Scaling Electric Public Transport in Africa:

A BasiGo Case Study

P4G
Pioneering Green Partnerships, Investing in Impact

BASIGO

Practical ACTION

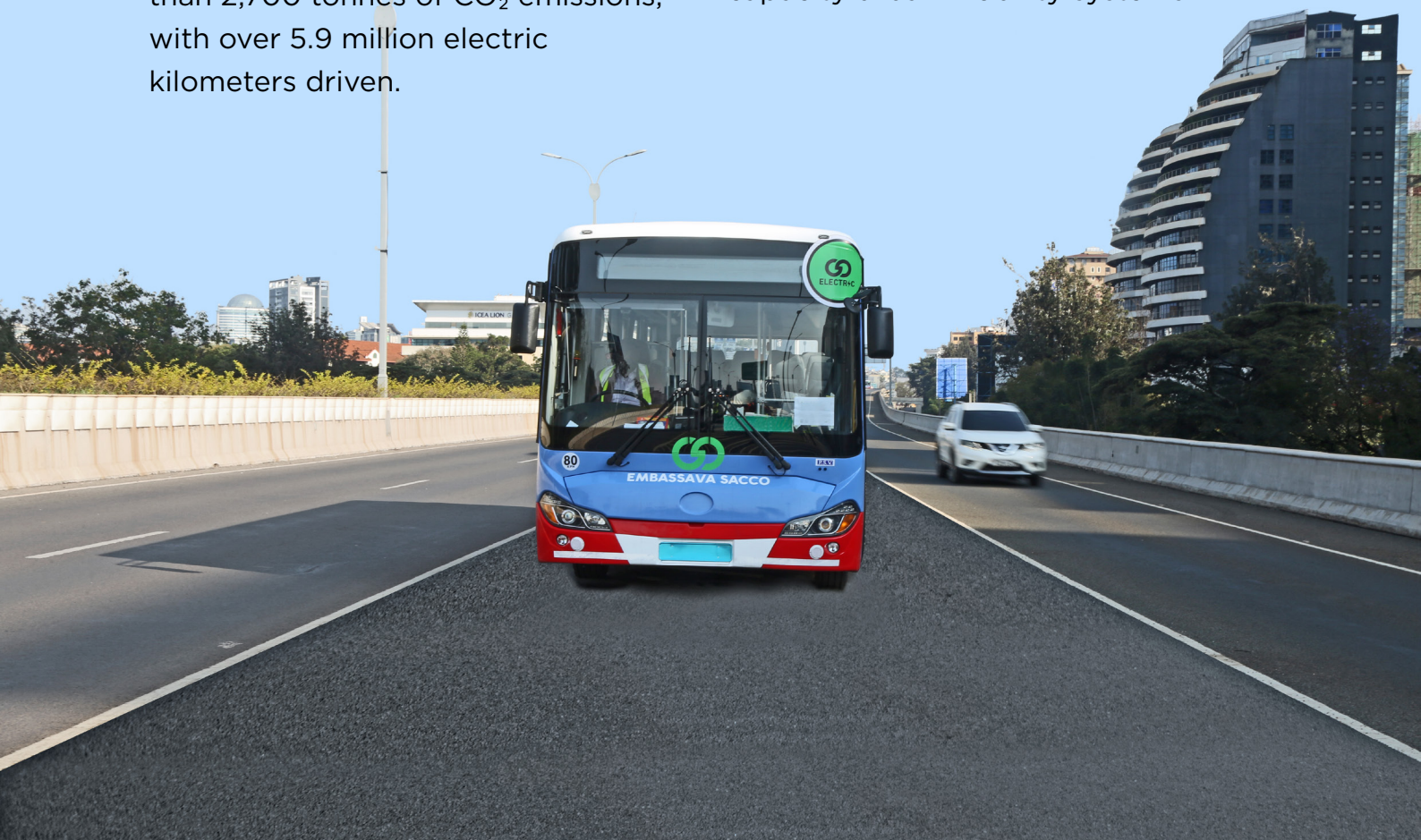
Executive Summary

BasiGo is transforming Kenya's public transport sector by enabling fleet operators and bus owners to shift from diesel buses to fully electric, low-emission alternatives - without the high upfront costs typically associated with electric vehicles (EVs). Through its Pay-As-You-Drive (PAYD) financing model, integrated charging and maintenance services, and local assembly at Kenya Vehicle Manufacturers (KVM), BasiGo is accelerating clean mobility while creating local economic value.

