STONE RESEARCH INTELLIGENCE

Open before it locks

Kenya’s battery-swapping moment and the rules that could shape Africa’s electric mobility infrastructure

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Standfirst

Kenya has entered a rare policy window: electric mobility is scaling quickly, battery swapping is becoming infrastructure rather than a product feature, and the legal framework is still being written. The strategic question is not whether one battery should win. It is which interfaces must be shared before proprietary networks become expensive to unwind.

39,324

EVs reported cumulatively registered by 2025 [4]

35

SUN Mobility swap stations reported live at launch [2]

KSh 382m

EV-charging revenue, Jul 2023-Apr 2026 [5]

Prepared by StoneComms Research & Intelligence | Desk research; no proprietary data or fieldwork

EXECUTIVE THESIS

A market can become fragmented even when every participant calls itself open

Kenya's electric-mobility market is moving faster than its regulatory architecture. The National Electric Mobility Policy launched in February 2026, and on 24 August the State Department for Transport and the International Finance Corporation signed a cooperation agreement to turn that policy into an E-Mobility Bill, regulations, a sessional paper, targets and a strategic environmental and social assessment. The agreement explicitly aims to create an investment-ready sector. [1][4]

At almost the same moment, infrastructure competition accelerated. SUN Mobility and Vivo Energy announced an "open-architecture" battery-swapping network with 35 stations already live in Nairobi and Mombasa and more than ten partner vehicle manufacturers, according to the launch announcement. Earlier in August, Spiro opened a high-capacity Westlands station able, the company said, to charge more than 200 batteries at once. IFC has separately approved an equity investment of up to US$5 million in Arc Ride, whose current Battery-as-a-Service network is described by IFC as proprietary. [2][10][20]

This is not evidence that one model is right and another wrong. It is evidence that asset density, customer habits, technical interfaces and financing commitments are being fixed now. Once riders, manufacturers and capital are tied to incompatible batteries, cabinets, software and contracts, the cost of later harmonisation rises. Kenya therefore has an unusually valuable chance to write rules while the market is still fluid.

> **STONECOMMS ORIGINAL SYNTHESIS**
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> The immediate policy objective should be minimum viable interoperability, not premature battery standardisation: require openness at the interfaces where sharing creates public value, while allowing firms to keep competing on batteries, vehicles, software, service quality and business model. In short: standardise the handshake, not the whole machine.

This conclusion is strengthened by recent regional evidence. PREO's 2025 review of e-mobility ventures in sub-Saharan Africa argues that interoperability is most compelling in high-utilisation segments where infrastructure is capital-intensive and riders are cost-sensitive, but warns that technical compatibility is only part of the problem: revenue sharing, liability, data access and willingness to collaborate matter as much. The report also finds that the dominant systems used by major East African two-wheeler providers are not technically uniform. [9]

The prize is larger than Kenya. In April 2026 African transport and energy ministers endorsed a Continental Framework on Electric Mobility, explicitly positioning coordinated national action, local manufacturing and renewable-energy use as continental priorities. Kenya can become an implementation laboratory for that framework - but only if it treats interoperability as a market-design question, rather than a late technical clean-up. [11]

KEY FINDINGS

01 THE WINDOW IS NOW

Kenya is simultaneously writing the legal framework and building physical swap networks. Rules made over the next policy cycle can still shape market structure; rules made later may merely regulate lock-in.

02 "OPEN" IS NOT BINARY

A platform can be open to several OEMs while remaining incompatible with other open platforms. Interoperability operates across physical, electrical, software, payment, data and commercial layers.

03 CAPITAL CAN SET THE STANDARD

Development finance, concessions and site partnerships can reward multi-brand access, transparent settlement and future compatibility without selecting a single battery design.

04 EAST AFRICA IS ALREADY DIVERGING

Kenya, Rwanda and Tanzania have all moved on charging or swapping rules, but at different speeds and with different instruments. Regional harmonisation will be easier before national systems mature independently.

05 DATA QUALITY IS A POLICY ISSUE

Official adoption figures are rising rapidly, but the public series is not yet sufficiently reconciled for investment-grade market sizing. Shared definitions and infrastructure reporting should be part of regulation.

06 THE BEST NEXT STUDY IS FIELD-BASED

The missing evidence is rider and asset-level: network switching, downtime, utilisation, degradation, safety events, payment friction, unit economics and the value of multi-network access.

1 WHY THIS MATTERS NOW

Kenya has crossed from pilot economics into infrastructure economics

Three signals matter because they point in the same direction. First, adoption is accelerating. Kenya's Ministry of Roads and Transport reported 39,324 cumulative registered EVs in 2025, compared with 1,378 in 2022, and said boda bodas recorded the highest percentage increase. EPRA had reported 3,753 cumulative EVs in 2023 and 5,294 by December 2024. [4][8]

The implied jump between 2024 and 2025 is striking enough to be treated carefully. It may reflect genuine market acceleration, changes in registration coverage or classification, or both. The figures are official, but StoneComms would not use the combined series for financial forecasting without reconciling definitions with NTSA, EPRA and the Ministry. That caveat is not pedantry: when investment decisions depend on addressable fleet size, data architecture becomes part of market infrastructure.

