

BUSINESS AND IT PROPOSAL

ELECTRIC PUBLIC TAXIS FOR KAMPALA

A concept proposal for privately operated, publicly regulated electric 14-seater taxis, with a rider app and a fleet data platform.



DOCUMENT CONTROL

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Purpose

This document sets out the business case, operating model, technology architecture, data strategy, financial logic and delivery plan for eTaxi: a network of electric 14-seater public taxis for Kampala, privately financed and operated under public regulation. Its purpose is to let public bodies, taxi operators, financiers and technology partners decide whether to take the concept to a funded pilot.

Intended readers

- Ministry of Works and Transport, as licensing and standards authority.
- Kampala Capital City Authority (KCCA), as route, stage and park authority.
- Taxi operator associations and individual vehicle owners.
- Development finance institutions and private investors.
- Technology, vehicle, energy and research partners.

Version history

VERSION	DATE	STATUS	CHANGE
1.0	19 October 2026	Concept for discussion	First issue

NOTICE

eTaxi is a concept. No vehicle is operating, no company is registered and no funding has been raised. Every figure for cost, saving, emissions and fleet size is indicative: it comes from a transparent model of energy costs only, described in Appendix A, and not from a full business plan or a quotation.

This document is not an offer of securities and is not a commitment by any named institution. Ministries, agencies, operators, associations, companies and funds named in it are cited as sources of public information. None has endorsed, reviewed or agreed to this proposal.

How to read this document

Each factual claim about the world carries a numbered reference, listed in Appendix D with its web address. Where the evidence was weak, conflicting or missing, the text says so. The tag **INDICATIVE** marks model outputs. The tag **PROPOSED** marks targets, plans and design choices that are this proposal's own and have not been agreed with anyone. Statements of opinion are introduced as the proposal's view.

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SECTION 1

EXECUTIVE SUMMARY

eTaxi is a concept for electric 14-seater public taxis in Kampala, privately financed and operated under public regulation, with a rider app and a fleet data platform. It is a concept only: nothing is operating, no company is registered and no funding has been raised.

82,347 UGX of energy cost saved per vehicle per day, base case case INDICATIVE	77.0% lower energy cost than petrol, base case	12.5 t CO2 avoided per vehicle per year, base case	2,000 vehicles at network scale, after a pilot of 30 and a corridor phase of 300 PROPOSED
477 taxis seized by 2 October 2026 ^[1]	69 repaired and passed the automated fitness test	408 still grounded	100 days planned length of the crackdown from 24 August 2026

The problem. On 24 August 2026 the Ministry of Works and Transport and the Uganda Police Traffic Directorate began a 100-day crackdown on commuter taxis in dangerous mechanical condition across Greater Kampala.^[1] The test is vehicle condition, not age. It still removes supply that commuters depend on, and operators say they cannot afford replacements.^[2] No scrappage or fleet-renewal loan scheme was found in the research behind this proposal.

The proposal. A licensed operating company, in which existing taxi owners and associations can hold shares or lease vehicles, would run electric 14-seaters on fixed routes from existing stages, with the fare shown before boarding, payment by mobile money and a stop-request button called Masaawo. A data platform would give riders arrival times and give regulators and planners trip and condition data they do not have today. The state-backed electric buses serve trunk corridors; eTaxis would serve feeder and cross-town routes and give condemned 14-seaters a renewal path.

The numbers. This is an energy cost comparison, not a business plan. In the base case a petrol 14-seater spends UGX 106,900 a day on fuel and an electric one UGX 24,553 on electricity. The saving is worth about UGX 103.9 million over eight years at the average shilling lending rate, and about UGX 152.9 million at the foreign-currency rate. The price of an electric 14-seater in Uganda is not known; the pilot would establish it.

The plan. A pilot of 30 vehicles in months 0 to 12, a corridor rollout of 300 in years 2 to 3 and network scale of 2,000 in years 4 to 6, with a gate between phases. At 2,000 vehicles the model gives about 25,000 tonnes of CO2 avoided a year.

