ICLEI Local Governments for Sustainability

100% RENEWABLES CITIES & REGIONS ROADMAP

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solutionsgateway Climate, Energy, and Finance Solutions

100% RENEWABLES SOLUTIONS PACKAGE

Electric micro-mobility for decarbonized transport

This solution is part of a package of solutions meant to guide local and regional governments in implementing a local renewable energy transition by providing guidance on mechanisms, applications or technologies that can help accelerate their climate and energy action.

It was produced as part of the 100% Renewables Cities and Regions Roadmap project, which supports nine cities and regions across Argentina, Indonesia and Kenya to develop bankable renewable energy projects and in-depth local strategy and action plans to achieve one hundred percent renewable energy. The 100% Renewables Cities and Regions Roadmap project is implemented by ICLEI – Local Governments for Sustainability and funded through the International Climate Initiative (IKI), which is implemented by the Federal Ministry for Economic Affairs and Climate Action (BMWK) in close cooperation with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and the Federal Foreign Office (AA).

DISCLAIMER

All cities are unique. The Solutions Gateway has been developed as an advanced knowledge catalogue to provide an overview of possible Low Emissions Development Solutions. The Solutions and Packages it contains provide guidance on general conditions, which may not correspond to the existing conditions in your city or jurisdiction. The consultation and use of the Solutions Gateway does not waive the need for the Local Government to assess the feasibility of a Solution or Package in the local context in its city or jurisdiction, prior to implementation. Please note that the impacts, benefits and co-benefits indicated are generally valid but may not materialize in particular circumstances.

ABOUT SOLUTIONS GATEWAY

Solutions Gateway is an online resource platform for Local Governments where they will be able to find possible Low Emissions Development (LED) Solutions for their cities.

In the context of the Solutions Gateway, Solutions are processes, or groups of actions, which Local Governments can implement to deliver climate change mitigation results and enhance local sustainable development. Taking an integrated approach, and focusing on Local Governments usual responsibilities and roles, Solutions include core actions as well as enabling and multiplying actions essential to maximize their effectiveness and efficiency. These include policy, regulatory, governance, capacity building, awareness raising, stakeholder engagement, etc.

ABOUT ICLEI – LOCAL GOVERNMENTS FOR SUSTAINABILITY

ICLEI – Local Governments for Sustainability is a global network working with more than 2,500 local and regional governments committed to sustainable urban development. Active in 125+ countries, ICLEI influences sustainability policy and drives local action for low emission, nature-based, equitable, resilient and circular development. ICLEI's Members and team of experts work together through peer exchange, partnerships and capacity building to create systemic change for urban sustainability.

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1. INTRODUCTION

Electric micro-mobility is becoming increasingly popular for short to medium distance travel, especially in urban areas. This includes light-weight two- or three-wheelers powered by an electric engine, such as e-motorcycles, e-scooters, e-bicycles, e-tricycles, e-mopeds, segways, etc. with maximum speeds of 45 kilometres/28 miles per hour [1]. Electric micro-mobility vehicles (EMVs) can be privately owned or publicly shared, and can be used for personal transportation (sole means or supplemental), tourism, sport, recreation, or work (e-hailing, deliveries, etc.).

Governments have been advocating for EMVs since the 2000s to ease traffic, improve air and noise pollution, and promote healthier lifestyles for users [1]. Local governments are encouraged to promote EMVs to support the transition from car-centric to people-centric roads and contribute towards the decarbonization of the road transport sector. This can be done by enabling EMV markets by ensuring favourable regulatory conditions, raising awareness, offering incentives and partnering with the private sector in order to support their sustainable development and climate protection goals.

1.1 RELEVANCE

According to the International Energy Agency (2023), the transport sector is responsible for more than 33% of global carbon dioxide emissions [3], where 75% comes from road travel [4]. While the COVID-19 pandemic restrictions were instrumental in reducing emissions from transport, emissions are on the rise again. If cities are to pursue a net zero carbon emissions scenario by 2030, the transport sector is required to reduce emissions by at least 25% [3]. A combination of measures is needed to achieve a cleaner transport sector including policies for modal shifts to lower carbon intensive options such as EMVs. Micro-mobility can cover last-mile travel, displacing car usage and expanding the reach of public transport options.

