

FLAGSHIP RESEARCH / 15 OCTOBER 2026

Electric Buses in Africa:

Financing Reliable Urban Passenger Service

Procurement, charging and operating accountability in Dakar, East Africa and Cape Town



StoneComms Research & Intelligence / Public-source desk research

RELEVANT SDGS / PRIMARY: 11

9

11

13

STANDFIRST

Electric buses are becoming a credible part of African urban transport, but financing a fleet is not the same as financing a dependable journey. New evidence from East Africa, Cape Town's procurement programme and Dakar's operating experience points to a practical question: who coordinates the vehicles, electricity, routes, maintenance and payments on which passenger service depends? This paper tests three delivery models and proposes a Service Conversion Test for institutions preparing their next investment.



THE DECISION

Finance a dependable journey, not only an electric vehicle.

01 / ANALYSIS

EXECUTIVE THESIS

A passenger does not buy an electric bus. A passenger buys a journey, including the time spent waiting, the certainty of arriving and the price of getting home. Electrification creates a better transport proposition only if the financing and operating arrangements preserve that journey when a charger fails, traffic disrupts a timetable or a payment arrives late.

The evidence now allows a more demanding conversation. Cape Town confirmed an initial order for 38 battery-electric MyCiTi buses in July 2026, after route testing.[1] A July 2026 British International Investment evaluation examines BasiGo's operating and financing model in Kenya and Rwanda.[2] Dakar offers an operating concession in which public infrastructure and privately financed fleet services meet.[3] These are different institutional experiments, not interchangeable examples of one African market.

StoneComms original synthesis: the investable unit should be an accountable passenger-service package. The vehicle is one component. A credible package also identifies its duty cycle, charging access, operating rights, maintenance obligations, payment source and public-service standard. Separating ownership can improve financing; separating responsibility without reconnecting it can undermine service.

This paper asks how governments, operators and development financiers can turn bus electrification into reliable urban passenger service. Its central recommendation is to finance and procure against a common operating plan, even when different organisations own the bus, charger, depot and route contract. Technical compatibility is necessary; institutional compatibility determines who can act when the system stops working.

02 / ANALYSIS

WHY THIS MATTERS NOW

IN BRIEF

- Public procurement, commercial leasing and operating concessions now offer contrasting delivery routes.
- Recent evidence is more useful for testing interfaces than extrapolating a continental fleet forecast.
- Early transactions can establish service disciplines before financing structures become habitual.

The World Bank's June 2026 transport analysis frames electric mobility as a way to reduce exposure to imported petroleum, particularly in high-use segments.[4] This provides a strategic rationale, not proof that every electric-bus project is cheaper or that passenger fares will fall. Local tariffs, utilisation, financing and the diesel counterfactual still determine the result.

In Cape Town, the municipality's February research announcement set out a programme to test route profiles, passenger loads, charging and maintenance with the University of Cape Town.[5] The July procurement decision subsequently provided a firmer fleet milestone.[1] The sequence matters: the earlier pilot plan and the later order should not be counted as separate fleets, nor should an order be counted as completed deployment.

A September 2026 Dakar preprint adds a timely operational insight. Its GTFS-based simulation finds that charging location and strategy can materially change required onboard battery capacity and peak charging demand.[6] These are modelled scenarios, not measured savings delivered by Dakar's existing fleet. Their



STATUS MATTERS

An order is not a delivery. A delivery is not an operating service.

relevance is that procurement choices should be tested together before any one component is fixed.



03 / ANALYSIS

KEY FINDINGS

IN BRIEF

- The service boundary matters more than the legal boundary of any individual asset.
- Commercial risk should follow controllable obligations, not simply the party seeking finance.
- Replication needs common evidence standards and locally adapted contracts.

SOURCE DISCIPLINE

Historical observations and modelled scenarios remain explicitly dated.

1. A fleet count does not measure dependable mobility.

Procurement, delivery, operation and completed passenger journeys are different milestones. A useful investment dashboard distinguishes all four and reports cancelled service, waiting time and affordability alongside vehicles financed.

2. Charging is an operating decision. A depot-only design and an opportunity-charging design make different demands on layover time, land, connection capacity and redundancy. The Dakar simulation illustrates this interdependence; it does not identify a universally optimal African configuration.[6]

3. Leasing changes the distribution of risk, not the need to manage it. A per-kilometre fee can bundle inputs into a manageable payment. A minimum payment can also expose an operator to low utilisation. The assessment must examine the entire contract rather than the apparent affordability of the first instalment.

