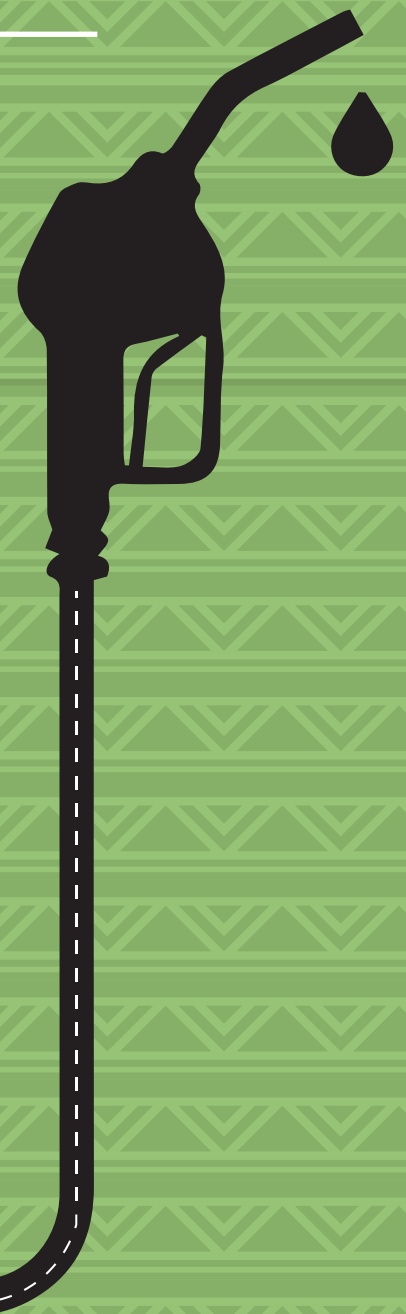# WEST AFRICA FUEL ECONOMY ROADMAP

Summary booklet for Policymakers

Background

Emissions from vehicles are a growing concern in the ECOWAS region

Despite relatively low motorization rates (number of vehicles per thousand people), ECOWAS countries are confronted with rapid growth of their vehicle fleet as a result of increasing transport demand, population growth, rapid urbanization, increasing motorization and other factors.

The region relies predominantly on the imports of used and older technology vehicles to respond to the growing need for mobility, yet this reliance on inefficient vehicles comes with significant climate, environmental and health costs. The fleetwide average fuel economy in the sub-region is among the lowest in the world, meaning that on average vehicles in the sub-region consume more fuel per travel distance, and cities are grappling with increasing air pollution mainly from traffic.

To address growing CO_2 emissions and air pollution from road transport in the sub-region, the United Nations Environment Programme (UNEP), the Economic Community of West African States (ECOWAS) Commission and countries in the sub-region have partnered to analyze greenhouse gas emissions (fuel efficiency) from light duty vehicles imported into the sub-region and vehicle policy frameworks. Thirteen countries were supported under the Global Fuel Economic Initiative (GFEI) to collect vehicle import data and estimate their average fuel economy baseline and trends. The countries also reviewed existing national policies and made policy recommendations to incentivize importation of more fuel economy vehicles. This roadmap, adopted by the ECOWAS Member States in September 2020, is based on these country analyses and recommendations.

ECOWAS Sub-region:

ECOWAS is a regional community of 15 Member States consisting of Benin, Burkina Faso, Cabo Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo; with a mission to promote economic integration in all fields of economic activities including road transport.

About the Global Fuel Economy Initiative (GFEI)

DOUBLE AVERAGE FUEL ECONOMY

OF NEW CARS BY 2030 AND ALL CARS BY 2050

2005 — GLOBAL AVG **8.3** LGE/100km
2013 — GLOBAL AVG **7.1** LGE/100km
2030 — GLOBAL AVG **4.2** LGE/100km

The GFEI is a partnership of six organizations - the International Energy Agency (IEA), the United Nations Environment Programme (UNEP), the International Council on Clean Transportation (ICCT), Institute for Transportation Studies at the University of California Davis, the International Transport Forum (ITF) and the FIA Foundation - working to secure real improvements in fuel economy and the maximum deployment of vehicle efficiency technologies across the world.

To achieve its climate and air quality objectives, the GFEI has developed the following sets of targets relative to the 2005 baseline for Light-duty vehicles (LDVs), heavy-duty trucks (HDTs), buses, and two and three wheelers (2- & 3-Ws).

Meeting these targets will require continued improvements in internal combustion engine efficiency, the introduction of electric vehicles, and the decarbonization of the global electricity grid.