As of October 2025, BasiGo has deployed 76 electric buses in Kenya, carrying more than 8.2 million passengers, avoiding over 1.18 million liters of diesel, and mitigating more than 2,700 tonnes of CO_2 emissions, with over 5.9 million electric kilometers driven.

This model directly advances Kenya's Nationally Determined Contributions (NDCs) under the Paris Agreement, the National e-Mobility Policy (2025), and the transport decarbonization targets outlined in the National Climate Change Action Plan (NCCAP 2023–2027). Electrifying public transport addresses a critical national challenge: diesel-powered buses are significant contributors to urban air pollution and associated respiratory health impacts.

BasiGo demonstrates that Kenya can rapidly decarbonize public transport by coupling renewable-powered charging infrastructure with innovative financing and reliable operational support tailored to high-capacity urban mobility systems.



The Case for Change: Decarbonizing Public Transport in Africa

Kenya's public transport system is overwhelmingly powered by diesel, with thousands of privately operated minibuses and buses - especially the iconic matatus, serving as the backbone of daily urban mobility. Nairobi alone is estimated to host more than 20,000 diesel buses, many of which are aging, inefficient, and lack modern emission controls.

While these vehicles are vital to economic activity and urban movement, they come at a significant environmental and public health cost. Diesel-powered buses are among the largest contributors to transport-related emissions in Kenya, driving urban air pollution and accelerating climate impacts. The result is a mobility system that moves millions, but at the expense of clean air, respiratory health, and progress toward national climate goals.

Kenya now faces a pivotal opportunity: to modernize public transport by shifting to clean, electric mobility solutions that reduce emissions, improve air quality, and strengthen local industries, while maintaining affordability and reliability for passengers and operators alike.

The Growing Challenge

Air Quality and Public Health:

Traffic-related emissions are now the largest source of fine particulate matter ($PM_{2.5}$) in Nairobi. These emissions worsen air quality, increase respiratory illnesses, and contribute to thousands of premature deaths each year. For example:

- [1]In 2019, approximately 2,500 premature deaths (~15 % of all premature deaths in Nairobi) were attributed to air pollution in the city.
- [2]Nationally, air pollution caused more than 30,000 premature deaths in Kenya in 2021, equivalent to about 8 % of all deaths nationwide.

Economic Strain:

Fuel costs represent up to 40% of fleet operating expenses. Since the removal of fuel subsidies, diesel prices have risen by over 80%, reaching KSh 165–175 per litre between 2024 and 2025. This volatility has eroded operator margins, often forcing reduced maintenance and compromising safety.

1 Clean Air Fund. (n.d.). *Nairobi and air pollution.* https://www.cleanairfund.org/clean-air-africas-cities/nairobi-and-air-pollution/

2 Health Effects Institute. (2022). *State of global air 2022: Air pollution and health in Africa.* https://www.stateofglobalair.org

Dependence on Imports:
Kenya's transport sector relies entirely on imported diesel. Fuel imports are the largest use of FX reserves in the country. This dependence on imported fuel directly exposes the Kenyan economy to macroeconomic shocks in fuel and currency markets. This was experienced firsthand in April 2022 during the country's fuel crisis.

Outdated Fleet:
Most public service vehicles (PSVs) remain old, inefficient, and poorly maintained - resulting in high emissions, elevated operating costs, and low service reliability.