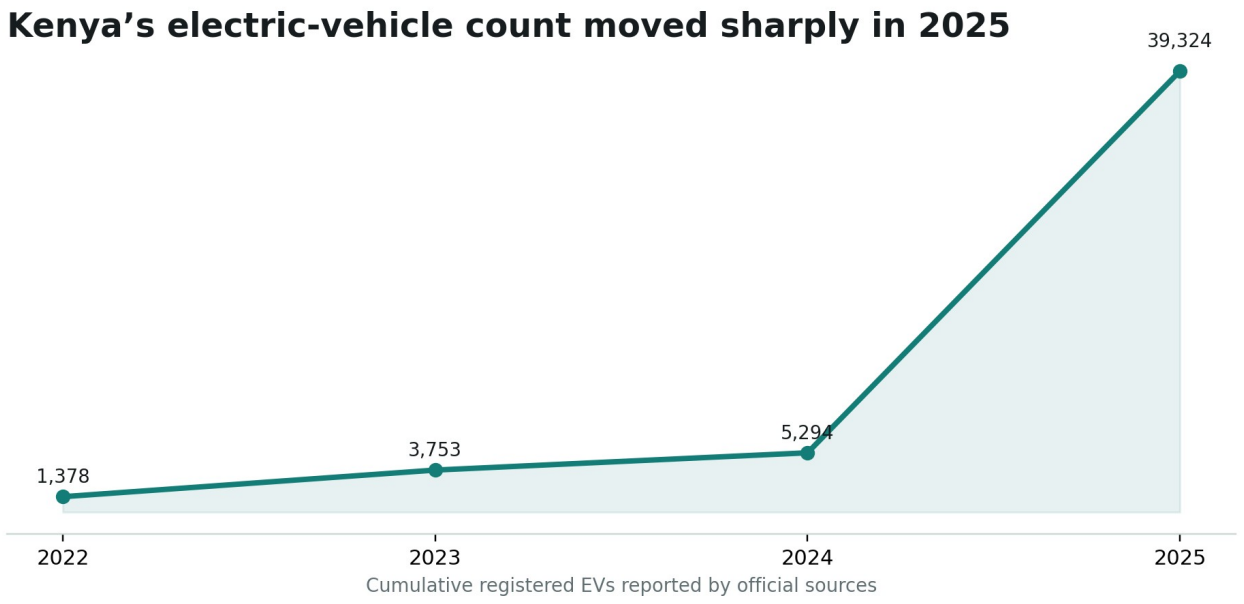

FIGURE 1 Officially reported cumulative EV registrations. 2022/2025: Ministry of Roads and Transport [4]; 2023/2024: EPRA [8]. The series should be reconciled before investment-grade use.

Second, energy use is beginning to look material rather than experimental. Kenya Power reported that electricity consumed for EV charging rose from 2.92 GWh in 2024 to 8.43 GWh in 2025, an increase of 188 per cent. By June 2026 it said 331 customers were metered on the dedicated e-mobility tariff; cumulative charging revenue from July 2023 to April 2026 reached KSh382 million, with Nairobi accounting for the majority. [5][6]