90% of people who live in cities breathe in air that does not comply with the World Health Organisation (WHO) standards. The transport sector is the largest contributor to PM_{25} pollution [13] which leads to negative health impacts. EMVs are typically more accessible and cheaper (in the long run) as there are reduced/no costs for parking, taxes or maintenance services, and some do not require drivers' licences, compared to internal combustion engine (ICE) vehicles. In this regard, EMVs present an opportunity in an arsenal of solutions to support healthy citizens, contribute to the decarbonisation of the transport sector in a just way, and build sustainable cities. This solution is particularly effective if EMVs are integrated with micro-solar panels, or if batteries powering the EMVs are recharged by renewable energy.

1.2 SDGs ADDRESSED

- **SDG 3 | Good health and well-being:** Ensure healthy lives and promote well-being for all at all ages.
- **SDG 5 | Gender equality:** Achiever gender equality and empower all women and girls.
- **SDG 7 |Affordable and clean energy:** Ensure access to affordable, reliable, sustainable, and modern energy for all.
- **SDG 8 | Decent work and economic growth:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- **SDG 9 | Industry, innovation and infrastructure:** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- **SDG 10 | Reduced inequalities:** Reduce inequality within and among countries.
- **SDG 11 | Sustainable cities and communities:** Makes the cities and human settlement inclusive, safe, resilient, and sustainable.

- **SDG 12 | Responsible consumption and production:** Ensure sustainable consumption and production patterns.
- **SDG 13 | Climate action:** Take urgent action to combat climate change and its impacts.

1.3 MAIN IMPACTS

ECONOMIC

- EMVs are usually more affordable than owning an internal combustion engine (ICE) vehicle, especially for younger people, and would offer financial relief and savings. Hence, this could result in more financial resources for individuals and families to access education, proper nutrition and healthcare. This is particularly true for developing countries, and therefore, can ensure economic security/growth within a household.
- EMVs can enable e-commerce and offer mobility as a service including the movement of people, delivery of small goods and services, and support tourism in a more sustainable manner.
    - In the United States, Canada, Australia and the United Kingdom, citizens can use Lime micro-mobility (a shared electric vehicle company which lets out their e-scooters and e-bikes) and Doordash (a food delivery and take-out service) to earn money in a flexible way.
    - It is estimated that 50% of goods (for example, food, medical supplies, small volumes of water, etc.) can be delivered by EMVs in rural or countryside areas, especially with a basket or small trailer attached.
    - EMV solutions can play a critical role in ensuring that micro/small-scale farmers can access the market with their produce, thus reducing chances of food waste in communities as a result of perishability, and on the other hand, providing communities with timely access to products needed to boost their nutrition.
- The EMV value-chain will create skilled, green jobs and support livelihoods.
    - It is estimated that around 1 million jobs could be created in the European Union from a local value-chain [5]. In an AIE study, it predicts that the transition to e-vehicles would create more new jobs than would be lost, and people working for small and medium enterprises (SMEs) would be the main beneficiaries. It was further estimated that 57% of these permanent 200 000 jobs will arise from the installation, operation and maintenance of charging stations [7].
    - Ride-sharing models are easily deployed for micro-mobility solutions, as many companies and cities have done (e-bikes, e-scooters, etc.) This can help move away from individual ownership and towards public and active transport methods, further contributing to environmental goals.
- Demand for EMVs will support the economic diversification of regions, which is especially important in areas that will be affected by the just transition away from fossil fuels.

SOCIAL

- Considering that EMVs are easier to ride and more comfortable than their non-electric counterparts, it may encourage more people to use them, especially younger and older people.
    - In some European countries, people over 70 must pass a medical exam before they can drive a car [8]. EMVs present a good alternative for those who do not want to go through this process or do not pass, but still need to get around.
    - EMVs enable multi-stop trips (as compared to public transport) which are useful particularly for women who are mostly responsible for household chores and running errands due to societal and cultural norms.