GFEI TARGETS

Passenger light-duty vehicle targets
Double global fuel economy of new vehicles by 2030, reduce CO_2 emissions **90%** by 2050

Heavy-duty vehicle targets
Improve new vehicle fuel consumption **35%** by 2035 - CO_2 reduction target of **70%** by 2050

Transit bus targets
Improve fuel economy to reduce CO_2 emissions by **65%** by 2035 and **95%** by 2050

Two & three wheel vehicle targets
Improve fuel economy to reduce CO_2 emissions by **80%** by 2035 and **95%** by 2050

Decarbonising road transport to tackle climate change
A new fleetwide CO_2 reduction target of **65%** by 2050 compared with 2005. To comply with the Paris Agreement's less than 2 degree scenario, better fuel efficiency of conventional vehicle technologies; a faster transition to electric vehicles; a faster decarbonisation of the electricity grid; and additional 'avoid' and 'shift' measures eg more non-motorised mobility, are all needed

2030 **50%** | 2035 **35%** | 2035 CO_2 **65%** | 2035 CO_2 **80%**

2050 CO_2 **90%** | 2050 CO_2 **70%** | 2050 CO_2 **95%** | 2050 CO_2 **95%** | 2050 CO_2 **65%**

Source: GFEI Working Paper 20 - Data based upon 2005 baseline

The achievement of the GFEI targets will yield substantial benefits in terms of CO_2 emissions reductions, improvement in air quality, improved energy security and financial savings for consumers.

The transition to fuel efficient vehicles is particularly urgent in the ECOWAS region where rapid urbanization continues to put pressure on decisionmakers to respond to the increasing needs for mobility while addressing growing air pollution and CO_2 emissions. Moreover, as developed vehicle markets around the world tighten their fuel economy and vehicle emissions standards, electrifying their fleet and imposing stricter bans on ICE vehicles, the ECOWAS sub-region could continue to be a market for used and polluting vehicles that do not comply with the policies of the countries from which they are imported. However, with sound vehicle policies, ECOWAS countries can take advantage of the latest vehicle technologies in place in exporting markets to import cleaner and more fuel-efficient vehicles, including electric vehicles.

To date, several governments around the world have already committed to the GFEI goals, including the West African States (see map below). ECOWAS countries have taken a step further to develop a regional fuel economy roadmap towards meeting the GFEI targets. With 15 Member States, the region constitutes a large vehicle market. Harmonized clean vehicle policies across the region will deliver more rapid progress than isolated actions taken by individual States. The ECOWAS harmonized fuel economy roadmap is a regional effort that aligns with the "Vision 2020" seeking to transform "ECOWAS from a body of States to a Community of People".

This roadmap builds on a thorough review of the national fuel economy findings, consultations between national stakeholders, sharing of experiences between countries, meetings of technical experts, and several regional discussions convened by ECOWAS Commission to discuss proposals for actions to accelerate the implementation of the strategies. The roadmap was adopted by ECOWAS Sector Ministers in charge of the Environment, reviewed by the ECOWAS Parliament, and ratified by the ECOWAS Council of Ministers in September 2020.

