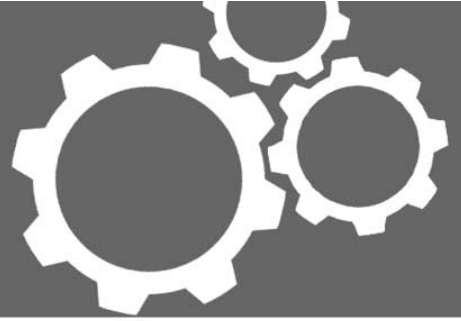




TECHNICAL BRIEF

Nigeria Fuel Subsidy Removal

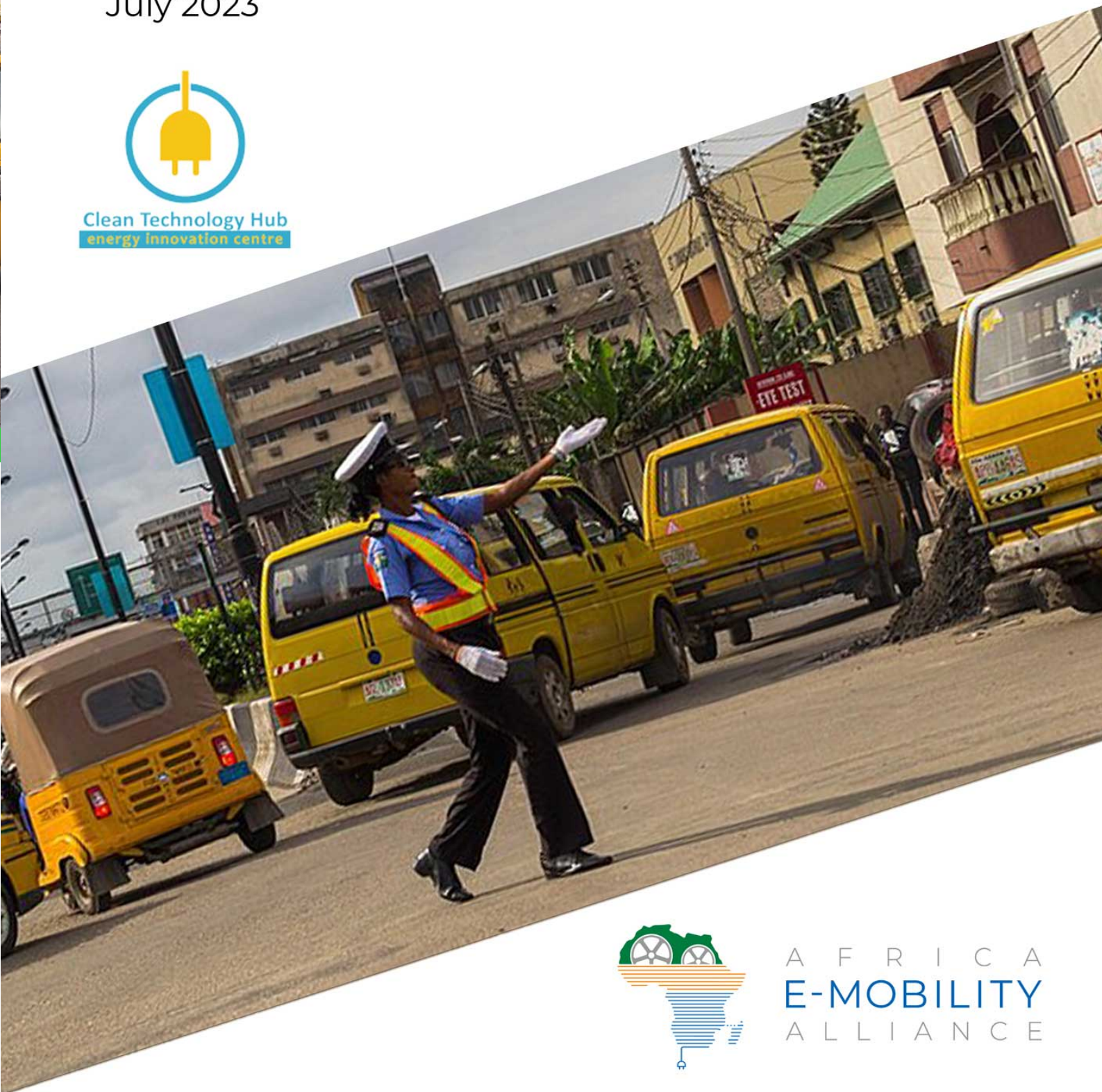
TIME FOR ELECTRIC MOBILITY?