- EMVs are useful for first and last mile use and can be used as supplemental transport to public modes of transport or carpools.

- Safety and social well-being: With proper infrastructure and safety measures in place, using EMVs can reduce the number of accidents and fatalities from road accidents.
  - Avoids the psychosocial impacts of using public transport [8], and contributes to subjective well-being [9].

- Improved accessibility to services: From the perspective of developing countries, governments can design projects that harness EMVs to provide access to water, transportation to schools, markets, and even jobs that are currently accessible through walking.
  - An e-bicycle with a trailer can improve the transportation of medical supplies, water and food in rural areas.
  - Supports the implementation of "15-minute cities" which is an urban planning concept where necessities are within reach for people.
  - Provides an alternative to public transport in places where it is not possible to integrate public transport systems.

- Traffic congestion, associated air pollution and health: By reducing the number of private ICE cars on roads, traffic congestion is eased, and air quality and peacefulness improves.
  - Promotes the 'One health' concept (i.e. the health of people is intrinsically connected to the health of our shared environment).
  - Takes up less space on roads - the space required for 1 car is equivalent to that needed for 12 electric scooters [5].

ENVIRONMENTAL AND CLIMATE IMPACTS

EMVs can contribute to cities and human settlements being more inclusive, safe and climate resilient.

- By reducing the number of private ICE cars on the roads, air and noise quality immediately improves.
- EMVs can be fully recharged by renewable energy, hence can be considered as a low-carbon e-mobility technology.
- It also contributes to overall lower lifecycle carbon and particulate matter emissions
  - EMVs are instruments in the decarbonization of local transport systems, thereby supporting climate action and contributions towards Nationally Determined Contributions (NDCs) at the national and global level.
  - Recent research has proven the mitigation impacts of EMVs:
    - › It was found that substituting cars with e-two wheelers can reduce CO_2 by 24.4 million metric tons ($MtCO_2$) per annum in England [10].
    - › Assuming a 15% of e-bike usage, car usage can be dropped from 84.7% to 74.8% in Portland, with each e-bike representing the potential to provide an average reduction of 225 kg CO_2 per year [10].
    - › If cities switched from ICE cars and vans to EMVs for at least 10% of all trips less than 8kms, the potential annual emissions reductions are about 30 million tons of CO_2 - this is equivalent to 12% of Germany's emissions from the energy sector. In addition, 50 000 hectares of inner city land could be freed up [Dungs][5].
    - › The GHG emissions of 1 average ICE car is equivalent to that of 2 electric cars and between 7-12 electric scooters [5].

- EMVs have a particularly important role to play in countries where public transport systems are non-optimal, poor functioning or expensive.
- EMVs can be integrated into a strategy to support the reduction in oil consumption [11]

1.4 BENEFITS

ECONOMIC

- More savings in transport budgets for individuals and families, therefore such savings can be used for educational, health and nutritional needs amongst others.
- Increased access to markets by small-scale farmers and consumers, therefore contributing to improved food access and security.
- Increased income as a result of cycling tourism, delivery of goods and services, movement of people through the e-bike sector.

SOCIAL

- Improved health of citizens due to cleaner air and improved physical activity - users are less likely to get heart diseases and other negative effects of sedentary lifestyles.
- Increased access for women and girls to water, schools, markets, and even jobs that are currently not sustainable and accessible through walking.
- Development of partnerships amongst local and international players towards the realisation of e-bike projects thus stimulating investment.
- Eases traffic congestion.
- Provides a good option for younger people (e.g. students, those who do not qualify to drive yet), parents of young children, and the elderly; as well as tourists and temporary visitors.
- Provides supplemental transport to public transport.

ENVIRONMENTAL AND CLIMATE IMPACTS

- Supports the shift from that of traditional mobility systems (car-centric) to a more people-centred and climate-neutral system, thus supporting the decarbonization of transport systems and promoting sustainable cities and climate change mitigation.