Light-duty Vehicle Fuel Economy Policy Progress Worldwide

KEY

GFEI engagement

GFEI Baseline completed

Policy proposals developed

Policy Implemented
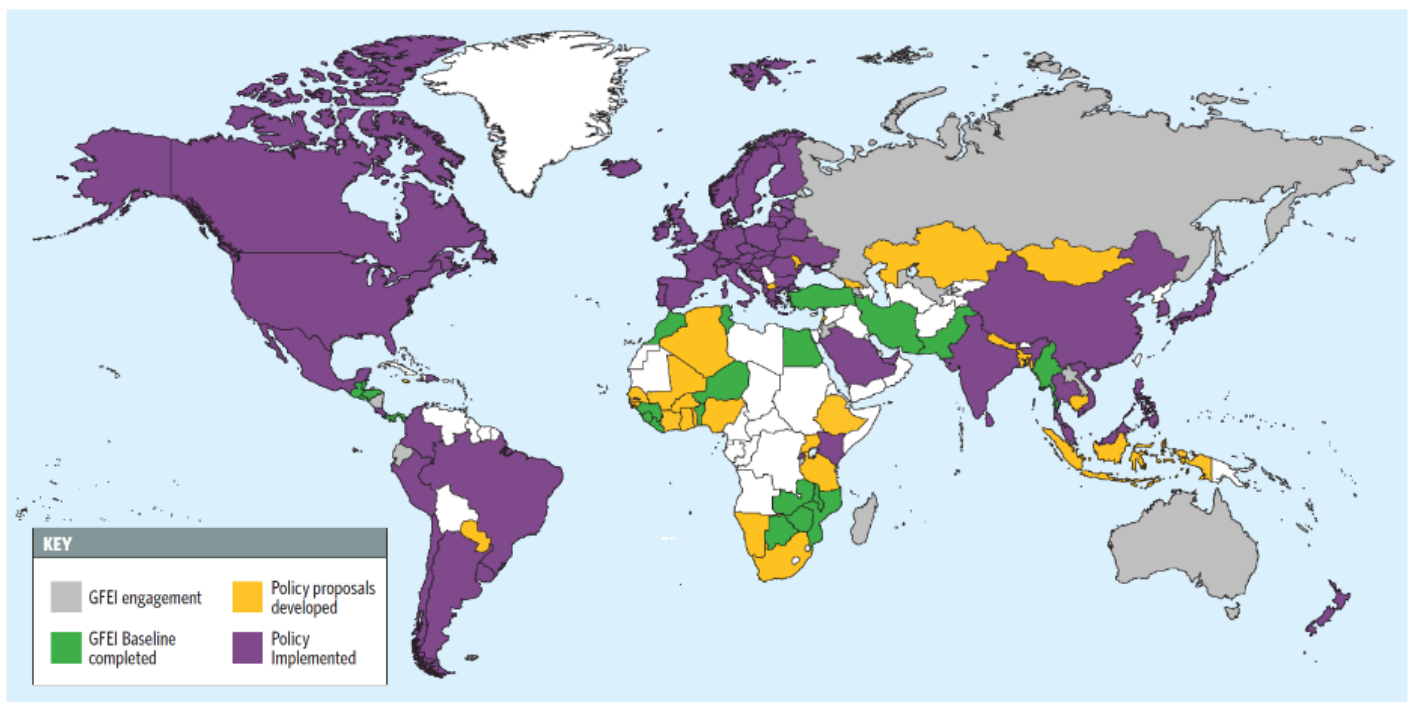
Source: GFEI, 2021

Key Findings from National Fuel Economy Baseline Analysis

Despite the significance of imported used vehicles in the region, few policies are in place to encourage the imports of cleaner vehicles

Rapid growth of the vehicle fleet:

Annual imports and registrations of LDVs and HDVs have significantly and steadily increased in ECOWAS States. The region depends on the import of vehicles to meet demand as vehicle manufacturing capacity is limited. Vehicles are imported predominantly from the European Union. Other import markets include the United States and Canada, and most vehicles enter the region through the ports of Lome - Togo, Tema - Ghana, and Cotonou - Benin. The GFEI analysis conducted in ECOWAS Member States reveals that all countries heavily rely on the imports of used vehicles, with the share of used vehicles exceeding 95% of annual imports in some States.

Furthermore, a large number of imported vehicles have exceeded their useful lifetime.

Very poor vehicle fuel economy:

Average annual fuel consumption is very high in the region, with fuel consumption above 9 lge/ 100km in a few States, compared to the fuel consumption of just below 6 lge/100km in Europe. Given the disproportionate contribution of used and polluting vehicles to impacts on climate and health, the transition to fuel-efficient vehicles is particularly urgent in the ECOWAS region. There is a large window of opportunity for ECOWAS States to take advantage of the latest technologies in major markets.
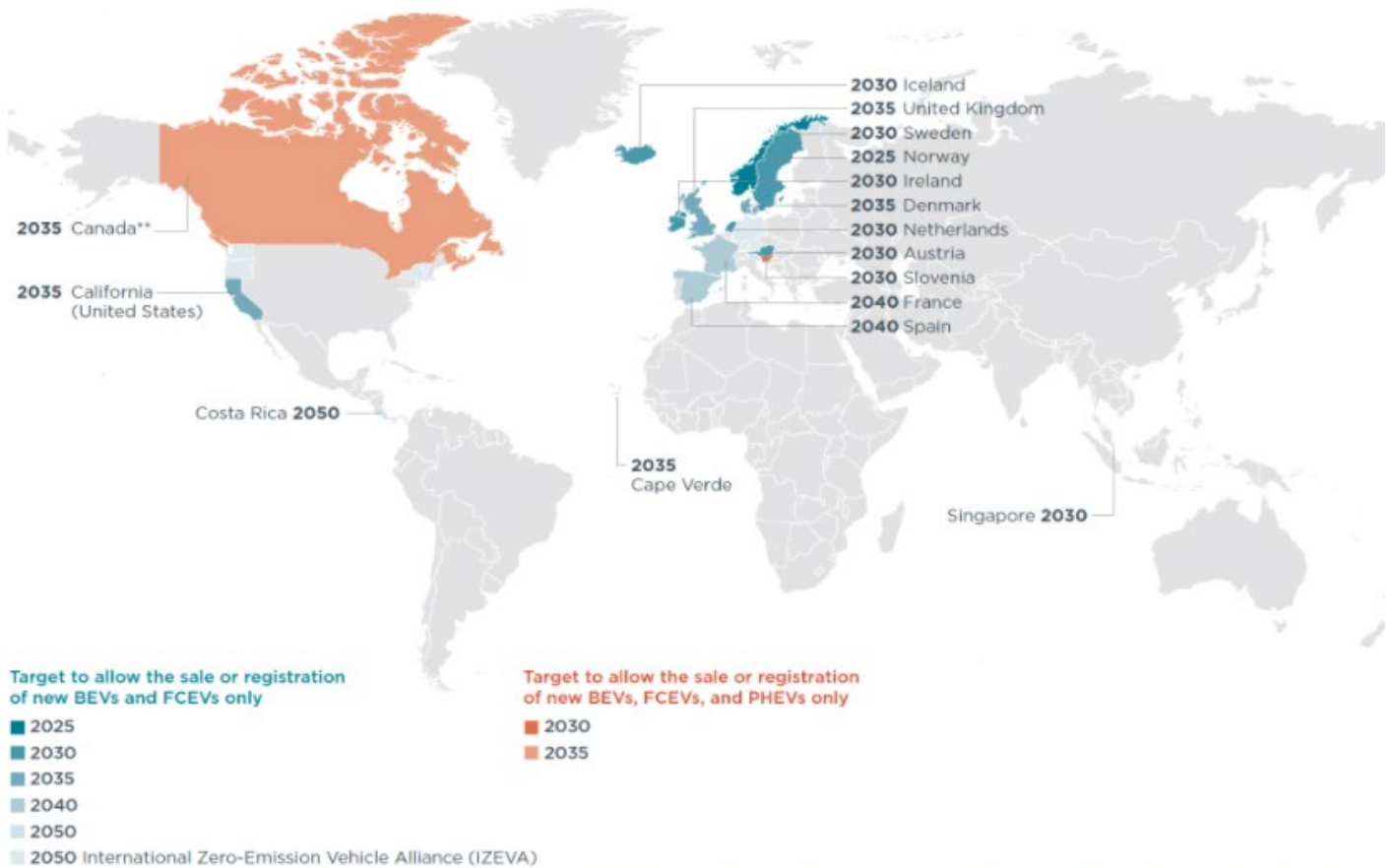
The rapid growth of 2- and 3-wheelers:

An increasing number of people in the region rely on motorcycles and tricycles for the transport of people and goods as an alternative to four-wheeled vehicles, leading to a growing demand for this transport mode. In some States, the fleet of motorcycles has already exceeded 1 million. These 2- and 3- wheelers are predominantly imported brand-new or at very low ages from China, India and other Asian markets. Yet, these engines are important sources of fuel consumption, CO_2 emissions, air pollution, traffic congestion and road safety concerns. Opportunities exist for ECOWAS States to accelerate the import of electric 2- and 3- W, which have smaller batteries and shorter charging time.

EVs and electric 2- and 3-wheelers are yet to be adopted:

Although the majority of the imported vehicles and 2- and 3-wheelers originate in the EU, North America, and China which have clean technologies and electric vehicles and motorcycles in place, most ECOWAS Member States do not have incentives to facilitate the import of electric vehicles. Only Cape Verde has adopted national targets to shift completely to electric mobility by 2050. All that is needed is for ECOWAS States to review their regulatory framework to encourage the uptake of electric mobility, and to put in place the right infrastructure.

Governments with official targets to 100% phase out sales or registrations of new internal combustion engine cars by a certain date*
(Status: August 2021)

2030 Iceland
2035 United Kingdom
2030 Sweden
2025 Norway
2030 Ireland
2035 Denmark
2030 Netherlands
2030 Austria
2030 Slovenia
2040 France
2040 Spain

2035 Canada**

2035 California (United States)

Costa Rica 2050

2035 Cape Verde

Singapore 2030

Target to allow the sale or registration of new BEVs and FCEVs only
- 2025
- 2030
- 2035
- 2040
- 2050
- 2050 International Zero-Emission Vehicle Alliance (IZEVA)

Target to allow the sale or registration of new BEVs, FCEVs, and PHEVs only
- 2030
- 2035

* Includes countries, states, and provinces that have set targets to only allow the sale or registration of new battery electric vehicles (BEVs), fuel cell electric vehicles (FCEVs), and plug-in hybrid electric vehicles (PHEVs). Countries such as Japan with pledges that include hybrid electric vehicles (HEVs) and mild hybrid electric vehicles (MHEVs) are excluded as these vehicles are non plug-in hybrids.
** The Canadian province of British Columbia has set its 2040 target into binding regulation; the Canadian province of Québec has also set a target for 2035.