4. Protected corridors and open-road services need different models. A dedicated corridor offers a different operating environment from a bus sharing congested streets and competing for passengers. Route authority, enforcement and traffic conditions belong in the financial model.

5. Passenger benefit requires its own evidence. Improved vehicle comfort is valuable, but it is not a substitute for reliable coverage, accessible boarding, safe stops or affordable transfers.

These outcomes should be measured separately rather than inferred from propulsion technology.



6. Public support should purchase learning as well as deployment. Concessional capital can support early transactions. Its wider value increases when subsequent buyers can examine performance, failed assumptions and contract adjustments without receiving confidential commercial information.

SERVICE BOUNDARY

Who is responsible when the bus, charger, timetable and payment do not align?

04 / ANALYSIS

EVIDENCE AND METHOD

IN BRIEF

- This is a comparative public-source desk study completed on 15 October 2026.
- Cases are selected for institutional contrast, not statistical representativeness.
- Reported results, historical observations, commitments and modelling remain distinct.

The paper compares a corridor concession in Dakar, a leasing-and-service platform in Kenya and Rwanda, and a municipal procurement programme in Cape Town. Sources include municipal records, transport-authority material, World Bank and IFC guidance, a development-finance evaluation, an investor disclosure and academic modelling. The purpose is to identify decision requirements, not estimate an African electric-bus market.

There is no harmonised dataset behind the comparison. Fleet sizes refer to different dates and status categories. A lender's evaluation is useful evidence but not independent of its commissioning context; a project investor's description establishes attributable architecture rather than an independent operating audit. The September Dakar paper is a preprint, and its model results are treated as hypotheses for diligence rather than procurement guarantees.

No operator contracts, proprietary trip records, feeder studies or field interviews were obtained. The original contribution is the cross-source analytical framework below. StoneComms did not

conduct primary empirical research, calculate investment returns or establish causal passenger outcomes.



KEY METRICS / STATUS AND DATE PRESERVED

38 buses – initial Cape Town battery-electric MyCiTi order confirmed in July 2026; not a completed fleet at the research cut-off.[1]

121 buses – Dakar concession fleet at commissioning, under a 15-year operating arrangement.[3]

60,000 weekday passengers – Dakar BRT observation at June 2025 in World Bank monitoring; not a current ridership estimate.[10]

5.3 to 1.5 MW – modelled peak charging-load change between two Dakar scenarios in a September 2026 preprint; not an observed grid saving.[6]

05 / ANALYSIS

PLANNING TEST

Charging capacity and vehicle capacity should be evaluated against one timetable.

1. DEFINE THE JOURNEY BEFORE THE VEHICLE

IN BRIEF

- Specify the service that must survive ordinary disruption.
- Translate the timetable into vehicle, energy and workforce requirements.
- Compare complete alternatives over the same operating boundary.

IFC's electric-bus toolkit explicitly links needs assessment, business models, technical and financial feasibility, operations, procurement and investment.[7] Its significance is methodological: vehicle selection is one step in a wider implementation process.

StoneComms original synthesis: a procurement brief should begin with a service envelope. It should define the corridor or routes, operating hours, expected passenger demand, maximum tolerable disruption, accessibility requirements and responsibility for recovery. The technical specification should then demonstrate how the proposed fleet can deliver that envelope, including non-revenue travel and reserve vehicles.

A lowest-price vehicle tender can be internally competitive and strategically incomplete. Bidders may assume different charging windows, usable battery capacity, spare ratios and maintenance support. Unless the operating boundary is held constant, an apparently cheaper bus may simply transfer costs to the depot owner or transport authority.

The counterfactual must also be credible. Compare electrification with maintaining and improving the actual incumbent service, including its maintenance needs and financing conditions. Do not compare a carefully managed electric fleet with an implausibly inefficient diesel alternative. Conversely, do not exclude public-health or fuel-security objectives merely because they do not appear in the operator's cash account.

The decision should show two ledgers: the commercial case and the public-value case. A project can warrant public support while requiring an explicit subsidy. Describing both ledgers honestly is more useful than making every socially desirable service appear commercially self-financing.

06 / ANALYSIS

2. CONNECT CHARGING TO THE TIMETABLE

IN BRIEF

- Treat electricity availability and charging time as service inputs.
- Identify who owns each interface and who funds redundancy.
- Test stress conditions before procurement locks the configuration.