1.5 SUGGESTED INDICATORS FOR MONITORING RESULTS

- Number of EMV users
- Number of jobs created in the EMV sector
- Reduction of local annual GHG emissions
- Measure of local ambient air quality
- Measure of increased average household savings in EMV users (through census data)
- Measure of well-being and happiness

1.6 TYPICAL LOCAL GOVERNMENT ROLES

- Planner, coordinator of programmes and projects, and mobilisation and engagement of relevant stakeholders
- Serve as role-model in leading pilot projects
- Builder/Operator/Owner of municipal cycling facilities and infrastructure (cycle lanes, charging infrastructure, cycle counter, etc.)
- Education, awareness raising, and capacity building
- Legislator and regulator of policies to promote cycling,
- Provider of incentives (e.g. tax rebates) for purchasing or switching to e-two wheelers

Public electric bicycle rental programme in Madrid, Spain (Credit: Sayuri Chetty)

2. INTEGRATED SOLUTION OVERVIEW

	Enabler Actions	Required Actions	Multiplier Actions
Policy	• Ensure roads are well lit for safety at night, or implement curfews. • Implement mandatory safety gear for drivers (helmets, visibility jackets, bells for bicycles, reflectors, etc.) • Place restrictions on ICE car usage to encourage usage of EMVs, or create special low-emissions zones within the city where penalties are incurred if you drive an ICE vehicle into the zone. • Develop policy to address end-of-life treatment such as disposal/reuse of batteries and components. • Develop public EMV -share programmes together with the private sector (micro-mobility manufacturers/sellers). • Exploring synergies with other local goals such as waste management, by exploring the use of second-life batteries in local EMV solutions	• Develop a sustainable mobility plan/ decarbonisation of transport strategy for the city which includes EMVs as one solution in a package of solutions. ◦ Ensure safety features are specified for EMVs users such as speed limits, traffic calming (speed bumps) and signage. ◦ Ensure the strategy is inclusive in terms of gender and differently-abled people. For example, include recommendations for e-motorcycles to be designed for women in mind, requirements for a baby/child seat to be used on e-bicycle, ensuring women are trained and available as drivers for e-hailing services, etc. › Dockless solutions can create conflicts with pedestrians and people with disabilities [14]. • Develop policies to encourage the use of EMVs. Propose specific incentives for purchasing of these e-vehicles. ◦ Partner with EMV manufacturers/assemblers/ sellers to implement a buy-back or rebate scheme to swap your ICE models for an e-model.	• Political will to promote the use of EMVs and integrate it into the city, as well as support for the pedestrianisation of strategic areas, and placement of restrictions on ICE car usage in the city to make micro-mobility safer and discourage space-taking cars (e.g. car free days in the city, city congestion taxes for cars). • Require all new buildings (residential complexes, shopping malls, etc.) to be built with public charging infrastructure - either free or at a small fee. • Plan for the phase-out of ICE vehicles, or start banning ICE vehicles in certain "emissions-free" zones of the city - this has been effective in places such as China, Switzerland and the UK. • Law enforcement present and visible to ensure safety of all road users. ◦ Include a toll-free hotline to report any misdemeanour. • Institute a city fleet programme that incorporates the use of EMVs. For example, segways for security guards. • Include infrastructure development to support EMVs such as public parking spaces e.g. bike racks/containerised lockers, a network of dedicated lanes/increasing width of current cycle lanes, charging infrastructure, etc. ◦ Identify locations for these enhanced road features, align strategic points and points of interest/near public transport/public services, etc.