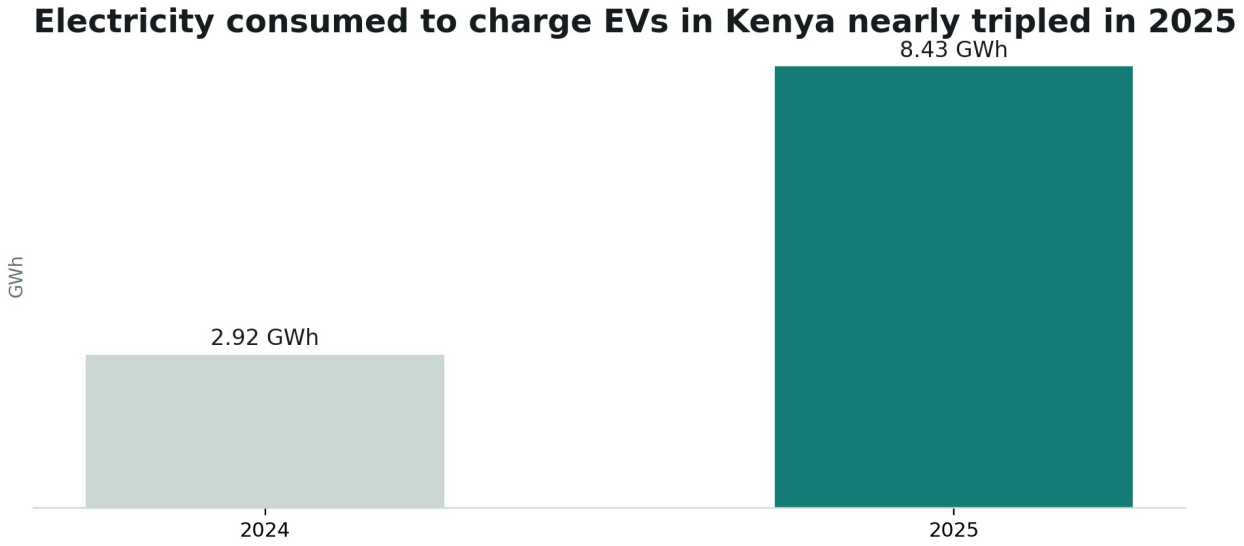

FIGURE 2 Electricity consumed to charge EVs in Kenya, as reported by Kenya Power. [6]

Third, the grid and tariff structure are unusually supportive of managed charging. Kenya Power's e-mobility tariff is KSh16 per kWh during peak hours and KSh8 during off-peak hours. EPRA's 2025 statistics report put renewables at 80.17 per cent of the electricity mix for the year to June 2025. This creates a system-level incentive to move charging into lower-demand periods, especially for batteries that can be charged centrally and swapped when riders need them. [5][7]

> *The opportunity is no longer simply to sell electric motorcycles. It is to decide what kind of energy-and-mobility market sits behind them.*
>
> STONECOMMS ANALYSIS

The policy machinery is moving at the same time

Kenya's National Electric Mobility Policy was launched on 3 February 2026. The Ministry said the policy covers all transport modes, is intended to strengthen coordination and investment, and sits alongside incentives including zero-rated VAT and zero excise duty on electric buses, bicycles, motorcycles and lithium-ion batteries. [4]

On 24 August 2026, the State Department for Transport and IFC moved the agenda from policy towards legislation. Their Kenya Electric Vehicle Sector Project is designed to support an E-Mobility Bill and regulations, a sessional paper, a Strategic Environmental and Social Assessment, transition targets and a review of fiscal and non-fiscal incentives. [1]

That sequence matters. Infrastructure standards are often hardest to change after networks have achieved density. Kenya is effectively designing the traffic rules while new roads are being built.

2 EVIDENCE AND METHOD

A desk study designed to test a market-design hypothesis

Research question: as battery swapping scales in Kenya and neighbouring East African markets, what level of interoperability should policymakers and development-finance institutions seek now, before proprietary infrastructure becomes difficult or costly to reconcile?

Unit of analysis: public rules, market infrastructure and financing signals affecting electric two- and three-wheelers, with a particular focus on battery swapping and shared charging in Kenya. Comparison markets are Rwanda, Tanzania and Uganda. The review period is 2023 to 26 August 2026, with older material used only where it establishes policy context.

Evidence base: the analysis prioritises Kenya's Ministry of Roads and Transport, EPRA, Kenya Power, IFC, the African Union, UNEP, Rwanda Utilities Regulatory Authority and Tanzania's EWURA. PREO's 2025 interoperability study is used as a sector evidence source because it synthesises a portfolio of sub-Saharan African e-mobility projects and reports interviews and technical observations. Company announcements and local reporting are used for current deployment signals and are identified as such. [1][4][5][6][9][10][11][13][15]

Method: qualitative cross-source synthesis, policy comparison and simple descriptive data presentation. No proprietary data, field interviews, rider survey, station telemetry, financial model or engineering test was available. No causal inference is made from market adoption or infrastructure deployment.

Material comparability limits: reported EV counts may use different registration or classification conventions; company fleet and swap-station figures are not treated as independently audited; the physical and software specifications of individual networks can change quickly; and interoperability claims can describe compatibility inside one platform rather than compatibility across competing platforms.

> **EVIDENCE RULE**
> Where a fact is externally reported, it is cited. Where the report joins facts into a new conclusion, the reasoning is explicitly labelled StoneComms original synthesis. No claim of original fieldwork is made.

3 MAIN ANALYSIS

Battery swapping is becoming a utility layer

3.1 The economics reward density

Commercial motorcycle riders are unusually demanding energy customers. The asset earns when it is moving; long charging dwell times have a direct opportunity cost. That makes battery swapping attractive where rider utilisation is high and station density is sufficient. PREO's 2025 review reaches a similar conclusion: interoperability is most compelling in high-utilisation segments where infrastructure costs are high, riders are cost-sensitive and aggregated demand can improve asset utilisation. [9]

This shifts the competitive unit. A company no longer competes only on motorcycle price and quality. It competes on an energy network: station location, battery availability, uptime, payment, asset finance, battery health, rider support and the ability to forecast demand. The result resembles telecoms or payments more than conventional motorcycle retail: infrastructure density can become a moat.