WHAT WE ASK

Government: a pilot licence and stage access. Operators: co-design and first shareholding. Financiers: pilot and feasibility funding. Technology and research partners: platform, data and evaluation support. Section 16 sets out the asks and a 90-day plan.

SECTION 2

BACKGROUND: HOW KAMPALA GOT HERE

Kampala moves mainly on privately owned 14-seater taxis that were never given routes, timetables or fares. Three attempts to replace them with buses have failed or stalled, and a fourth, state-backed, began in May 2026.

2.1 From state buses to private minibuses

In 1972 a private bus company was nationalised to form the Uganda Transport Company, serving mainly Kampala and western Uganda; the report is seen only in summary.^[3] That company and the People's Transport Company collapsed in the early 1990s after vandalised and cannibalised parts and fare fraud, which opened the market to private minibus operators.^[4] Since then 14-seaters have been licensed with no fixed routes, timetables, fares or formal stops.^[5]

2.2 The taxi associations and KCCA

The sector is already private. Drivers hire the minibus from an owner for a daily charge and pay fuel and terminal fees.^[6] For nearly 30 years the taxi association UTODA managed taxis and parks under a KCCA contract; the start (about 1986) and end (about 2012) dates could not be confirmed.^[7] Reports conflict on how it ended: one says KCCA cancelled the contract in 2011,^[8] another that a KCCA email extended its management to 31 October 2014.^[9] KCCA then took over the parks and set a monthly fee of UGX 155,000 per taxi in place of daily dues; UTODA had collected over UGX 1 billion a month from about 7,000 taxis.^[10]

2.3 The bus attempts

Pioneer Easy Bus began in 2012 under a special regulation, with fares fixed at UGX 500 in the city centre and UGX 1,000 outside. It planned 500 buses, about 100 arrived at first, the bus lanes and terminals the state was to build never appeared, and the service failed within about a year.^[11] Tondeka Metro, announced on 12 December 2019 with 980 buses, did not materialise because ownership, financing, operation and regulation were unclear.^[12]

2.4 The electric buses of May 2026

E-Bus Xpress, run by Kiira Motors Corporation through a subsidiary, began scheduled cashless electric bus service in Kampala in May 2026 on City Square to Ntinda; the launch date of 4 May comes from a search summary.^[13] Fares run from UGX 800 to UGX 1,800 and the government plans 100 electric buses in the Greater Kampala Metropolitan Area (GKMA) by December 2026 and at least 300 by December 2027.^[14] The fleet size is reported inconsistently as 21, 23 or 30 buses, and passenger capacity as 42 or up to 90; this proposal does not resolve either conflict. Taxi operators were not consulted before the launch, their vice chairperson said, adding:

"We need to be part of the conversation."^[15] Mustapha Mayambala, UTOF vice chairperson (administration), 5 May 2026.

2.5 Timeline

DATE	EVENT
1972	Uganda Transport Company formed by nationalisation (summary source). ^[3]
2012 to 2013	Pioneer Easy Bus starts and fails within about a year. ^[11]
1 Oct 2018	Import ban on vehicles 15 years old or older takes effect. ^[16]

DATE	EVENT
12 Dec 2019	Government announces 980 buses (Tondeka Metro); they do not arrive. ^[17]
May to Jun 2020	Taxi registration by park; route numbers and route charts issued. ^[18]
12 Jun to 12 Jul 2025	Automated fines suspended after taxi strike threats; suspension later extended. ^[19]
5 and 23 Dec 2025	Ministry takes over vehicle inspection from SGS; reduced fees published. ^[20]
18 to 19 Mar 2026	20-day directive on unroadworthy taxis, removals to begin 8 April. ^[21]
May 2026	E-Bus Xpress electric buses begin service. ^[13]
13 Aug 2026	Union Transport Alliance says first electric taxis could run before end-2026. ^[22]
24 Aug 2026	Operation Ganyegenya, the 100-day crackdown, begins. ^[1]
2 Oct 2026	Ministry reports 477 taxis seized, 69 cleared, 408 grounded. ^[1]

SECTION 3

PROBLEM STATEMENT

The fleet is old, renewal is unfinanced, fuel is a volatile cost and commuters have no arrival information. A crackdown that tests vehicle condition has exposed all four at once.