While these challenges are most acute in Kenya's urban centres, they reflect a broader continental reality. Preliminary modelling by BasiGo suggests that replacing Africa's outdated bus fleet could require tens of billions of US dollars, representing a significant annual market opportunity. The scale of this transition shaped by assumptions around fleet size, vehicle replacement costs, and financing terms has the potential to drive cleaner cities, healthier communities, and more resilient transport systems across the continent.Policy Momentum

Kenya is advancing a strong policy framework to accelerate the shift toward clean and electric public transport, supported by both national priorities and global commitments. Electrification is now embedded within key policy instruments, including:

- **Sustainable Development Goals (SDG 7, 11, 13):** Advancing clean energy, sustainable cities, and climate action.
- **Paris Agreement:** Aligning Kenya's climate actions with global decarbonization goals.
- **Kenya's 2023 Finance Act** which provides for import and commercial tax reductions for electric vehicles.

- **Kenya's "National e-Mobility Policy (2025)":** Providing a clear framework for scaling electric vehicle adoption across the transport sector.
- **Kenya's Updated Nationally Determined Contribution (NDC) (2020):** Targeting a 32% reduction in greenhouse gas emissions by 2030, relative to the business-as-usual scenario.
- **African Union Climate Change and Resilient Development Strategy and Action Plan (2022–2032)**[3]: A continental blueprint for equitable, low-emission growth, prioritizing mobility and transport transformation among nine key areas.

Together, these policy signals underscore a growing national and regional commitment to clean, modern, and climate-resilient public transport systems.

A Unique Advantage

Kenya's electricity grid is powered by over 90% renewable energy (80% domestic renewable generation + 10% renewable imports from Ethiopia and Uganda's hydropower) (EPRA, Energy & Petroleum Statistics Report 2024/25), exceeding the global average of 32% and positioning Kenya as a continental leader in clean energy[4]. This creates a powerful multiplier effect for electric mobility: every kilometre driven by an electric bus in Kenya results in cleaner air,

3 African Union. (2022, June 28). *African Union Climate Change and Resilient Development Strategy and Action Plan (2022-2032).* https://au.int/en/documents/20220628/african-union-climate-change-and-resilient-development-strategy-and-action-plan

4 Ember (2025). Global Electricity Review 2025. https://ember-energy.org/latest-insights/global-electricity-review-2025/

reduced reliance on imported fuel, and measurable climate benefits. Because charging is nearly zero-carbon, each electric bus avoids approximately 50 tCO_2e per year, giving Kenya one of the highest marginal abatement impacts in the world for an e-bus project.

In short, the challenge is urgent, but the opportunity is clear. With a renewable grid, supportive policy landscape, and proven models such as BasiGo's, Kenya is uniquely positioned to transform public transport into a clean, efficient, and sustainable engine of national growth.

BasiGo's Solution & Innovation

BasiGo delivers an end-to-end solution that integrates electric bus technology, financing innovation, and full operational support- removing barriers to adoption and enabling a seamless transition to clean public transport.

Component	Solution
Electric Buses	Locally assembled 36-seater KL9 from King Long models with 176–210 kWh batteries; fast-charging capability in under 2 hours.
PAYD Model	Transforms high upfront capital costs into manageable per-kilometre operating expenses. Subscription includes charging, service, and maintenance - all provided by BasiGo.
Charging Infrastructure	Grid-connected depot charging stations developed by BasiGo, with Kenya Power supporting transformer installation and ensuring power reliability.
Maintenance & Support	Guaranteed 90% fleet uptime, OEM-certified parts, dedicated after-sales service, and continuous training for operators and technicians.

Innovation & Additionality

BasiGo's model is built on a simple but transformative premise: make clean public transport easy, affordable, and reliable.

When BasiGo entered the Kenyan market, the primary barrier was high capital cost. Electric buses, though cheaper to operate and far cleaner than diesel, were prohibitively expensive for most fleet operators.

Kenya's public transport fleet is privately owned and operator-financed. Due to high interest rates, short loan tenors, and limited working capital, most operators cannot afford upfront investment in electric buses.

Although an electric bus can cost up to 2× the price of a comparable ICE bus, operators stand to save 30–40% on operating costs through reduced fuel and maintenance expenses—making e-buses financially attractive

only when supported by affordable financing models. Traditional financing models simply did not reflect the realities of African public transport.