3.2 Kenya now has several infrastructure strategies at once

The SUN Mobility/Vivo Energy launch is significant because it explicitly separates vehicle manufacturing from shared energy infrastructure. The launch announcement said 35 stations were live in Nairobi and Mombasa,

supporting motorcycles, scooters, passenger tuk-tuks and cargo three-wheelers from more than ten partner manufacturers. SUN's own technology materials describe its model as an open-architecture platform designed to work across multiple vehicle formats and OEMs. [2][3]

Other operators are scaling their own networks. In early August, The Star reported that Spiro had opened a 24-hour "mega" swap station in Westlands with capacity for more than 200 batteries and, citing the company, said its Kenyan network had expanded across dozens of counties. IFC's Arc Ride disclosure describes another model: automated battery-swapping cabinets in Nairobi and Nakuru supported by proprietary technology infrastructure. [10][20]

These investments are positive evidence of market confidence. They also create a structural question: if several networks become dense at the same time, what must be compatible across them for riders, manufacturers and financiers to capture network effects without creating a single private monopoly?

3.3 "Open architecture" is not the same as an open market

PREO is especially useful here because it distinguishes standardisation from interoperability. Full standardisation requires one common specification. Interoperability allows different systems to work together at selected interfaces. PREO argues that this can preserve innovation while reducing duplication and improving utilisation. [9]

The distinction becomes concrete in East Africa. PREO's analysis of the six largest East African e-motorcycle providers found 82.7 per cent of deployed vehicles in the sample used 72V systems, with 17.3 per cent at 48V. The report notes that some major Asian platforms use 48V systems, creating an immediate compatibility challenge. It also identifies different connector types, battery form factors and CAN-bus communication protocols, as well as commercial questions around revenue sharing, battery data and liability. [9]

Therefore a platform may be "open" because many vehicle brands can join it, yet still be closed to batteries or stations from another open platform. Two open ecosystems can be mutually incompatible. That is the central market-design risk.

4 STONECOMMS ORIGINAL SYNTHESIS

The interoperability window: standardise the handshake, not the whole machine

> **SYNTHESIS PROPOSITION**
>
> Kenya should define a minimum viable interoperability layer before it defines a universal battery. The regulatory goal is portability at interfaces where monopoly or duplication creates public cost - while preserving competitive freedom where differentiation creates innovation.

Evidence base

- Kenya is drafting legislation and regulations while deployment is accelerating. [1][4]
- Shared-platform and proprietary swapping models are expanding in the same cities. [2][10][20]
- PREO finds that interoperability can improve utilisation and lower capital intensity, but also identifies technical divergence and commercial coordination barriers. [9]
- The African Union has endorsed a continental framework intended to strengthen coordinated electric-mobility policy and local industrial development. [11]

Analytical bridge

Infrastructure becomes path-dependent. Once a network has thousands of riders, financed batteries, dedicated swap cabinets, exclusive site contracts, data histories and OEM integrations, changing a physical standard can destroy asset value. Waiting for a perfect universal battery therefore risks making later reform more expensive. But imposing a universal battery too early can freeze technology, privilege an incumbent design and create stranded innovation. PREO explicitly warns that full standardisation can freeze innovation if imposed prematurely. [9]

The middle path is to identify the interfaces where compatibility delivers system-wide benefits at relatively low technical cost. Some of these can be regulated immediately; others can be required as future-ready capabilities or tested through industry agreements.

A seven-layer minimum viable interoperability stack

1	SITE ACCESS	Publicly supported or concessioned locations should not be reserved indefinitely for one network where multi-operator hosting is technically feasible. Co-location can create infrastructure competition without forcing battery compatibility.
2	PAYMENT & ROAMING	Riders should be able to discover stations, see prices and pay without avoidable platform friction. Kenya's existing charging guidelines already emphasise transparent, non-discriminatory pricing and accessible payment. [19]
3	IDENTITY & SETTLEMENT	A neutral transaction layer can identify rider, vehicle, battery and operator, then settle usage across parties. This is analogous to roaming: systems can remain different underneath.
4	SAFETY DATA	Operators need a minimum trusted data set on battery identity, state of health, temperature, fault history and certification. PREO identifies data access and fire liability as practical barriers to shared use. [9]
5	ELECTRICAL INTERFACE	Rather than mandate one voltage immediately, regulators can require transparent specifications, safe adapter pathways or multi-voltage capability where commercially feasible.