July 2023



Clean Technology Hub
energy innovation centre



A F R I C A
E-MOBILITY
A L L I A N C E

AT A GLANCE

An overview of the fuel subsidy

On 29 May 2023, during his inauguration speech, the new President of Nigeria announced that subsidies on petroleum motor spirit (PMS) were no longer in place. Fuel prices across the country skyrocketed as a result. This is the second serious attempt to end fuel subsidies in oil-rich Nigeria since they were put in place in the 1970s to help cushion the effects of rising inflation on Nigerians. The first attempt, in 2012, was met by nationwide protest that forced the federal government to capitulate.

This time, however, the government appears to be unrelenting. The federal government is on the brink of a debt crisis, with its debt servicing reaching **96.3% of revenues in 2022**. Fuel subsidies amount to about \$10 billion annually, about **24%** of the country's 2022 budget. Notwithstanding the short-to-medium term burden that increased fuel prices causes for Nigerians, the main expectation is that by removing fuel subsidies and leaving fuel prices to reflect market realities, there would be long-term benefits in terms of fiscal sustainability, investment in the downstream oil industry and the stimulation of new industries and solutions such as mass transit and electric mobility.



One of the first commercial EV in Nigeria by Jet Commercial Vehicles Limited

The impact on electric mobility is expected to be particularly substantial, as Nigeria's comparatively low fuel prices limit the take off of the electric vehicle market in the country. Although frequent incidences of fuel scarcity and the availability of solar technologies for private charging infrastructure have driven the emergence of a few e-mobility companies and sales in Nigeria, sales have largely been limited to high-income consumers and businesses such as logistics and transport companies that can afford them. Higher fuel prices are likely to not only increase this demand, but also stimulate demand for passenger electric vehicles.

REGIONAL IMPACTS

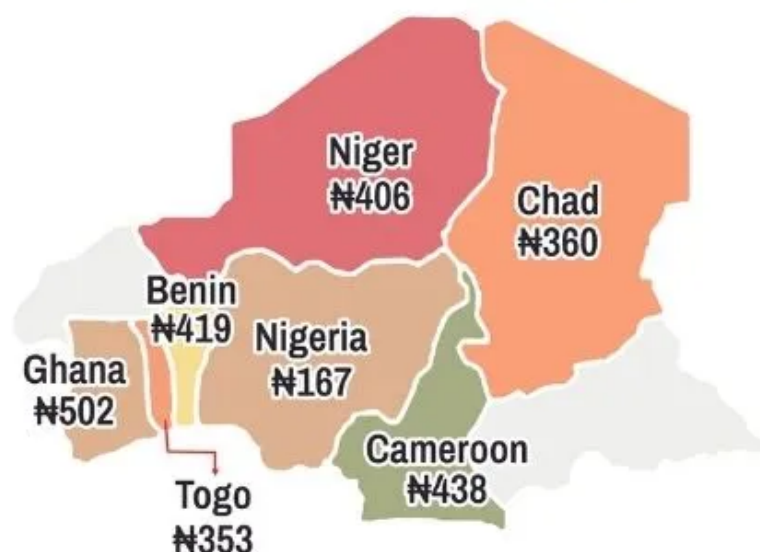
A pillar of West African economies

Nigeria's fuel subsidy withdrawal has regional implications. [Subsidised fuel from Nigeria has long been smuggled](#) to neighboring Benin, Cameroon, Chad, Niger and other countries in the region. In recent years, anywhere between [30 - 48](#) million litres a day - around 45% of official consumption in Nigeria - has been estimated to leave the country by the Nigerian National Petroleum Company Limited. This smuggled petrol has fed illegal roadside stands for years across the region. In Cameroon, [black market fuel can sell](#) for 350-400 CFA per litre, 33% less than the official 600 CFA price.