BasiGo reimagined the system. Instead of selling electric buses outright, it introduced the Pay-As-You-Drive (PAYD) model, a subscription that converts upfront capital expenditure into a predictable per-kilometre operating cost. Operators now pay for electric mobility the same way they once paid for fuel. The difference: every kilometre is powered by clean energy.

But the innovation went far beyond financing. BasiGo understood electrification as a complete ecosystem. It built the entire value chain needed for success, from local vehicle assembly and depot charging infrastructure to maintenance systems and continuous driver training.

Operators could adopt electric buses confidently, without changing their core business.

Partnerships accelerated this local value creation. Working with Kenya Vehicle Manufacturers (KVM), BasiGo is helping build domestic EV assembly capacity and laying the foundation for more than 300 green jobs. Collaboration with CATL, the world's largest battery manufacturer, brings global reliability while developing Kenyan expertise in battery servicing and management.

Charging and service depots were developed in coordination with Kenya Power, aligned with grid capacity and future planning. This ensures that electrification reinforces - rather than strains - Kenya's renewable energy system.

The result is a first-of-its-kind model that blends financial innovation, local manufacturing, clean energy integration, and operational reliability. BasiGo demonstrates that climate-smart mobility doesn't just work in Africa - it can thrive when technology, policy, and people move together.

Implementation and Execution

BasiGo's journey from pilot to large-scale deployment has been guided by precision, partnership, and a commitment to data-driven execution. From the outset, the company understood that electrifying public transport required more than new technology - it required the trust of operators, alignment with regulators, and seamless integration with Kenya's energy systems.

The rollout began in 2022 with pilot routes in Nairobi, in partnership with leading operators such as Citi Hoppa and East Shuttle. Rather than creating parallel systems, BasiGo introduced electric buses into existing routes and schedules, allowing drivers, passengers, and SACCOs to adopt the technology within familiar daily operations. This made operators true co-designers, ensuring feedback from every journey informed the next phase of growth.

As insights emerged, BasiGo expanded its offering: introducing larger 36-seater models and building additional charging depots to match operator needs. Collaboration with Kenya Power, EPRA, and Kenya Vehicle Manufacturers (KVM) ensured the model fit within Kenya's regulatory, industrial, and grid realities, strengthening local assembly and aligning charging infrastructure with power capacity.

The Pay-As-You-Drive model enabled operators to add electric buses to their fleets without financial strain, while ensuring each vehicle remained profitable in service.

Every stage of deployment has been rooted in data: vehicle uptime, passenger demand, route performance, and charging efficiency. This evidence-driven approach not only optimized operations, it also built confidence among investors and policymakers looking for clear proof of viability.

Today, BasiGo's phased execution model - **pilot, validate, localize, and scale** - stands as a blueprint for electric public transport in Africa. It shows that when innovation is paired with collaboration and local insight, electrification can move from concept to city streets both rapidly and sustainably.

Financing Clean Mobility: The BasiGo Way

At the heart of BasiGo's innovation is a financing model designed around the realities of Kenya's transport ecosystem - built for matatu owners, fleet operators, and the commuters they serve.

Electric buses traditionally require high upfront capital, locking most operators into diesel even when cleaner, cheaper options exist. BasiGo solved this barrier through its Pay-As-You-Drive (PAYD) model, a simple, transparent system that mirrors how the transport sector already works.

Instead of paying millions of shillings upfront for a bus, operators pay a predictable per-kilometre fee that covers both charging and maintenance. This turns electric mobility from a heavy capital investment into a manageable daily operating expense, making it accessible to SACCOs and small fleet owners alike.

The model is built on alignment and shared success: operators only pay when the bus is on the road. This ensures BasiGo's incentives are fully tied to operator performance, reinforcing a commitment to 90%+ uptime and dependable service support.

Behind this operator-centric design is a strong financial foundation. The model is intentionally structured to deliver commercial returns, enabling it to attract large ticket investment. This includes equity and debt from both commercial investors and development finance institution partners including BII, DFC, and Africa50. These investments signal confidence not only in the PAYD model, but in Africa's ability to scale climate-smart infrastructure.