6	PHYSICAL INTERFACE	Form-factor convergence should follow evidence. A small difference in casing or mounting can force costly cabinet redesign, but premature prescription risks locking the market to today's battery. [9]
7	GOVERNANCE & LIABILITY	Shared systems need rules for ownership, warranty, degradation, revenue allocation, incident investigation, cyber-security and exit. Technical compatibility without commercial governance is not interoperability.

Assumptions and confidence limits

Confidence is high that the timing problem is real: policy formation and infrastructure investment are plainly concurrent. Confidence is moderate that a minimum-interface approach will outperform a single mandated battery standard, because the logic is supported by PREO's evidence and global analogies but has not been tested through Kenyan rider, station or financial data. Confidence is low on the precise economic value of interoperability in Kenya because no comparable station-level utilisation, CAPEX, battery-life or customer-switching dataset was available.

Observed pattern versus hypothesis

Observed: multiple swapping models are scaling; policy is still being implemented; technical architectures differ; and commercial coordination is a known barrier. Hypothesis requiring further research: a regulated minimum interoperability layer would increase station utilisation, reduce rider switching costs and improve risk-adjusted infrastructure returns without materially slowing innovation. That proposition is testable, and should be tested before any universal technical mandate.

5 PAN-AFRICAN COMPARISON AND SCALABILITY TEST

Do not generalise from Nairobi: test the institutional conditions

The temptation is to treat "Africa" as one emerging EV market. The evidence says the opposite. The continent's policy, grid, fleet, income and institutional conditions vary sharply. The correct scalability question is not "can Kenya's model be exported?" but "which interoperability principles survive different market structures?"

Market	Policy / regulatory signal	Market signal	Interoperability opportunity	Caution
Kenya	National E-Mobility Policy launched Feb 2026; IFC-backed Bill and regulations now in preparation. [1][4]	Rapid EV and charging growth; competing swap networks expanding. [2][5] [6][20]	Set minimum interoperability and reporting rules while infrastructure is still fluid.	Official adoption series needs reconciliation; avoid choosing a private technical winner.

Market	Policy / regulatory signal	Market signal	Interoperability opportunity	Caution
Rwanda	RURA issued dedicated regulations governing EV charging infrastructure and battery swapping stations on 29 Jun 2026. [13]	Government has actively promoted electric motorcycles; AU notes Kigali has stopped new registrations of combustion-engine passenger motorcycles. [11]	Test whether licensing and safety rules can also support roaming, data portability and cross-network access.	Smaller, denser market may support different economics from Kenya.
Tanzania	EWURA issued Guidelines for E-Mobility Charging Stations and Battery Swapping in Apr 2026. [15]	Market is earlier in scale than Kenya; PREO portfolio includes Tanzanian battery and charging pilots. [9]	Embed common interfaces before private networks reach high density; align with cross-border EAC learning.	Publicly accessible deployment data remain thinner; avoid assuming Kenyan rider economics.
Uganda	Public sources reviewed show active state support for e-motorcycle deployment, but no dedicated national interoperability regime equivalent to Rwanda's was identified in this desk review. [16]	Government-backed deployments and swap-network expansion are already under way. [16]	Use regulatory development as an opportunity to align with neighbouring markets before technical divergence deepens.	Absence of a located public instrument is not proof that no relevant rule exists; local legal review is required.

TABLE 1 East African scalability test. This is a policy-readiness comparison, not a ranking of national markets.

A continental window is opening

The African Union's April 2026 endorsement of a Continental Framework on Electric Mobility creates a policy umbrella for national action. The AU says the framework aims to accelerate the move away from fossil-fuel transport, develop local manufacturing and use Africa's renewable-energy potential. It also reports roughly 132,000 EVs in operation across the continent and says 31 African countries reference e-mobility in their NDCs. [11]

UNEP's current electric two- and three-wheeler programme explicitly includes harmonisation of standards and regulations among its functions, and supports projects in multiple African markets including Kenya, Rwanda, Uganda, Tanzania and Togo. [17]

This creates a practical institutional route: use a small number of high-adoption East African corridors as interoperability sandboxes, then feed evidence into continental and regional frameworks. A regional standard should emerge from tested interfaces, not from a conference-room attempt to freeze an immature technology stack.

6 IMPLICATIONS FOR POLICY, CAPITAL AND IMPLEMENTATION

Five decisions would shape the market without trying to own it

1. Regulate access before mandating batteries

Kenya can begin with rules that are largely technology-neutral: non-discriminatory access at publicly supported sites, clear pricing, open station registries, safety certification, incident reporting, and transparent technical

interface documentation. Existing EPRA charging and battery-swapping guidelines already provide a foundation by requiring accessible infrastructure, transparent pricing and a national database of public charging stations. [19]

2. Make public and DFI capital conditional on future compatibility

Development finance does not need to decide which battery wins. It can require recipients of concessional finance, guarantees, grants or public land to publish interface specifications, avoid unnecessary exclusivity, support multi-brand access where feasible, and participate in common reporting. PREO similarly recommends support for interoperable infrastructure and neutral asset structures where commercial logic is strong. [9]