The Dakar preprint reports a modelled reduction in minimum battery capacity from 285 to 57 kWh per bus, and in maximum charging load from 5.3 to 1.5 MW, when terminal-and-depot charging replaces its depot-only scenario.[6] These values depend on that study's schedules, infrastructure and assumptions. They are not transferable equipment specifications.



ACCOUNTABILITY

Risk should follow the party able to influence it.

StoneComms original synthesis: the planning lesson is to procure compatibility among the timetable, energy system and vehicle, rather than optimise each independently. A smaller battery may reduce vehicle cost while increasing dependence on a terminal charger. A larger battery may improve operational tolerance while adding capital and weight. Neither trade-off can be settled by a catalogue specification alone.



ORIGINAL SYNTHESIS

The Service Conversion Test is a decision framework, not a validated project rating.

The joint operating plan should test peak traffic, a missed charging window, a charger outage, delayed grid connection and degraded battery performance. It should distinguish a bus that is technically available from one that can complete its assigned service. The recovery plan needs an accountable operator, authorised action and funded resources.

A utility connection agreement and a transport contract can otherwise assume incompatible service dates. Depot works may be complete while electrical capacity is unavailable. Fleet finance can begin accruing costs before revenue service starts. These are interface risks that deserve explicit milestones and remedies, not a generic contingency allowance.

The same discipline applies to solar. Onsite generation can be worth evaluating, but annual solar output is not equivalent to energy available during every charging window. Connection rights, time profiles and commercial settlement still matter. This paper makes no claim that rooftop solar alone can operate a city's electric-bus fleet.

3. FINANCE RESPONSIBILITY, NOT ONLY OWNERSHIP



IN BRIEF

- Match payments to measurable delivery and controllable risks.
- Examine utilisation floors, currency exposure and renewal obligations.
- Preserve continuity when one contractual party fails.

TRANSFERABILITY

Standardise the evidence questions. Adapt the delivery model.

Dakar's investor disclosure describes publicly procured civil infrastructure and a 15-year concession covering a fleet of 121 buses at commissioning, associated operating infrastructure and network operation.[3] The World Bank's December 2024 presentation corroborates the public/private division and records commercial operations beginning in May 2024.[8] This is an institutional architecture, not evidence that the arrangement eliminates all delivery risk.

In East Africa, BII's July 2026 evaluation describes a pay-as-you-drive model with a per-kilometre charge, a monthly minimum, charging and regular servicing. It reports 101 buses on the road in Kenya and 34 in Rwanda at December 2025, and finds encouraging operator and passenger outcomes, while not finding concrete replication at scale.[2] Proparco's November 2025 investment disclosure independently confirms the combination of local assembly, charging infrastructure and operator partnerships.[9]

StoneComms original synthesis: the financing question is which party can control each variable. An asset lessor may manage equipment condition but not road congestion. A route operator may manage drivers but not grid outages. A municipality may set fares while another institution controls subsidy payment. Allocating all of these risks to a single borrower can make the structure legible to a lender while making the operating proposition fragile.

A workable contract should identify the payment basis, minimum utilisation, electricity-price adjustment, currency treatment and exceptions. It should define maintenance response, battery renewal, data access and residual-value obligations. Where ownership is separated, lenders need a continuity arrangement that allows service to resume without an extended dispute over the bus or charger.

Payment per kilometre is not sufficient on its own. The contract must distinguish productive service kilometres from empty movement and specify how quality is checked. An availability payment likewise needs a practical test of readiness. The purchaser should avoid paying for nominal availability that cannot be translated into completed trips.

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STONECOMMS ORIGINAL SYNTHESIS

The Service Conversion Test

IN BRIEF

- Require evidence at each interface instead of a single blended readiness score.
- Record the accountable party and unresolved dependency for every gate.
- Use the test to sequence preparation, not certify an investment.

The evidence base combines contrasting delivery structures, IFC's implementation sequence and route-and-charging research.[2][3][5][6][7] The analytical bridge is that each source illuminates an interface between assets and service. The following six gates make that conversion explicit; they are StoneComms original synthesis, not an empirically validated rating system.

Gate 1: Service. What journey is being purchased, for which passengers and at what quality standard? Define routes, hours, accessibility, fare treatment and recovery expectations.



PASSENGER PROOF

Comfort, waiting time, affordability and access are separate outcomes.

Gate 2: Operations. Can the timetable be delivered with the proposed fleet, reserve margin, workforce and charging windows? Test traffic and disruption rather than an ideal operating day.