Source: https://ukcop26.org transport/

Weak and sparse environmental regulations on the import of vehicles:

The GFEI studies show that despite the importance of the import of used vehicles in the region, there is little regulation on the environmental performance of the imported vehicles. Across member States, regulations are sparse and vary, ranging from the most stringent 5-year age limit on imported LDVs in Cote d'Ivoire, to no import restrictions in most States. This disparity makes the harmonized framework developed by ECOWAS even more relevant. The adoption of harmonized vehicle emissions regulations by the region in 2020 will address this shortcoming once fully implemented.

No fiscal incentives:

ECOWAS States have set little fiscal incentives to encourage the imports of clean vehicles. Only a few States have additional fees for vehicles older than 10 years. There are no incentives based on vehicle environmental performance (fuel consumption, CO_2 emissions, vehicle emissions standards). The implementation of harmonized fiscal policies that promote clean vehicles will give a strong signal to consumers.
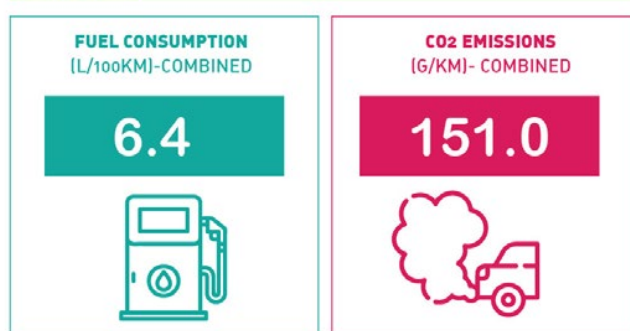
Lack of vehicle labeling schemes:

None of the ECOWAS Member States have labeling schemes in place to help consumers make informed decisions when purchasing a vehicle. Labeling schemes also reinforce the effectiveness of other fuel economy policies such as vehicle CO_2 emissions and fiscal policies. These schemes encourage vehicle manufacturers and importers to bring in vehicles with the best fuel economy technology available.

Limited consumer awareness on the environmental performance of vehicles:

Although air pollution and CO_2 emissions have become an increasing concern in ECOWAS Member States particularly in cities, consumer programs to raise awareness and encourage the purchase of clean vehicles is non-existent in most States.

VEHICLE MAKE: FUEL TYPE:
MODEL: ENGINE SIZE:
VARIANT:

YOUR CHOICE WILL HELP PROTECT THE ENVIRONMENT.

FUEL CONSUMPTION (L/100KM)-COMBINED
6.4

CO2 EMISSIONS (G/KM)- COMBINED
151.0

ACTUAL FUEL CONSUMPTION AND CO2 EMISSIONS DEPEND ON FACTORS SUCH AS TRAFFIC CONDITIONS, VEHICLE CONDITION AND HOW YOU DRIVE. MORE INFORMATION AT: HTTPS://ECOWAS.INT/

For effective implementation of fuel economy measures, awareness programs and actions are required at all levels of consumer groups, from the public to fleet owners and government agencies.

Vehicle data collection to be improved:

One of the key findings of the GFEI studies is that ECOWAS Member States do not keep track of important environmental attributes of the imported vehicle fleets. States need to capture environmental performance data including the emissions certification levels, fuel consumption, CO_2 emissions, and test cycles of the imported vehicles. Data has become an essential tool to inform policymakers and to monitor policy progress.

The average fuel economy values in each State, and the sales-weighted average fuel economy across ECOWAS Member States for which data was available are summarized below and further confirm that fuel consumption in the region remains high, despite declining trends in most markets from which vehicles are imported.

Country	2005	2008	2010	2011	2013	2014	2015	2016	2017	2018	2019	2020
Benin	9.69	-	10.67	-	10.48	-	9.92	-	-	-	-	-
Burkina Faso	8.2	8.26	-	7.4	7.89	-	8.05	-	7.48	-	-	-
Cote d'Ivoire	-	-	-	-	8.47	8.46	7.98	-	-	-	-	-
Gambia	7.73	-	7.89	-	7.95	-	8.39	-	7.84	-	-	-
Ghana	7.38	7.41	-	7.26	7.05	-	6.99	-	-	-	-	-
Guinée Bissau	-	-	-	-	-	-	8.1	8.2	8.3	9.0	8.6	9.0
Liberia	7.89	8.12		7.96	7.93	-	7.79	-	-	-	-	-
Mali	7.9	8.1	8.4	8.4	8.4	8.5	8.5	8.5	8.5	-	-	-
Niger	10.34	10.15	-	10.21	9.14	-	9.28	-	7.46	-	-	-
Nigeria	-	-	-	-	9.73	9.66	9.56	9.49	9.19	-	-	-
Senegal	-	-	-	-	-	-	-	10.48	-	-	-	-
Sierra Leone	-	-	11.8	11.8	10.8	10.1	9.4	-	-	-	-	-
Togo	-	-	-	-	8.3	8.1	8.0	8.0	-	-	-	-
Weighted average[1]	**7.46**	**7.74**	**-**	**8.10**	**7.69**	**8.16**	**7.63**	**8.00**	**7.47**	**-**	**-**	**-**