IFC's position in Kenya makes this especially relevant. It is helping the Government design the legal framework while separately considering or approving private e-mobility investments. That is normal for a development institution, but it means policy advisory and transaction teams can create extra value if interoperability expectations are aligned rather than treated as separate workstreams. IFC's Arc Ride disclosure, for example, describes an approved equity investment of up to US$5 million into a company whose current BaaS infrastructure is proprietary. [1][10]

> **STONECOMMS ORIGINAL SYNTHESIS**
>
> A simple DFI "interoperability covenant" could become a powerful market instrument: financed infrastructure must meet agreed disclosure, safety-data, non-exclusivity and future-compatibility tests, without forcing the investor to share commercially sensitive IP or adopt a single battery.

3. Treat fuel-station conversion as shared infrastructure policy

The SUN Mobility/Vivo Energy model matters beyond one company because it repurposes existing fuel-retail real estate as energy infrastructure. Kenya's EPRA guidelines already state that governments may give priority to existing oil-marketing retail outlets for charging stations subject to safety requirements. If fuel-station sites become scarce strategic nodes for swapping and charging, concession design should anticipate multi-operator access, physical space allocation and power capacity. [2][19]

4. Create a public interoperability test lab and data standard

The physical and digital layers need somewhere neutral to meet. A regulator-backed or standards-body test environment could validate connectors, adapters, voltage conversion, BMS data fields, charger protocols, fire-safety responses and cyber-security. Results should feed an open technical register. This would lower integration costs for smaller African OEMs that cannot negotiate bespoke interfaces with every energy-network operator.

5. Measure rider welfare, not only fleet growth

The success metric should not be the number of electric motorcycles alone. Regulators and funders should track rider energy cost per kilometre, waiting time, failed swaps, geographic coverage, financing burden, income effects, safety incidents, battery availability and the ability to change vehicle or energy provider. If a network grows while riders become commercially captive, adoption has not automatically produced a competitive mobility market.

7 RISKS, COUNTERARGUMENTS AND LIMITATIONS

Interoperability can solve the wrong problem if imposed badly

Counterargument 1: vertical integration may be necessary at this stage

This is credible. Early-stage operators often need control over the battery, bike, station and software to assure safety, manage warranty risk and learn quickly. PREO itself says closed systems may continue where infrastructure is less capital-intensive or operators need tight control of customer experience. [9]

Response: minimum viable interoperability does not require operators to surrender end-to-end control immediately. It concentrates first on site access, transparent interfaces, safety data, reporting and contractual readiness - the parts of the system where later coordination becomes most expensive.

Counterargument 2: standardisation could create scale and lower battery cost faster

Also credible. A single high-volume form factor can reduce manufacturing complexity and simplify swapping. But a mandated specification can privilege the installed base, become obsolete, or lock out better chemistries and pack designs. Rwanda's own EV infrastructure planning literature has previously noted that battery standardisation attempts in Asian markets have had mixed results. The safer sequencing is evidence-led convergence after interoperability tests, rather than design-by-decree.

Counterargument 3: the market may consolidate naturally

It may. A dominant platform could create de facto interoperability if many OEMs join it. That can be efficient. It can also leave the public interest dependent on one operator's pricing, data and access rules. The appropriate policy response is not necessarily to prevent dominance, but to ensure contestability: transparent interfaces, fair access to strategic sites, data portability and credible entry routes for future competitors.

Research limitations

- No rider-level fieldwork was conducted; welfare and switching-cost effects are hypotheses, not measured outcomes.
- No station-level financial data were available, so this report does not estimate the NPV or payback of shared infrastructure.
- Company deployment figures are treated as reported claims unless independently corroborated.
- The review is strongest for Kenya and selected East African markets; it does not claim that the same technical architecture is optimal for West, North, Central or Southern Africa.
- Legal analysis is indicative only. National standards, competition law, data law, electricity regulation and product-liability rules require local counsel and regulator confirmation before implementation.

8 COMMISSIONABLE RESEARCH AGENDA

The next study should turn the interoperability debate into numbers

A serious institutional programme can now move beyond desk evidence. The most useful commission would test where interoperability creates measurable economic value, for whom, and at what technical layer.