In Benin, kpayo (black market petrol) [sellers can earn around \\$0.16 per litre](#), and still sell below the official rate.

Since the announcement by President Tinubu, [the price of kpayo doubled](#), while in Cameroon moto-taxi drivers announced they would go on strike and raise prices for customers. While this is causing short-term pain for operators, they will undoubtedly adjust their prices to fit the new dispensation. Importantly, it will also make it more attractive to adopt the electric vehicles on offer from companies across the region.

Incentive for smuggling: Petrol price gulf between Nigeria & neighbours



Credit: Businessday NG

IS IT CHEAPER TO GO ELECTRIC IN NIGERIA?

Energy cost implication for every 100km covered

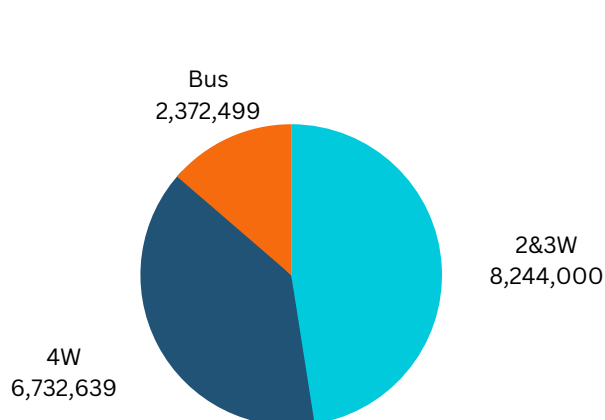
INTERNAL COMBUSTION ENGINE		ELECTRIC VEHICLE
Fuel cost before → after subsidy removal		Current electricity cost
₦ 692 → 1,992 at 3.74l/100km		₦ 90 at 4kWh/100km
₦ 1,591 → 4,580 at 8.6l/100km		₦ 352 at 15.6kWh/100km
₦ 6,383 → 18,371 at 34.5l/100km		₦ 2,810 at 124.6kWh/100km

As shown above, the energy cost for an EV in Nigeria is cheaper before and after the removal of the fuel subsidy. For example, a E2W is currently up to 21 times cheaper to drive compared to ICE 2W while it was 8 times cheaper before the removal of the fuel subsidy.

*Electricity and fuel data were taken from globalpetrolprices.com

EV MARKET SIZE

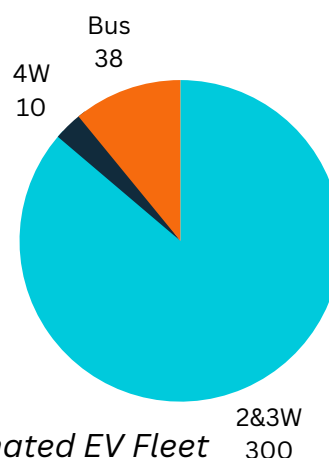
EV vehicles fleet compared to ICE vehicles



ICE Vehicles Fleet

Like many other countries in Africa, Nigeria has a large fleet of motorcycles & tuktuks despite official bans in several major cities. As low-cost vehicles with short lifetimes, they are viewed as the low-hanging fruit in the e-mobility transition. Despite this, out of the 13 e-mobility companies in the country, only 5 companies deal with 2&3W.

