestic vehicle manufacturing) have established vehicle standards, vehicle age restrictions or other instruments to regulate the import of vehicles in order to enhance vehicle fleet efficiency and safety.
- The [NDC Transport Initiative for Asia](#) and [Leadership Group for Clean Transport in Asia \(LG-CTA\)](#) are delivering a four-part technical training series for the LG-CTA titled *Circularity of Electric Vehicle Batteries: from Materials and Manufacturing to Recycling*, including participation from Bangladesh, Bhutan, India, Indonesia, Laos, Philippines, Sri Lanka and Vietnam.
- In 2023, the EU approved **new rules ensuring that the increased demand for electric vehicle batteries will be met by more environmentally sustainable batteries**, with lower emissions and sourced from recycled materials

3) Topic: Electrification of vehicles (infrastructure, batteries and minerals)

Opportunities: According to the International Energy Agency (IEA), electric vehicles are the only transport-related area on track with scenarios for net zero greenhouse gas emissions by 2050. Electric vehicle charging infrastructure grew 55% in 2022, bringing the cumulative total to 2.7 million of publicly available chargers. The required renewables shift in transport will have a negative employment effect in regions highly dependent on fossil fuels, however globally, **shifting to renewables in transport is expected to result in a net gain in jobs**. Therefore, **policies to decarbonise transport need to ensure an equitable and just transition to more sustainable jobs**.

Although reducing fossil fuel dependence in transport is key, electrification of transport – even if powered with renewable energy – will not be enough. A shift to more **energy-efficient transport modes, complemented with behavioural changes**, is mandatory. A major driver of future demand for electric vehicles is lower fuel costs, which were at least a third those of diesel and petrol in 2022. In 2021 and

³ SLOCAT (2023) Global Status Report on Transport, Climate and Sustainability – 3rd edition, Module 4.2, <https://tcc-gsr.com/module-4/vehicle-technologies/>

2022, significant global initiatives were focused on the electrification of light-duty as well as medium- to heavy-duty vehicles, covering all major automobile markets and regions.

Challenges: Despite the immense growth in electric vehicles over the last decade, electricity demand in road transport is still low, with electric vehicles accounting for around 1% of vehicles globally in 2022. Fossil fuels continue to account for the majority of electricity generation in the power sector, and thus for the majority of the electricity supplied for electric vehicles. **In the transport sector alone, subsidies and other support for fossil fuels jumped 31% in 2021** due to the surge in fuel use following the lifting of COVID-related mobility restrictions. As of 2020, only 19 countries or sub-national jurisdictions had set targets to phase out diesel and petrol passenger vehicles.

The electrification of vehicles will not resolve several critical transport issues, such as traffic congestion, urban sprawl and the amount of public space devoted to vehicles. Increased lithium mining to manufacture electric vehicle batteries has severe consequences for drought intensity, biodiversity of ecosystems and sovereignty of indigenous lands. Lithium extraction in Argentina, Bolivia, and Chile has significantly increased water demand, which has created extreme shortages in regional water sources and has thus had substantial negative impacts on farmers raising crops and livestock in these countries. There is a risk of an electric mobility divide between high income countries and low- and middle-income countries, in the absence of electrification policies tailored at the economic and regional context.

Actionable Solutions/Best Practices:

- Government **subsidies for electric vehicles nearly doubled in 2021**, approaching USD 30 billion globally. Other economic instruments used to support uptake include tax rebates, feebates and bonus-malus schemes, in which governments incentivise zero- and low-emission vehicles while discouraging high-emission vehicles.
- More jurisdictions are **setting targets for phasing out fossil fuelled vehicles**. As of April 2023, at least 41 countries or sub-national jurisdictions had set phase-out targets for vehicles with internal combustion engines, twice as many as in 2020. In early 2023, the EU passed region-wide legislation to ban sales of new fossil fuel-powered cars and vans by 2035.
- Projected **lithium demand can be reduced by up to 92% in 2050** (compared to lithium-intensive scenarios) through three key policy interventions: **decreasing car dependency, right-sizing EV batteries, and creating more robust battery recycling systems**.

4) Topic: Shifting to low- or zero-carbon fuels (hydrogen, biofuels, biogas, compressed natural gas)

Opportunities: Energy efficiency improvements and the use of renewable energy sources, mostly biofuels, helped reduce emissions from the transport sector. Biofuels are the largest renewable energy source in transport, accounting for 3.7% of the sector's energy consumption in 2021. Hydrogen is viewed as a viable option for long-distance transport, such as heavy-duty vehicles and ships, serving as an alternative when direct electrification is not feasible.

Challenges: As of 2020, fossil fuels provide 95.9% of energy for transport, whereas **renewables provide only 4.1% of the energy for transport, a share that has barely changed over the past decade**. In the energy system currently, less than 1% of global hydrogen production is low emission (so-called green or renewable hydrogen), while the majority is sourced from fossil fuels (grey hydrogen). Emission reductions from biofuels continued to be outweighed by rising emissions from the overall growth in transport demand and from the modal shift towards higher-emitting forms of transport, leading to a net increase in emissions from the sector. In addition, important synergies and trade-offs exist between transport actions to implement the SDGs and actions for transport decarbonisation. For example, biofuels have synergies and trade-offs with SDG 2 (zero hunger) and SDG 3 (good health and well-being), because biofuels take land away from food production

Actionable Solutions/Best Practices:

- **Biofuel blending mandates** remain the most popular measure for increasing renewable energy in transport, with at least 56 countries and the EU having established some form of obligation by the end of 2022. **India released its 2025 ethanol roadmap**, which would move up by five years the country's blending mandate for 20% ethanol, to 2025.
- New Zealand adopted a new procurement requirement in 2022 that **requires all public transport buses purchased starting in January 2025 to be zero emission**. New Zealand launched an updated vehicle labelling scheme in April 2022 that includes CO₂ emissions and Clean Car Discount eligibility.
- In 2023, the EU proposed that **only zero-emission buses could be sold in the region starting in 2030**, and that by 2040 new trucks would need to **produce at least 90% fewer CO₂ emissions compared to 2019 levels**. As of 2022, more than two thirds of new bus registrations in the EU were electric and a third of the total bus stock was electric.
- Through the **Accelerating to Zero Coalition**, established at COP26, more than 200 stakeholders – including governments, auto manufacturers, investors, financial institutions and fleet operators – committed to transition to 100% zero-emission cars and vans globally by 2040, and no later than 2035 in key markets. 154 Signatories also pledged to support emerging economies through technical assistance, finance and capacity building.
- At COP26, a **Memorandum of Understanding on Zero Emissions Medium- and Heavy-Duty Vehicles** was launched, with the goal of achieving 100% zero-emission new truck and bus sales by 2040.

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