Gate 3: Energy and place. Are depot land, connection capacity, chargers, access rights and delivery dates secured? Name the entity responsible for each dependency.

CONFIDENCE

Preparation requirements are clearer than estimates of their financial benefit.

Gate 4: Commercial alignment. Does each payment purchase something measurable, and does each risk sit with a party able to influence it? Identify subsidy, currency and utilisation exposure explicitly.

Gate 5: Lifetime continuity. Who maintains performance, funds renewal and restores service after equipment or counterparty failure? Establish rights to essential operating data and support.

Gate 6: Passenger proof. How will completed service, waiting time, affordability and accessibility be observed? Publish shortcomings and corrective action alongside successful deployment.

A project cannot average away an unusable depot or an undefined payment source. Some gaps can be resolved during preparation; others invalidate the proposed delivery sequence. The test should therefore be a dated evidence register, not a league table of cities.

Confidence is high that the interfaces require joint attention, because they follow directly from the operating system.

Confidence is lower about the financial value of any specific contractual solution. Comparable contracts and longitudinal service data would be needed to test whether this framework predicts better outcomes.

PAN-AFRICAN COMPARISON AND SCALABILITY

IN BRIEF

- Dakar tests coordination across a concession and public infrastructure.
- East Africa tests a platform serving existing operators.
- Cape Town tests municipal procurement informed by local operational research.

CASE

TRANSFERABILITY TEST

Dakar: coordinate the corridor.	The dedicated corridor and long-term concession provide a structured setting for fleet operations.[3][8] Historical World Bank monitoring recorded 60,000 average weekday passengers and a 45-minute rush-hour in-vehicle journey between the specified endpoints at June 2025.[10] These are dated observations, not October 2026 ridership figures; in-vehicle time excludes access, waiting and transfers. The transferable question is whether all parts of the corridor operate as one passenger-service system.
Kenya and Rwanda: coordinate the operator platform.	The BasiGo model bundles equipment and support for existing operators.[2][9] Its relevance is not a universal claim that leasing is superior to ownership. It offers a way to examine whether predictable service inputs can support operators whose revenue remains sensitive to daily utilisation. Local route regulation, power tariffs and payment arrangements need separate diligence.
Cape Town: coordinate the transition.	The July 2026 announcement sets out a 38-bus initial procurement, with final delivery expected by March 2027.[1] Earlier municipal research plans explicitly examined local route conditions and operational requirements.[5] The lesson is preparation and staged learning, not that another municipality should copy the same vehicle, timetable or procurement timetable.
Other African cities: test the institution before scaling the fleet.	A February 2025 multi-city workshop documented the importance of context-specific requirements, operator engagement, finance and regulation.[11] Replication should standardise the questions and evidence formats, while allowing different answers. A city without secure depot land or dependable contracting authority may need preparation support before vehicle finance.

Sources: dated project and institutional evidence [1][2][3][5][8][9][10][11]. Interpretations are StoneComms original synthesis.

IMPLICATIONS FOR POLICY AND CAPITAL



IN BRIEF

- Governments should make service accountability visible across institutional boundaries.
- Financiers should fund preparation and learning alongside equipment.
- Operators should retain a practicable recovery plan throughout the contract.

EVIDENCE STANDARD

Public-source desk research. No proprietary data or original field interviews.

Transport authorities: issue one service specification that informs route planning, vehicle procurement and electricity arrangements. Establish a single accountable integration lead even where asset ownership remains divided. Publish service outcomes without exposing personal passenger data.

Utilities and municipal planners: validate connection capacity, depot location and delivery sequence before fleet commitments become irreversible. Distinguish an expected connection from an energised connection. Provide an escalation route when transport and power schedules diverge.

Development finance institutions: specify what concessional support is meant to overcome: initial operating uncertainty, financing tenor, preparation cost or another defined barrier. Require a learning plan that records baseline assumptions and subsequent performance. Do not describe one supported transaction as proof that an entire market has become commercially self-sustaining.

Operators, lessors and suppliers: negotiate continuity rights as carefully as price. Establish access to diagnostic information, maintenance capability, spares and replacement arrangements. Ensure that a change in supplier or lender does not leave a public service unable to operate.

Passenger and worker representatives: participate in defining service quality. Waiting, transfers, accessible boarding, staff conditions and complaint resolution should not be discovered as

secondary concerns after financial close. The research agenda should deliberately include people who cannot use the service as well as satisfied current passengers.