The result is a model that delivers financial predictability, reduces risk, and drives social impact. Operators save on fuel and maintenance. Commuters enjoy cleaner, quieter journeys. Investors participate in a fast-growing clean mobility market.

BasiGo's PAYD model is not just expanding electric fleets - it is redefining how Africa finances the future of public transport.

Driving Impact: Economic, Environmental, and Social Returns

BasiGo's impact extends far beyond cleaner buses; it represents a new way of powering cities, creating jobs, and restoring trust in public transport. Each bus on the road is more than a vehicle; it is a symbol of how innovation, policy, and purpose can work together to move society forward.

Operational Transformation

BasiGo has deployed 76 electric buses in Kenya, covering over 5.9 million electric kilometres. Through close collaboration with operators, the company has maintained over 90% fleet uptime, demonstrating that electric public transport can match, and often exceed, the reliability of diesel fleets. Commuters have responded positively, valuing the quiet, comfortable, and dependable service.

Climate and Environmental Benefits

The shift from diesel to electric has already avoided over 1.18 million litres of fuel, preventing more than 2,700 tonnes of CO_2 emissions. Each kilometre driven by a BasiGo bus contributes directly to Kenya's NDC targets under the Paris Agreement. The project is currently undergoing Gold Standard verification, ensuring every tonne of carbon saved is independently validated for transparency and integrity.

Economic Empowerment

By localizing assembly and operations, BasiGo is creating over 300 green jobs, from technicians and engineers to depot operators and administrative staff. These roles stimulate the local economy while building long-term industrial capability in clean technology.

Social & Gender Inclusion

BasiGo has embedded inclusion throughout its growth. Gender-responsive hiring and anti-GBVH (Gender-Based Violence and Harassment) training help redefine equity in the transport sector. Women now lead several key functions at BasiGo, including Legal, ESG, Human Resources, Manufacturing, Operations, Communications & PR - driving the company's vision for a sustainable and inclusive mobility ecosystem.

Passenger Experience

To date, more than 8.2 million passengers have travelled on BasiGo electric buses. For many Kenyans, this has been their first experience with quiet, clean, and modern public transport a sharp departure from the noisy, diesel-powered norm.

Passenger feedback has been overwhelmingly positive, consistently highlighting **comfort, safety, and reliability** as defining features of the e-bus experience. As one passenger put it,

> *Do whatever you can to keep these buses on the road... we will gladly pay!*

Another remarked on the transformative cabin environment:

> *Everything was amazing. Reduced noise while the vehicle was moving and even people from outside were like waaw!! We were in another world.*

Drivers echo this sentiment, noting not only improved comfort but also how passengers actively seek out e-buses. One East Shuttle driver shared,

> *"Passengers love the Electric Bus so much that some took my phone contact so they can always call me to find out what time it will get near their pick-up point."*

A Citi Hoppa driver added that at crowded stages,

> *"we keep the door closed, otherwise the passengers will not board the diesel buses ahead of us in the queue."*

Transport operators and SACCO leadership also highlight operational improvements. A Citi Hoppa operations manager noted, *"Maintenance is one of our biggest headaches. The fact that BasiGo now shoulders that makes our operations easier."*

The Chairman of City Shuttle summed up the growing industry confidence:

> *"Diesel is obsolete. This is where the world is moving. We must be part of the future."*

Together, these voices reflect a powerful shift. BasiGo's impact is measured not only in kilometres travelled or tonnes of CO_2 avoided but also in **lives improved, jobs created, and rising public belief** that Kenya can lead Africa—and even the world—in the transition to clean, safe, and sustainable public transport.

Enabling the Transition: Lessons, Challenges, and Policy Pathways

As BasiGo has scaled electric public transport in Kenya, several lessons have emerged, highlighting what works and what policy interventions can unlock the sector's full potential.

1. Smart Tariffs Drive Real-World Impact

Kenya's E-Mobility Tariff provides electricity at KSh 16/kWh during peak hours and KSh 8/kWh during off-peak periods. With 70–80% of bus charging occurring at night, the lower off-peak rate has significantly reduced operating costs and strengthened the business case for electric buses, while absorbing geothermal energy that would otherwise be vented.