	Enabler Actions	Required Actions	Multiplier Actions
Stakeholders and Awareness	• Partner with EMV manufacturers/assemblers/ sellers to offer free/subsidised EMV driver training to citizens, for example, as part of campaign to bring awareness to e-mobility month. • Host an interactive city map to find EMV parking, routes, bike share locations, etc.	• Undertake a transport mode share study to understand user behaviours, and gauge interest of citizens to utilise these EMV options. • Raise awareness on the social, health and environmental benefits of using EMVs. • Support change management coupled with targeted information and awareness raising campaigns. • Ensure stakeholder engagement on relevant policies and plans for the development of infrastructure to enable EMVs.	• Promote tourism and organise EMV city tours, or offer discount city tours by EMVs.
Governance	• Ensure regular maintenance of roads to ensure safe conditions for all road users. • Understand from peer cities about their deployment of micro-mobility solutions, particularly public acceptance and use of public space	• Create internal steering committees/task teams to draft the relevant policies, plans, initiate programmes and projects required for creating the enabling framework for EMVs. • Ensure stakeholder engagement on relevant policies and plans for the development of infrastructure to enable micro-mobility.	• Operate a telephone line for reporting cases of harassment/ misdemeanour to promote safety for all users, especially women and youth.
Capacity Building	• Offer free e-bike lessons through volunteer programmes - work with community based organisations (CBOs).	• Ensure city staff are trained to implement policy and regulations on EMVs. ◦ Organise peer-exchange sessions with other cities or undertake a study tour to a city that has safely integrated EMVs.	• Support change management coupled with targeted information and awareness raising campaigns to move away from car-centric road usage and behaviour. • Promote training and certification of EMV technicians. • Integrate EMVs as part of the drivers-ed courses offered at school for teenagers from 16 years old.

	Enabler Actions	Required Actions	Multiplier Actions
Technical	• Map the local EMV value chain, and describe the economic opportunities available. • Conduct studies to verify the benefits of EMVs in terms of emissions, energy and cost savings and transitioning to a more inclusive and just transport system.	**Equipment and facilities** • Undertake planning for a network of infrastructure and facilities that connects the city to enable EMVs and promote their use. **Behavioural changes** • Change management coupled with targeted information and awareness raising campaigns. • Ensure EMVs have integrated safety features, or are used with safety measures.	• Promote the establishment of battery buy-back centres in the city.
Finance	• Bike-sharing or other innovative business models to enable access to a wider group of people • Explore the integration of mobile payment systems, etc. to expand the reach of communical micro-mobility solutions	• Develop an incentive scheme for using EMVs e.g. subsidies, rebates, tax relief, or implement higher taxes on ICE vehicles to discourage use. • Support attractive parking tariffs for EMVs - free/lower rates for EMVs and paid/higher rates for ICE vehicles. • Develop proposals for bankable projects that support the local economy through micro-mobility solutions	• Engage financing institutions to facilitate financing options for consumers.

3. WORKFLOW /PROCESS PHASES

3.1 PREPARATION

- Undertake a transport mode share study to understand current mode shares, user behaviours, and gauge interest for citizens to utilise these EMV options.
- Map out the required enabling legislative framework needed to support the EMV market and identify the role/s for the city.
    - Develop the relevant plans e.g. a sustainable mobility plan which is gender inclusive, and aims to mainstream EMVs and policy to support EMVs (e.g. subsidies) and address end-of-life treatment such as disposal/reuse of batteries and components.
- Identify and articulate the benefits of EMVs and align/integrate with complimentary local policy objectives such as promoting health and well-being, the green economy and the environment.
- Set up the relevant governance structures and bring together relevant actors for the planning of EMV policies, plans and initiatives.
    - Identify champions or committed advocates who can play a key role in the implementation of enabling frameworks for EMVs.
    - Train staff to implement policy and regulations on EMVs.
    - Ensure stakeholder engagement in the planning and development of infrastructure and policies.
- Town planning for a network of infrastructure and facilities that connects the city to enable EMVs, and identification of locations for these enhanced road features.