3.1 An ageing fleet

The Daily Monitor reported in March 2023 that most Kampala taxis were up to 30 years old and gave no average.^[23] A 2025 remote-sensing study of Kampala found that diesel minibus taxis averaged 25 years old and emitted nitrogen oxides more than nine times the Euro 4 limit.^[24] The current number of taxis is not known: 2020 registration counts range from 7,340 to over 15,000 and a trade-press summary suggests 15,000 to 25,000 14-seaters in the GKMA.^[25] The pilot would count them.

Operators blame the age on the 2018 ban on importing vehicles 15 years or older, on the cost of newer vans and on exclusion from reforms.^[2] In March 2023 the chairman of UTOF said a legally importable used Toyota Hiace costs UGX 80 million to UGX 90 million and a new one carries at least UGX 28 million in taxes.^[23] A 2026 bill would lower the import limit from 15 to 13 years with a 50% environmental levy above that age; a minority report argues it would raise prices, and whether it passed is unconfirmed.^[26]

3.2 Operation Ganyegenya: what it is

The Ministry of Works and Transport launched a 100-day joint operation with the Uganda Police Traffic Directorate, announced at a Kampala press briefing by Minister Fred Byamukama on 20 August 2026 (articles vary on his title) and started on Monday 24 August 2026.^{[27][1]} It covers Kampala, Wakiso and Mukono, with checkpoints on Gayaza, Jinja and Hoima Roads.^[28]

BE EXACT: CONDITION, NOT AGE

The operation targets taxis in dangerous mechanical condition (DMC), described as "beyond repair". Well-kept newer vans are not targeted.^[27] No taxi age cap and no 14-seater ban was found in any 2026 source. The article of 20 August refers to an earlier proposal to phase out 14-seaters in favour of high-capacity buses; no current official plan to do so was found.

Police listed worn tyres, defunct brakes and headlights, and broken or rusty bodies; some vehicles were judged by sight and drivers were sent home, not arrested.^[28] Number plates of impounded vehicles were confiscated, and a vehicle returns only after re-inspection and a Certificate of Fitness at the government inspection facilities.^[1]

3.3 Numbers so far

On day one police reported 178 vehicles impounded,^[28] while another report said more than 400 were impounded and about half retained; the two conflict and the articles do not say why.^[2] The 100 days run to about 2 December 2026, the proposal's arithmetic from the start date, as no official end date was found.