Workstream	Core question	Method	Decision output
1 Rider economics	What is the real value of multi-network access to commercial riders?	600-1,000 rider survey across Nairobi, Mombasa, Kigali and Kampala; GPS diary subsample; income and downtime analysis.	Welfare value of roaming; willingness to pay; switching-cost estimate.
2 Station utilisation	Does shared access materially improve asset utilisation and breakeven?	Anonymised telemetry from 30-50 swap/charge sites; hour-by-hour demand, battery inventory, failed-service and grid data.	Utilisation curve; minimum density; capex-efficiency scenarios.
3 Technical compatibility	Which interfaces can be shared cheaply and safely now?	Bench testing of leading 48V/72V packs, connectors, cabinets, BMS/CAN interfaces and adapters.	Minimum technical interface specification and test protocol.
4 Commercial governance	Which settlement and liability models make operators willing to interoperate?	Confidential interviews with OEMs, energy operators, insurers, utilities, regulators and financiers; contract review.	Model roaming/settlement agreement; liability matrix.
5 Competition & infrastructure	Where could exclusivity create durable bottlenecks?	Geospatial mapping of swap sites, fuel stations, rider density, grid capacity and land access.	Strategic-site map; non-exclusivity thresholds; co-location policy.
6 Regional harmonisation	Which rules can Kenya, Rwanda, Tanzania and Uganda align without slowing national markets?	Comparative legal and standards review; regulator workshops; EAC industry roundtable.	Regional interoperability roadmap feeding AU framework implementation.
7 Circularity & finance	How should battery ownership and second-life value affect finance and interoperability?	Battery degradation cohort; residual-value model; recycler/second-life interviews.	Bankable battery-asset framework and end-of-life requirements.

A practical 16-week design

Weeks 1-3: regulatory mapping, stakeholder recruitment and common data dictionary. Weeks 4-9: field survey, station telemetry collection and technical bench testing. Weeks 10-12: commercial interviews, geospatial analysis and preliminary unit-economics modelling. Weeks 13-14: operator/regulator validation workshops. Weeks 15-16: final policy options, technical annex, anonymised dataset and implementation roadmap.

The value of the commission would be the combination of rider evidence, engineering compatibility, infrastructure economics and policy design. Any one of those alone risks solving only one layer of the market.

9 CONCLUSION

The cheapest moment to design openness is before success makes it expensive

Kenya’s e-mobility transition is no longer an abstract climate proposition. Electricity consumption is rising, registered vehicles are multiplying, swap infrastructure is becoming denser and policymakers are converting a national policy into law. That is precisely why interoperability has become urgent. [1][4][5][6]

The wrong response would be to assume that “open architecture” solves the problem by itself. It can aggregate many vehicle brands inside one platform while leaving rival platforms technically and commercially isolated. Nor should government pick one battery and freeze a young market. The better objective is narrower and more powerful: define the interfaces that must remain contestable, visible and safe.

Kenya can use this window to establish the grammar of a competitive electric-mobility market - shared rules for access, payment, safety data, settlement and future compatibility - while allowing companies to keep inventing the vocabulary. If that model can be tested with hard rider and station evidence, East Africa could contribute something more valuable than another national standard: a practical route from fragmented pilots to investable, interoperable infrastructure.

Africa does not need every battery to be the same. It needs enough of the system to speak to itself.

STONECOMMS ORIGINAL SYNTHESIS

10 REFERENCES AND DATA NOTES

References

[1] State Department for Transport, Kenya. New Partnership to Accelerate Kenya's E-Mobility Transition. 24 August 2026. https://transport.go.ke/new-partnership-accelerate-kenyas-e-mobility-transition

[2] African Sustainability Matters / company launch announcement. SUN Mobility launches first open architecture battery swapping network in Kenya with 10+ partner vehicle manufacturers. 24 August 2026. https://africasustainabilitymatters.com/sun-mobility-launches-first-open-architecture-battery-swapping-network-in-kenya-with-10-partner-vehicle-manufacturer-africa-wide-expansion-to-follow/

[3] SUN Mobility. Technology - open-architecture and interoperable battery-swapping platform. accessed 26 August 2026. https://www.sunmobility.com/technology.html

[4] Ministry of Roads and Transport, Kenya. Kenya Launches National Electric Mobility Policy to Drive a Cleaner, Efficient and Sustainable Transport System. 3 February 2026. https://www.transport.go.ke/index.php/kenya-launches-national-electric-mobility-policy-drive-cleaner-efficient-and-sustainable-transport

[5] Kenya Power. Kenya Power Kicks Off Customer Transition to E-Mobility Tariff. 4 June 2026. https://newsroom.kplc.co.ke/articles/kenya-power-kicks-off-customer-transition-to-e-mobility-tariff

[6] Kenya Power. Electric Vehicle Charging Drives Rise in Electricity Consumption in 2025. 11 February 2026. https://newsroom.kplc.co.ke/articles/electric-vehicle-charging-drives-rise-in-electricity-consumption-in-2025

[7] Energy and Petroleum Regulatory Authority (EPRA). Energy & Petroleum Statistics Report FY ended June 2025. September 2025. https://www.epra.go.ke/sites/default/files/2025-09/Statistics-Report-June-2025-Web.pdf