3.2 APPROVAL

- Political will to promote the use of EMVs and integrate it into the city, as well as support for the pedestrianisation of strategic areas and placement of restrictions on ICE car usage in the city to make micro-mobility safer and discourage space-taking cars (e.g. car-free days in the city, city congestion taxes for cars).
- Schedule public-participation processes for any policies that are developed, and obtain the necessary council approvals.
- Obtain the support and buy-in from stakeholders and community members to proceed with EMVs as a sustainable transport solution that provides multiple other co-benefits.
    - Conduct awareness raising, hold information sessions and consultations as required. Convey the benefits this offers for clean transport job creation, local economic development and financial inclusion. Consider partnering with local community groups/NGOs/private sector/EMV manufacturers sellers to support awareness raising.
- Ensure agreements for partnerships are in place from external stakeholders for example, companies that wish to implement bike share programmes, or shopping malls to integrate electric vehicle charging, etc.

3.3 PROCUREMENT

- Institute a fleet programme that makes use of EMVs.
- Secure contractors for the construction of necessary infrastructure

3.4 IMPLEMENTATION

- Implementation of the relevant policies for EMVs.
- Development of infrastructure (cycle lanes, bike racks, green open space, road signage) required to enable EMVs.
- Roll-out of city-led initiatives such as incentive schemes, subsidies, awareness raising, and capacity building.
- Establishment of a Special Economic Zone/Special Purpose Vehicle for the green economy to encourage EMV manufacturers/assemblers/sellers and battery buy-back centres to set up their shops in the city.
- Enforcement of rules related to EMVs

3.5 MONITORING

- Monitoring framework to be developed with indicators and verification methods to monitor the effectiveness of policies, infrastructure development and general compliance of EMVs.
    - Mainstreaming of the sustainable development goals in the monitoring framework.
- Share lessons learnt and good human impact stories to demonstrate benefits and inspire larger uptake within communities and other cities.

4. REALITY-CHECK

This solution is applicable in both urban and rural areas, and on most road types. E-bikes for example are better at climbing hills compared to regular bikes, however it is recommended that they are not used on steep inclines for safety reasons.

4.1 REQUIRED PRE-CONDITIONS

- Availability of EMV suppliers to meet demand.
- Infrastructure such as cycle lanes, bike racks, green open space, road signage, etc. to allow the space and safety for EMV users.
- Willingness by the recipients/communities to uptake and utilise EMVs.

4.2 SUCCESS FACTORS

- Political commitment to increase the use of EMVs and integrate into policy.
- Stakeholder's willingness to support innovation in order to ensure the successful implementation of the measures set out.
- The good performance of EMVs including warranties.

- Commitment to building a comprehensive network, done quickly.
- Accessibility, reachability, safety, reliability and practicality of route [11].
- Manufacturing of the battery, production/assembly of the vehicles and operation of vehicles have better environmental impact when renewable energy is used.
- Ensuring pedestrian safety, inclusivity for women and people with disabilities.
- Alternate payment systems such as mobile money, mobile apps are available, or kiosks near rental/shared EMV to pay cash, or buy prepaid cards and smart cards.

4.3 FOLLOW-UP NEEDED AND/OR RECOMMENDED

- Study to verify benefits of the e-two wheelers in terms of energy and cost savings in transport systems by end users

4.4 BARRIERS

- Lack of political will to establish cycling policies and regulations, which can be addressed by entrepreneurs to demonstrate the feasibility and utility of certain EMV solutions
- Lack of user awareness, which can be addressed through awareness campaigns or witnessing successful use cases
- Lack of financing mechanisms, which can be addressed through partnerships or favorable financial terms (compared to more polluting alternatives)
- Lack of appropriate infrastructure, which can be addressed with adequate planning
- Poor implementation of cycling regulations and safety measures
- Range anxiety, which can be limited by promoting the use of micromobility solutions in tandem with public transportation options, and within city limits
- Lack of protective gear to account for weather/lack of willingness to use EMVs in rainy/snowy conditions (e.g. raincoats, rain covers, etc.)

