

Decarbonizing the Transport Sector in Africa: Urgent Action and Proposals for Climate Action

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Key Highlights

The rate of motorization in Africa continues to grow relative to other regions globally. Consequently, the rates of transport emissions remain unabated due to factors such as increasing vehicle ownership, poor fuel quality, and limited transit options. These concerns limit the rate of decarbonization of the transport sector in the continent. The key highlights include:

- (i) The rapid rise in vehicle ownership in Africa, with a projected doubling by 2030, poses a substantial threat to emissions especially in urban areas.
- (ii) The prevalence of low-quality fuels in Africa, resulting in higher emissions from vehicles, poses a significant threat to air quality and public health, with evidence pointing to the urgent need for comprehensive regulations, enforcement mechanisms, and public awareness campaigns.
- (iii) The limited availability of public transit options in African cities, leading to heightened reliance on private transportation with potentially high pollution levels, underscores the critical need for the development and effective implementation of Bus Rapid Transit (BRT) systems.
- (iv) To effectively decarbonize the transport sector in Africa, it is imperative to embrace and implement comprehensive measures, including the promotion of sustainable transport solutions, enhancement of vehicle emission standards, rigorous enforcement of stringent fuel quality standards through capacity building and collaboration, and a strategic expansion of efficient, green, and inclusive public transit options, all supported by targeted investments, international partnerships, and a commitment to long-term sustainability goals.

Introduction

Africa has a unique opportunity to recalibrate its transportation strategies and set the continent on a trajectory towards a sustainable and decarbonized transport future. The global transport sector accounts for a quarter of all greenhouse gas emissions and, in Africa, there has been a notable surge in transport-related emissions. Between 2010 and 2021, the region experienced a substantial 34 per cent increase in carbon emissions, making it the second-highest growth rate globally, just behind Asia (SLOCAT, 2023). The main contributors to this rising trend include the prevalence of outdated vehicles dependent on traditional fuels, a lack of robust public transit alternatives, and an escalating demand for increased mobility (SLOCAT, 2023).

Decarbonizing the transport sector is not only a climate imperative but also an avenue for job creation, energy security, and improved air quality (EASAC, 2019). African leaders can leverage COP28 as a

catalyst for transformative policy actions that will set the continent on a trajectory towards a sustainable and decarbonized transport future. Achieving this goal will require careful policy planning and external support, balancing pressing needs such as poverty reduction and access to electricity with climate goals (EASAC, 2019; Tokam, 2022). This policy brief implores African leaders to leverage COP28 as a catalyst for transformative policy actions that will set the continent on a trajectory towards a sustainable and decarbonized transport future.

Rising Vehicle Ownership and Implications on Emissions

The increasing vehicle ownership and use in Africa is a major driver of emissions in the transport sector. Vehicle ownership in Africa has risen rapidly, with over 400 per cent increase from 2005-2015 and is expected to double again by 2030 as incomes and the middle class grow (SLOCAT, 2023). This trend

threatens to lock African cities into high-emission transport systems with congestion and urban sprawl unless managed prudently (IEA, 2019).¹ The Safer and Cleaner Used Vehicles for Africa programme, supported by the United Nations Road Safety Fund, aims to reduce emissions of air pollutants and greenhouse gases by up to 90 per cent by requiring all vehicles to be imported, both new and used, and petrol and diesel, to comply with minimum standards/requirements for used vehicles (UNEP, 2022). However, the absence of a global and/or regional harmonized standard on the trade of used cars presents a major global challenge to road safety and clean and affordable road transport, especially with the rapid growth of used vehicles in developing countries (UNEP, 2022). African countries have taken various measures to curb imports of used vehicles, including banning imports of used vehicles in Egypt, South Africa, Sudan, and Seychelles, and imposing age restrictions in Kenya, Rwanda, Angola, and Morocco (UNEP, 2022). However, the concern about used cars is not necessarily in their categorization or age but whether such cars are still roadworthy. The transport inspectorate of the Dutch Ministry of Infrastructure and Water Management reported that out of 160 vehicles exported to Africa, more than 80% did not have roadworthy certificates, and some of these vehicles did not even have catalytic converters attached (Ayetor, Mbonigaba, Ampofo and Sunnu, 2021).