[8] Energy and Petroleum Regulatory Authority (EPRA). Bi-Annual Energy & Petroleum Statistics Report 2024/2025 - Electric Mobility chapter. March 2025. https://www.epra.go.ke/sites/default/files/2025-03/Bi-Annual%20Energy%20%26%20Petroleum%20Statistics%20Report%202024_2025.pdf

[9] Powering Renewable Energy Opportunities (PREO). Driving Interoperability: insights from PREO's E-Mobility portfolio. 2025. https://preo.org/wp-content/uploads/2025/10/PREO-interoperability-report.pdf

[10] International Finance Corporation. Arc Ride - Summary of Investment Information, Project 52436. 12 February 2026; updated 24 April 2026. https://disclosures.ifc.org/project-detail/SII/52436/arc-ride

[11] African Union Commission. African Transport and Energy Ministers Endorse Two Continental Policy Frameworks to Transform Mobility Across Africa. 30 April 2026. https://au.int/en/pressreleases/20260430/african-transport-and-energy-ministers-endorse-two-continental-policy

[12] UN Environment Programme. Africa E-Mobility Forum 2025: Accelerating inclusive and sustainable transport in Africa. 2025. https://www.unep.org/events/workshop/africa-e-mobility-forum-2025-accelerating-inclusive-and-sustainable-transport

[13] Rwanda Utilities Regulatory Authority. Regulations No. 011/Energy/RURA/2026 of 29/06/2026 Governing Electric Vehicle Charging Infrastructure and Battery Swapping Stations. 29 June 2026. https://www.rura.rw/sectors/energy/regulatory-instruments/regulations-and-guidelines

[14] UN Environment Programme. Electric two and three-wheelers. updated 30 July 2026. https://www.unep.org/topics/transport/electric-mobility/electric-two-and-three-wheelers

[15] Energy and Water Utilities Regulatory Authority, Tanzania. Guidelines for E-Mobility Charging Stations and Battery Swapping. April 2026. https://www.ewura.go.tz/uploads/documents/en-1779256549-E-Mobility%20Guidelines%20for%20Charging%20Stations%20and%20Battery%20Swapping%202026.pdf

[16] State House Uganda. President Museveni Commissions Spiro Electric Motorbikes in Uganda. 11 July 2024. https://statehouse.go.ug/president-museveni-commissions-spiro-electric-motorbikes-in-uganda/

[17] UN Environment Programme. Electric mobility projects in Africa. updated 28 February 2024. https://www.unep.org/topics/transport/electric-mobility/regional-support/electric-mobility-projects-africa

[18] UN Environment Programme. African Transport and Energy Ministers endorse two continental policy frameworks to transform mobility across Africa. 30 April 2026. https://www.unep.org/news-and-stories/press-release/african-transport-and-energy-ministers-endorse-two-continental

[19] Energy and Petroleum Regulatory Authority (EPRA). Electric Vehicle Charging and Battery Swapping Infrastructure Guidelines. 2023. https://www.epra.go.ke/wp-content/uploads/2023/09/EPRA-E-Mobility-Guidelines.pdf

[20] The Star, Kenya. Spiro expands electric mobility network with mega battery swap station. 7 August 2026. https://staging.the-star.co.ke/business/markets/2026-08-07-spiro-expands-electric-mobility-network-with-mega-battery-swap-station

Data notes

Figure 1 combines two official reporting sources. The 2022 and 2025 values are quoted by the Ministry of Roads and Transport; 2023 and 2024 are reported by EPRA. StoneComms has not independently reconciled vehicle-category definitions across the series.

Figure 2 converts Kenya Power's published kWh values to GWh by dividing by one million; no further transformation is applied.

The 35-station SUN Mobility/Vivo Energy figure and the number of partner manufacturers are launch-announcement claims. They are not treated as audited infrastructure statistics.

The Spiro Westlands capacity figure is reported by The Star from company-provided information. It is used only as evidence that high-capacity dedicated network investment is continuing.

The Tanzania guideline is cited as an official published instrument; the full PDF was not reliably retrievable through the research interface during this run, so no detailed clause-level comparison is made.

PUBLICATION PACKAGE

Research section and homepage copy

Homepage headline

> HEADLINE
>
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META DESCRIPTION	Kenya's battery-swapping market is scaling before its legal framework is fixed. StoneComms examines how minimum viable interoperability could protect competition, riders and infrastructure investment.
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This paper is based on public-source research completed on 26 August 2026. Primary and institutional sources were prioritised. Company deployment statements are identified as reported claims. StoneComms did not conduct fieldwork or access proprietary operational data for this edition. The analysis and the “minimum viable interoperability” framework are StoneComms original synthesis from the cited evidence.

Editorial note for the test run

No website publication or edit has been attempted. This package is prepared for review as a publication-ready research draft.