The current EV fleet in Nigeria consists of at least 348 vehicles, representing a mere 0.002% of the total vehicle fleet of 18 million. Applying [International Energy Agency \(IEA\)](#) projections to Nigeria, which forecast that 7% of vehicle fleets will be electric by 2030, the country is estimated to have at least 1.3 million EVs by that year. According to AFEMA estimates, this projected increase in EV adoption in Nigeria would lead to a substantial surge in electricity demand, necessitating a 38% increase in electricity production from the 2021 level of 36,400 GWh.



Estimated EV Fleet

Despite the existing reliance on solar energy for the current limited EV infrastructure in the country, the [current installed solar capacity of only 30 MW](#) falls significantly short of meeting the anticipated demand. Consequently, the government will need to make significant investments in electricity production to cater to this growing EV charging requirement. The funds saved from the removal of fuel subsidies could potentially be allocated toward such investments.

Moreover, improving the electric grid infrastructure would not only address the needs of the expanding e-mobility sector but also have broader benefits. Currently, only 53% of the population has access to the grid, indicating the need for enhanced grid accessibility. Investing in grid improvements would benefit both the e-mobility industry and a larger portion of the population, enabling better access to reliable electricity services.

REMAINING CHALLENGES

On consumers and immediate economic impact

Nigeria has the largest electricity access gap in Africa, with over 85 million people lacking grid electricity access. A frequent question raised by Nigerians when e-mobility is discussed is how the vehicles will be charged when electricity is insufficient. [The national grid suffers from major weaknesses](#) along the entire value chain from generation, transmission to distribution that have been difficult to address.

Given the limited affordability of solar-powered private charging stations and the upfront costs associated with electric vehicles, many Nigerians would not be able to afford such infrastructure. To promote the growth of the electric vehicle market in Nigeria, it is crucial to implement a combination of strategies. This includes the mass deployment of electric vehicle charging stations across the country and the provision of battery swapping services by private entities.

While the government plays a vital role in creating an enabling environment for e-mobility, such as implementing supportive policies and regulations, it is essential to involve both public and private sectors in the development of charging infrastructure. Collaborative efforts between government agencies, energy providers, and private businesses can help address the challenges associated with charging electric vehicles in Nigeria. By establishing a comprehensive charging network and battery swapping services, the adoption and usage of electric vehicles can be facilitated, even in areas with limited access to electricity.

Addressing the electricity access gap and improving the national grid's reliability will remain critical for the successful integration of e-mobility in Nigeria.

CONCLUSION

Direct and indirect benefits from the petrol subsidy removal

The removal of subsidies presents several benefits for accelerating the adoption of electric vehicles. This action highlights the ongoing high costs associated with using fuel-powered cars, both for commercial and private purposes. Considering that the transportation sector intersects with crucial sectors like agriculture, any increase in transportation expenses directly affects the country's economic development.

In addition to the aforementioned benefits, the removal of subsidies can have other direct and indirect benefits as well. One significant benefit is the allocation of a freed-up budget for EV subsidies and investments.

The government should redirect the funds previously used for fuel subsidies towards improving electricity grid stability and access and electric vehicle incentives. This reallocation of subsidies can attract more investment in these areas and stimulate further growth and innovation. This would be a major boost to the manufacturing and technology sectors of the economy.

Overall, the removal of subsidies presents an opportunity to accelerate the adoption of electric vehicles in Nigeria, develop a 21st century economy, and in the long term, provide major savings on transportation.

About Clean Technology Hub

Clean Technology Hub is a pioneering hybrid hub for the research, development, demonstration and incubation of clean energy ideas, technologies, and resources for clean energy organizations and environment and climate friendly initiatives across Africa.

About Africa E-mobility Alliance

The Africa E-mobility Alliance (AfEMA) is a neutral and collaborative platform that brings together stakeholders from the electric mobility industry in Africa. We envision that by 2030, 30% of all vehicles sold in Africa will be Zero Emission Vehicles (ZEVs). AfEMA actively drives awareness, activates markets, and catalyzes advocacy efforts to transform the transportation landscape into a zero-emission sector.

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