Efforts have been made by African countries and international organizations to address the increasing vehicle ownership and use in Africa. Efforts are being made to address these challenges, such as the United Nations Environment Programme push for soot-free buses in Africa and the African Development Bank's support for sustainable transport solutions (AfDB, 2021).² The West African region has one of the fastest-growing vehicle fleets in the world, and the Economic Community of West African States Commission, with the support of the United Nations Environment Programme (UNEP) and other partners has adopted regulations to restrict the quality of cars being imported into the region (UNEP, 2022). All vehicles that are imported, both new and used, and petrol and diesel, are required to comply with a minimum of EURO 4/IV vehicle emissions standard as from 1 January 2021, and an age limit for used vehicles of 10 years was also agreed to, with a requirement of a five-year age limit for light-duty vehicles (Ayetor, Mbonigaba, Ampofo and Sunnu, 2021). The African Association of Public Transport (UAPT), UNEP, and the Climate and Clean Air Coalition (CCAC) launched key guidelines in November 2021 that establish a strategic roadmap designed to help African cities embrace electric mobility (UNEP, 2022). The guidelines aim to reduce the environmental damage and human health risks associated with vehicle fleets in African cities, which are doubling every 10 years (Ayetor, Mbonigaba,

Ampofo and Sunnu, 2021). The guidelines also aim to help African cities deliver a more reliable and speedy transport system to their growing urban populations.

Despite these efforts, gaps still exist in addressing the increasing vehicle ownership and use in Africa. The lack of robust data on urban and rural transport in Africa makes quantifying trends and calculating emissions difficult, although efforts are being made to fill in critical data and information gaps (SLOCAT, 2023). There are also challenges associated with weak enforcement of stringent vehicle emission standards. Strengthening and enforcing emission regulations can help reduce the environmental impact of the growing number of vehicles. Access to clean and efficient transportation technologies, such as electric vehicles, is limited due to their higher upfront costs. Incentives and support mechanisms are often necessary to make these technologies more accessible to a broader population.

Fuel Quality and Energy Mix Impact

Reliance on fossil fuels in Africa, particularly low-quality fuels, contributes to higher levels of carbon dioxide and other pollutants. Low-quality fuel leads to higher emissions from vehicles, and this is a pressing problem in many African countries. The results are poor air quality in many African cities that have far less fuel consumption than major European metropolitan areas. Air pollution remains a major challenge in Africa, with about 600,000 deaths every year across the continent associated with this invisible killer.³

Evidence indicates that poor fuel quality, aging vehicle fleet, and lack of mandatory roadworthy emission tests were to blame for the deteriorating transport emissions in Africa (SLOCAT, 2023). The African Refiners and Distributors Association (ARDA) held its annual conference in Cape Town, South Africa, where it was reported that many African nations, including Ghana, have Sulphur standards that range as high as 300 times the levels in Europe and the United States. The report also highlighted that many traders take advantage of fuel standards in Africa that allow for high contents of Sulphur that would not meet modern environmental regulations in Europe and other developed markets (SLOCAT, 2023).

Governments in some African countries have started to either implement or strengthen fuel quality standards and regulations to control the sulfur content and other harmful components in fuels. These standards aim to bring fuels in line with international norms, thereby reducing emissions. Nigeria has developed regulations on fuel quality standards, which are embedded in the country's National Automotive Industry Development Plan (NAIDP) (National Automotive Industry Development

Plan, 2023).⁴ Public awareness campaigns have been launched in South Africa, Kenya, Nigeria, Morocco, and Ghana to educate citizens about the importance of using cleaner fuels and reducing emissions (Clean Air Initiative for African Cities, 2022).⁵ However, most African countries lack stringent regulations and effective enforcement mechanisms to control vehicle emissions. The absence of emission standards for vehicles, and lax enforcement of existing standards, contribute to higher carbon emissions from the transportation sector.