1 Sales-weighted average fuel economy across ECOWAS. Member States for which data was available: Burkina Faso, Cote d'Ivoire, Ghana, Liberia, Niger, and Togo

The average fuel economy of selected African countries compared to the global average and EU levels is shown in the line chart below. This shows that the average fuel economy of most African countries is above the fuel economy of about 70 countries analyzed globally through the GFEI programme and above the EU levels, where most of the vehicles, especially in the West and North Africa are sources from.

Average fuel consumption baseline and trends in GFEI-supported countries in Africa
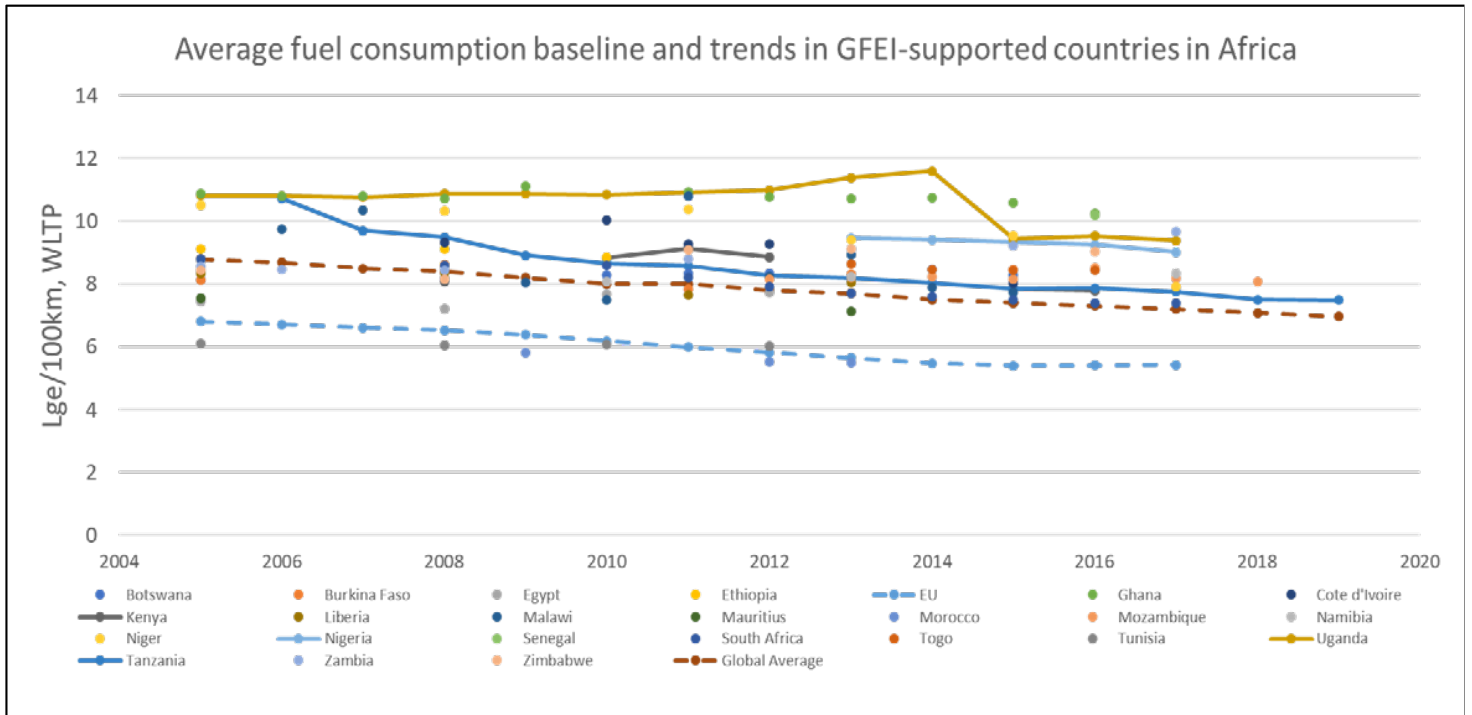
ECOWAS Regional Fuel Economy Roadmap

A regional approach for greater impacts

The Regional Fuel Economy Roadmap creates an opportunity to significantly limit CO_2 emissions from the growing vehicle fleet in the region. It provides a framework through which all Member States and relevant stakeholders will be able to coordinate their actions and combine their efforts to ensure clean and sustainable transportation to populations.