Challenge: The current tariff is capped at 15,000 kWh per month, which falls short for large fleets, creating inefficiencies that could slow expansion.
Policy Priority: Remove or raise the 15,000-kWh cap to allow sustainable fleet scaling and maintain competitive operating costs.

2. Financing Models Must Match Operator Realities

BasiGo's Pay-As-You-Drive (PAYD) model demonstrates that flexible, data-driven financing can bring private operators into the electric mobility ecosystem. However, commercial lenders often perceive e-buses as high-risk.

Lesson: Blended finance and green credit lines backed by Development Finance Institutions (DFIs) are critical to mobilize capital for local fleet expansion.

3. Infrastructure Requires Coordination and Speed

While charging depots are being established, site approvals and grid connections remain slow and

fragmented. BasiGo's collaboration with Kenya Power and EPRA shows that early coordination between utilities, regulators, and investors can shorten deployment timelines.

Policy Priority: Implement fast-track permitting and grid-connection frameworks to encourage private investment and reduce rollout delays.

4. Local Value Chains Build Long-Term Resilience

Local assembly of buses at Kenya Vehicle Manufacturers (KVM) strengthens domestic industry and embeds technical expertise in the workforce.

Lesson: Strategic fiscal incentives for local EV assembly and component imports will reinforce Kenya's role as a regional manufacturing hub for electric mobility.

5. Preparing for Tomorrow: Battery Recycling and End-of-Life Regulation

As Kenya's electric fleet grows, a national framework for battery end-of-life management is increasingly urgent. Partnerships with Original Equipment Manufacturers (OEMs) like Contemporary Amperex Technology Co., Limited (CATL) enable second-life applications for used batteries, but broader policy leadership is needed.

Policy Priority: Establish national regulations for battery recycling and repurposing to ensure sustainability across the EV lifecycle.

Evidently, Kenya's e-mobility transition is well underway, powered by innovative business models, a largely renewable grid, and a progressive tariff system. Strengthening supportive policies, including removing the E-Mobility Tariff cap, creating green credit lines, and streamlining permitting, will accelerate investment and position Kenya as a continental leader in clean, inclusive, and affordable public transport.

Future Empowerment:

Kenya stands at the forefront of Africa's clean mobility transformation. BasiGo's electric bus deployment, grounded in local innovation, smart financing, and a renewable energy

backbone, demonstrates that sustainable public transport is not only feasible but also profitable and transformative. It is a model that improves lives, supports climate commitments, and drives inclusive economic growth.

The journey so far proves a simple truth: when private innovation meets enabling public policy, change happens fast. The E-Mobility Tariff illustrates this partnership by lowering charging costs, supporting fleet operations, and validating the potential of renewable-powered transport. To fully unlock the scale, however, the 15,000-kWh monthly cap should be re-evaluated. Removing it will empower operators to expand fleets sustainably and leverage Kenya's clean energy advantage.

To Investors:

Kenya offers one of Africa's most attractive markets for clean transport investment. Policy support, grid reliability, and proven unit economics create high-impact opportunities to scale fleets, backed by market-fit financing, charging infrastructure, and local assembly, delivering both financial and social returns.

To National and County Governments:

Create an enabling environment that rewards innovation, from expanding the E-Mobility Tariff and establishing green credit lines to fast-tracking depot approvals and incentivizing

local manufacturing. Counties play a critical role in spatial planning, licensing, and fleet integration, making them pivotal partners in this transition.

To Ministries, Departments, and Agencies (MDAs):
Enhance inter-agency coordination to streamline regulation, accelerate policy implementation, and anchor Kenya's leadership within Africa's clean mobility agenda. Unified frameworks across energy, transport, industry, and environment will ensure every policy decision reinforces national development goals.

BasiGo's story is proof of what partnership can achieve: 76 electric buses on the road, over 8.2 million passengers served, more than 2,700 tonnes of CO_2 avoided, and hundreds of green jobs created.

The next chapter depends on collective action. By scaling proven models, refining enabling policies, and investing in local capacity, Kenya can lead the continent in building cities where public transport is clean, efficient, resilient, and proudly African.

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