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RISKS AND COUNTERARGUMENTS

EVIDENCE STANDARD

Public-source desk research. No proprietary data or original field interviews.

IN BRIEF

- Integration can create concentration and dependency as well as convenience.
- Preparation has a cost, but unresolved interfaces also have a cost.
- Electrification must be judged against passenger and system outcomes.

Bundling can reduce coordination problems, but an exclusive platform may make switching difficult. Unbundling can improve competition, but leave responsibility dispersed. **StoneComms original synthesis:** neither structure should receive automatic preference. Compare continuity, contestability and whole-service cost under realistic failure scenarios.

Detailed preparation can delay deployment. The response should be reusable evidence templates and a proportionate stage gate, not an elaborate new bureaucracy. A small first tranche can generate learning if expansion depends on declared service tests rather than a precommitted fleet target.

Electric propulsion does not guarantee lower fares, better coverage or a lifecycle emissions benefit of a particular size. Those claims require their own counterfactuals and boundaries. Public reporting should distinguish operator savings from passenger savings and tailpipe improvements from whole-system emissions.

The public record also favours projects with communicative investors and institutions. Failed tenders, silent operators and people excluded from service are less visible. The comparison cannot establish which African city has the best model or support an individual investment recommendation.

COMMISSIONABLE RESEARCH AGENDA



IN BRIEF

- Build a comparable record of service, costs and contractual obligations.
- Examine passengers and workers beyond the easiest available respondents.
- Translate findings into procurement-ready evidence and contract interfaces.

EVIDENCE STANDARD

Public-source desk research. No proprietary data or original field interviews.

A useful institutional commission would follow operating and procurement cases across at least six African cities for a full seasonal cycle. It would begin with a register separating planned, ordered, delivered, commissioned and operating buses, and reconcile that register with completed trips rather than publicity milestones.

The operational workstream would combine timetable data, charger events, electricity bills, maintenance logs and disruption records. It would test the reasons for cancelled trips and distinguish traffic, energy, equipment, workforce and payment failures. Sampling and confidentiality rules should be agreed before access to commercial data is negotiated.

The commercial workstream would compare payment structures, utilisation floors, currency exposure, renewal funding and continuity rights. It would stress-test common scenarios against each contract without publishing proprietary terms. The purpose would be to explain which institutional conditions make a structure workable, not announce a universal financing winner.

Passenger research would include accessible-stop audits, time-use diaries, fare-and-transfer analysis and interviews with current users, non-users and displaced incumbent workers. The sample should cover peripheral areas and different travel periods. A comfortable vehicle serving only convenient routes should not be mistaken for a generally accessible network.

The final outputs would be a common service–performance dataset, an interface–risk register, country–specific legal and commercial questions, and a procurement specification linking service to assets. This would turn early deployment into reusable institutional knowledge.

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CONCLUSION

Africa's electric–bus opportunity is not one business model waiting for continental replication. It is a set of transport systems in which vehicles, power, operators, public institutions and passengers meet under different conditions.

The evidence supports a disciplined next step: define the journey, align the operating plan, allocate controllable risks and verify performance through time. Fleet finance becomes more credible when it is tied to a service that someone is responsible for sustaining. That is the conversion institutions should now demand.



EVIDENCE STANDARD

Public–source desk research. No proprietary data or original field interviews.

METHODOLOGY

Comparative public-source desk research completed on 15 October 2026. Cases were selected for variation in ownership, operating and financing structure. All quantities retain their source dates and status categories. No fleet totals were added across cases, and no investment return, emissions reduction or causal impact was calculated. Institutional guidance and project evidence informed the Service Conversion Test. No proprietary contracts, trip-level operating data or original field interviews were available.



EVIDENCE STANDARD

Public-source desk research. No proprietary data or original field interviews.

LIMITATIONS

The comparison is purposive and cannot represent all African cities. Announcements, commitments, modelled scenarios and historical operating observations are not equivalent. The Dakar charging paper is a preprint; investor and lender publications retain their institutional perspectives. Findings support preparation and further research, not a city ranking, market forecast or project-specific financial, legal or investment advice.

SOURCE NOTE

Prepared by StoneComms Research & Intelligence from public evidence available on 15 October 2026. The Service Conversion Test and associated recommendations are StoneComms original synthesis, not proprietary field research. Relevant SDGs are 9, 11 and 13, with SDG 11 primary. This is a relevance classification, not a claim of measured SDG impact, UN affiliation or endorsement.

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