01 Regional fuel economy targets.

Improve fuel economy to reach a regional average fuel economy target of 5 lge/100km by 2025, and 4.2 lge/100km by 2030 for newly imported or registered light-duty vehicles in the ECOWAS region

COP26

At COP26, more than 100 governments, cities and industry players committed to end new sale of internal combustion engines by 2035 in leading markets by 2040 world-wide, with the UK committing to end new sale of petrol and diesel vehicles by 2030.

02 Enable and accelerate the adoption of electric vehicles and motorcycles.

ECOWAS Member States to develop a regional roadmap for transitioning to zero emission vehicles (ZEVs) with a target for ZEVs and electric two- and three- wheelers. The roadmap will include fiscal and non-fiscal measures to support the introduction of ZEVs and appropriate charging and fueling infrastructure. These measures will be accompanied by policies targeting in-use vehicles, such as mandatory scrapping policies. Governments are encouraged to renew their fleets with electric vehicles and Member States are encouraged to take steps to reduce the import and use of diesel LDVs.

03 Harmonize framework for vehicle registration, reporting and data collection.

ECOWAS Member States to develop and implement a common set of vehicle registration and mandatory reporting guidelines to standardize vehicle tracking and data collection in the region.

04 Secure national leadership and strengthen regional cooperation on fuel economy.

National and regional cooperation is essential to achieving the fuel economy targets. At the national level, each Member State should build institutional capacity, designate the lead institution for fuel economy initiatives and regularly assess progress. At the regional level, cooperation and sharing of experiences should be strengthened.

05   Harmonize vehicle labeling schemes.

Member States must draw up harmonized regulations on fuel economy labeling. Labeling schemes are implemented as measures for consumer information and aim at making vehicle fuel economy and CO_2 emissions information widely accessible to consumers. Vehicle labeling promotes fuel economy by raising consumer awareness, guiding their choice, and helping them make informed purchase decisions. Labeling schemes also reinforce the effectiveness of other fuel economy policies such as vehicle CO_2 emissions standards and fiscal policies. These schemes encourage vehicle manufacturers and importers to bring in vehicles with the best fuel economy technology available.

06   Promote communication, awareness, and information programs.

ECOWAS Member States must promote information, communication and awareness-raising on fuel saving measures. Comprehensive information measures are essential to the successful implementation of fuel economy policies. Consumer information programs can be implemented through awareness campaigns, outreach to promote improvement of vehicle operational efficiency including eco-driving, strategies for fuel savings, market research to survey consumer expectations, collection of in-use fuel consumption performance data, information on alternative vehicles, websites, major media, communication channels to answer consumers' questions and other measures. Information should also be provided to government agencies in terms of capacity building, and to policymakers and governments to help them examine the costs and benefits of improved vehicle fuel economy measures.

07   Introduce and harmonize vehicle fiscal policies based on vehicle CO_2 emissions and fuel economy performance.

ECOWAS Member States must introduce tax policies based on the reduction of CO_2 emissions and improvement of fuel economy from vehicles; CO_2 -based or fuel economy-based fiscal policies seek to encourage vehicle buyers to choose clean and fuel-efficient vehicles, and thereby help governments to manage the environmental performance of the vehicle fleet. In most ECOWAS countries, existing fiscal policies on vehicle purchase and use are not based on CO_2 emissions. The introduction and enhancement of CO_2 emission-based fiscal policies will contribute to achieving the regional targets.

08   Harmonize in-use vehicle emissions control programs.

 Member States must harmonize the emission control programs of the vehicles in service in the region. Controlling emissions from the in-use fleet particularly to identify high-emitting vehicles can help reduce emissions from transportation. In-use vehicle emissions control programs include inspection and maintenance programs, remote sensing, spot-checking, removing high emitters from the roads, clean fuels programs, and establishing low-emissions zones, etc. Harmonized programs such as aligning inspection and maintenance programs across ECOWAS Member States will help reduce emissions and clean up the vehicle fleet in the region.

09 Implement regional CO$_2$ emissions or fuel economy standards.

ECOWAS member States must develop regional standards for CO$_2$ emissions or fuel economy with regulations setting targets for fleet average to vehicle manufacturers. CO$_2$ standards refer to regulations that directly limit carbon dioxide emissions from the vehicle fleet, and fuel economy standards indirectly limit carbon emissions.