4.5 RISKS

- Non-adherence to safety measures such as the wearing of helmets which can lead to accidents, especially those with visual or hearing impairments, or older and younger people [8].
- Inadequate infrastructure such as cycle lanes, cycle bridges, etc. which can lead to accidents.
- Slow uptake of EMVs due to the cost compared to mainstream options such as bicycles and motorbikes.
- Inadequate skills to operate or fix EMVs in times of breakdowns.
- Contribution to the generation of e-waste, for which alternatives can be explored such as using second-life batteries, or working with waste collectors
- Inadequate network of charging infrastructure, which can be explored in synergy with existing EV infrastructure
- Theft of EMVs, especially if there are dockless solutions.
- Pedestrian safety if using sidewalks, and non-docked solutions.
- Multi-tasking, turning while using hand signals [8]
- No passive/active safety features, crash test safety [8]
- Importing may cause price increases [12]

5. CLIMATE CHANGE MITIGATION POTENTIAL

A combination of measures is needed to achieve a cleaner transport sector, and e-two wheelers powered by green energy, especially solar, can become a pillar of sustainable mobility particularly in economically and demographically growing countries. This solution will expand the effort to reduce carbon emissions in the transport sector and also improve national energy security and create green jobs in the other sectors.

6. NATIONAL – SUBNATIONAL INTEGRATION IN THE CONTEXT OF THIS SOLUTION

6.1 BENEFITS TO LOCAL GOVERNMENT

- Local governments can be champions of building and promoting sustainable cities, and for the development of enabling policies at the local level that contribute to national priorities and mitigation targets.
- Greater opportunities for a wider-scale roll-out of EMVs and contributions towards the achievement of sustainable, clean transport.
- Visibility and recognition of local initiatives and success, as well as contributions to national targets and future planning considerations.
- Stronger partnerships to access funding for further implementation.

6.2 BENEFITS TO OTHER LEVELS OF GOVERNMENT

- Pilot testing and demonstration at local level, facilitating the replication of the initiative nationally.
- Local contribution to reduce the national dependence on fossil fuels in transport.
- Establishment of relevant policies frameworks and also infrastructure which are of other economic benefits.
- Peer learning and sharing of experiences, lessons learnt, challenges and success factors for collaboration with other local governments.
- Opportunities to attract investment into the country.
- Leveraging local initiatives towards the contribution of national targets and goals.

7. RESOURCES/SUPPORT

7.1 CASE STUDIES

CITY OF ROTTERDAM, NETHERLANDS

The Netherlands is one of the leading countries when it comes to cycling, with major cities such as Utrecht boasting 31% of cyclists and Amsterdam 30%. The City of Rotterdam in particular has taken bold action in order to promote and cater for urban cycling in the city. The city, having relatively lower cycling rates (18%), has transformed its city centre in favour of cycling by adding a significant amount of new cycle lanes (in total 600kms of lanes) and bicycle parking facilities. In addition, the city also has a large network of solar charging stations so that e-vehicles such as

e-two wheelers, e-cars and e-buses can charge their batteries. There are also options to rent bicycles if you do not own one, or utilise a shared mobility option through certain companies such as GO Sharing. Cycling is also promoted as one of the best ways to explore the city with many companies offering bike tours. The city also integrated rain sensors as part of their traffic light system in order to prompt other vehicles on the road to give cyclists the right of way when it is raining.

Source: Go Sharing, 2022

KAMPALA, UGANDA

NGO, Eurist e.V, in cooperation with FABIO Uganda is piloting an "African e-bike" in Uganda. The solar powered e-bike is considered an affordable and sustainable transport solution in order to promote a bicycle culture in the African continent, whilst meeting some of the specific needs and challenges in Africa. The e-bike is robust, and easily adaptable to serve many purposes. One such example is that some e-bike drivers are using it with a passenger attachment to serve as an ambulance so that residents in rural areas can access a medical facility during an emergency. Other uses include single passenger taxis, waste collecting and water delivery to name a few. These e-two wheelers can be used to improve many fundamental service delivery problems across Africa, and as a result can improve the lives of many of its citizens all whilst promoting sustainability and climate action.

Source: An African e-bike ambulance, 2022

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