Limited Public Transit Options and Pollution

Limited public transit options in African cities contribute to increased reliance on private transportation, such as diesel-powered mini-buses and motorcycles, which can be significant polluters. This is a pressing issue in Africa, where most cities have limited public transport systems relying on diesel-powered mini-buses and motorcycles (having two-stroke engines), making them even more polluting. African cities have been increasingly turning to Bus Rapid Transit (BRT) systems to improve mobility. Bus Rapid Transit runs on dedicated lanes, offering fast and consistent journey times, and operated by large vehicles that can carry large numbers of people quickly and efficiently. The World Bank has been supporting the growth of Bus Rapid Transit systems in Africa, as they are an integral part of the transition towards efficient, green, and inclusive mobility.

In South Africa, Johannesburg's Rea Vaya and Cape Town's MyCiTi are examples of BRT systems designed to enhance public transportation, reduce carbon emissions, and improve traffic flow (Gauthier and Weinstock, 2010). Other African cities with functioning BRT systems include Marrakech, Cairo, Accra, and Lagos. Kenya has been exploring the development of a BRT system to address traffic congestion and reduce carbon emissions.

However, African countries face several challenges in developing and implementing effective public transportation systems. These include inadequate import regulations, lack of export standards, and unreliable electricity infrastructure. In some African countries such as Kenya, Uganda, Tanzania, Burundi, and Rwanda, regulations have been implemented to reduce sulfur content in fuels (Ayeter, Mbonigaba, Ampofo and Sunnu, 2021). However, challenges remain in monitoring and enforcing these regulations, and in improving the overall quality of fuels.

Call to Action and Recommendations for COP28

Although efforts have been made by nations and regional blocks to reverse the situation without compromising economic development, there is need for concerted efforts from diverse players nationally,

regionally and internationally. As the world embarks on discussions about addressing climate change during COP28, keen attention needs to be paid to the African continent to address the rising levels of transport emissions.

To address these challenges and decarbonize the transport sector in Africa, these recommendations could be considered:

- (i) Promote sustainable transport solutions: Transportation ministries, urban planning agencies, and local governments need to undertake comprehensive assessments to identify transportation needs and patterns, coupled with the formulation of policies that prioritize public transportation, cycling, and walking, alongside offering financial incentives for adopting environmentally friendly vehicles.
- (ii) Improve vehicle emissions standards: Government regulatory authorities responsible for transportation and environmental regulations could take the lead in establishing and regularly updating stringent tailpipe emissions standards for vehicles, focusing on reducing carbon dioxide (CO₂), nitrogen oxides (NO_x), particulate matter (PM), and other harmful pollutants.
- (iii) Address poor fuel quality: Government regulatory agencies should develop and enforce stringent fuel quality standards in line with international benchmarks, focusing on key parameters such as sulfur content, octane levels, and additives, and:
 - (a) Invest in capacity building for regulatory agencies to effectively monitor and enforce fuel quality standards; establish training programmes for refinery workers, inspectors, and other stakeholders to improve their understanding of and adherence to quality standards; facilitate knowledge exchange programmes with countries that have successfully addressed fuel quality issues; and promote research and development in the local fuel industry to encourage innovation and the adoption of cleaner technologies.
 - (b) Collaborate with private sector and international organizations in public-private partnerships (PPPs) to improve fuel infrastructure by providing investment incentives such as tax breaks, subsidies, or low-interest loans; focusing on upgrading refineries, storage facilities, and transportation networks; and ensuring that these investments align with long-term sustainability goals.
 - (c) Support the production and consumption of alternative fuels, such as biofuels, compressed natural gas (CNG), and liquefied petroleum gas (LPG); provide subsidies or tax breaks

for the development and adoption of cleaner fuel technologies; and promote research and development in renewable energy sources to diversify the energy mix and reduce dependence on conventional fuels.

- (iv) Expand public transit options:
- (a) Invest in the development and implementation of efficient, green, and inclusive public transportation systems, such as Bus Rapid Transit (BRT) systems.
- (b) Develop and execute strategies for enhancing and extending road networks; invest in the creation of efficient and sustainable public transportation systems; and actively pursue international funding and partnerships to bolster major infrastructure projects.

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Endnotes

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