10 Promote public transport, non-motorized transport infrastructures and alternative fuels.

Member States must develop alternative fuels, eco-driving, and other sustainable mobility infrastructure, including the improvement of sustainable public transport and non-motorized transport.
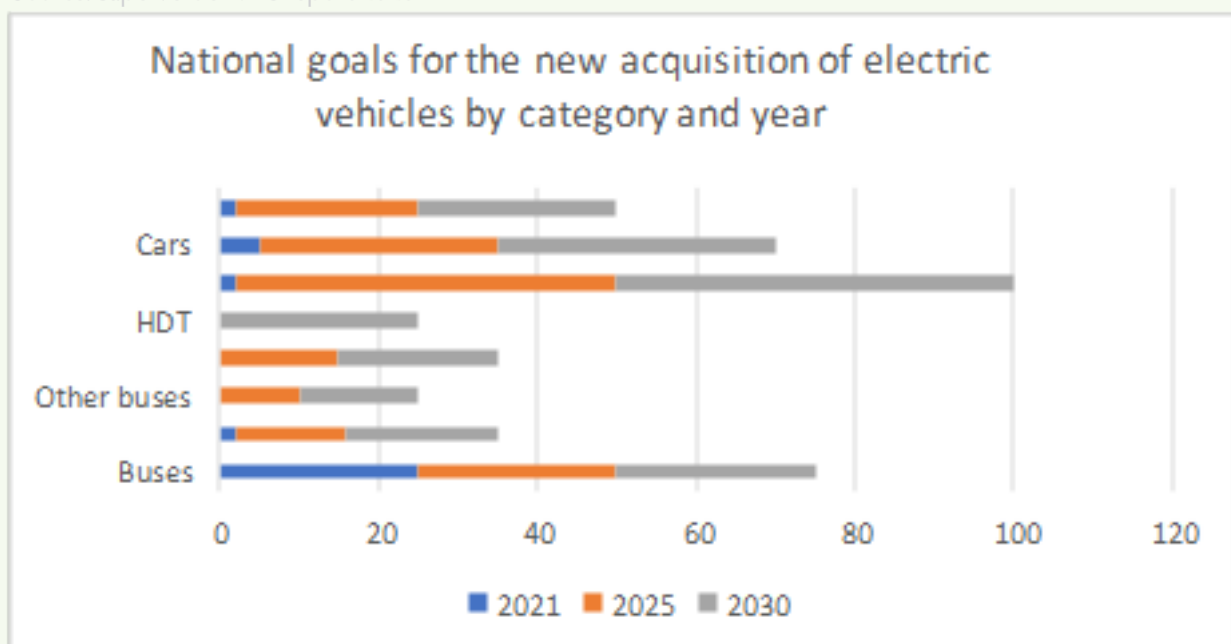
CASE STUDY: CAPE VERDE

Cape Verde is the first African country to commit to a target to electrification of all vehicle fleet by 2050. At the COP 26 other African countries namely Ghana, Kenya, Morocco and Rwanda and Lagos city pledged to "work intensely towards accelerated proliferation and adoption of zero emission vehicles.

Cape Verde's NDC and legislation has committed to the following targets to zero emission vehicles:

- Electrify the vehicles fleet with a priority for public, collective, high-passenger load, duty and commercial vehicles over private, individual, low-passenger load vehicles, to make this mobility shift socially inclusive and create public adherence and local jobs;
- By 2050, fully replace all residual thermal vehicles (gasoline/ diesel) for Electric Vehicles (EV);
- Implement the NAMA "Promotion of EV in Cabo Verde" and the Electric Mobility Action Plan involving;
- By 2025, establish the procurement rules for the acquisition of 100% EV by institutional entities and have at least 50% of EV in the new acquisition of urban collective;
- Gradually install of a wide-reaching network of recharging stations, with priority to public, collective, grouped charging

stations at bus/taxi/company stations benefiting the greatest number of users, complemented by private stations; starting in the main urban centers of Cabo Verde and along strategic road corridors;
- By 2030, the national public recharge infrastructure is fully implemented;
- By 2030, the public administration's vehicle fleet is fully electrified. centers of Cabo Verde and along strategic road corridors;
- By 2030, the national public recharge infrastructure is fully implemented;
- By 2030, the public administration's vehicle fleet is fully electrified.

Source:Cape Verde NDC report 2020

National goals for the new acquisition of electric vehicles by category and year

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GLOBAL FUEL
ECONOMY
INITIATIVE
FOR ZERO CARBON VEHICLES BY 2050

UN
environment
programme