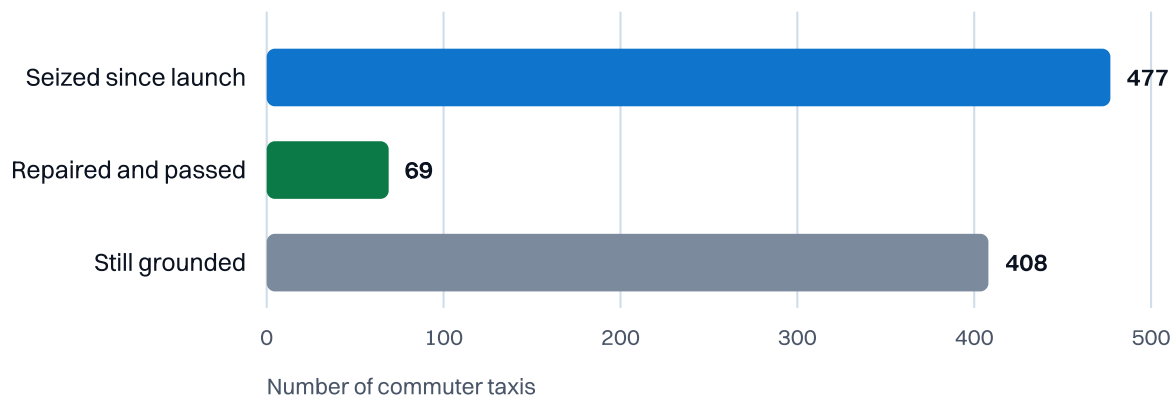


Figure 1. Operation Ganyegenya status on 2 October 2026, as reported by the Ministry of Works and Transport. Source: Daily Monitor, 3 October 2026.^[1]

A later ministry update reported inspection results for the taxis taken to the government centres at Namanve and Kawanda: by 15 October 2026, 531 had been tested, 423 (79.7 percent) had failed for dangerous mechanical condition and 108 had passed. The listed defects were brakes, steering, tyres, suspension and lights.^{[29][30]} Police also extended the operation into night hours after grounded taxis were found working after dark.^[31] Four in five of the vans that reach a test fail it, which is the clearest sign yet that repair alone will not return the grounded fleet to service.

The run-up is thinly documented. On 18 to 19 March 2026 the Works State Minister issued a 20-day directive with removals to begin on 8 April, and the UTOF chairman said he learned of it from the media.^[21] What happened on or after 8 April is not known from the sources used. The minister has said the government will not back down; the same report notes that past crackdowns were often suspended after pressure from operators.^[27] The result of the review meeting promised on 26 August is not known.

3.4 The supply shock and fares

A Mukono taxi leader estimated that about 75% of taxis stayed off the road by 26 August; this is his estimate, not a count.^[2] Many operators parked vehicles on the advice of UTOF before they could be impounded.^[32] Commuters waited more than 40 minutes, and only two taxis were seen heading to Kisaasi from the city centre in one hour.^[32] Uganda Railways Corporation capacity is about 4,000 passengers a day and it had added no services by 26 August.^[2]

ROUTE AND MODE	BEFORE	AFTER
Kasubi to Kampala, taxi	UGX 1,000	UGX 2,000 ^[32]
Bwaise to Kampala, taxi	UGX 2,000	UGX 4,000
Najjera to Kampala, shared car	not given	UGX 5,000
Boda boda, various routes	not given	up to UGX 3,000 more

3.5 Fleet renewal has no finance

No scrappage scheme and no fleet-renewal loan was found. Impounded vehicles are held until repaired and certified, not scrapped.^[1] The average shilling lending rate was 18.26% in April 2026 against a Central Bank Rate of 9.75% held on 13 August 2026; a commercial vehicle loan rate was not found, so the average rate is used as a proxy.^{[33][34]}

3.6 Fuel cost exposure

Drivers reported using about 20 litres a day on routes of about 12 km to and from the city and 25 to 30 litres on outskirts routes.^[35] Kampala petrol cost UGX 5,090 to UGX 5,400 a litre in April 2026 and UGX 5,140 to UGX 5,599 in a later survey.^[36] A highest recorded rate of UGX 6,499 for premium petrol on 15 June 2026 was also reported; it is a maximum, not an average, and the source page was not identified. Pump prices are deregulated, and the 2026 rise was linked to disruption at the Strait of Hormuz.^[37]

3.7 Air quality, safety and information

Kampala's 2025 annual average PM2.5 was 44.2 micrograms per cubic metre, tenth among world capitals, against a World Health Organization guideline of 5.^[38] Police recorded 26,044 road crashes and 5,383 deaths in 2025; no national breakdown for taxis was found.^[39] Riders cannot see when a taxi will arrive. A volunteer-built GTFS feed for Kampala exists, but no real-time feed for paratransit was found.^[40]

THE PROPOSAL'S VIEW

The crackdown is a symptom. It removes the worst vehicles but offers no route to better ones, so the likely result is repaired old vans, higher fares and a repeat in the next campaign. An independent commentator made a similar point, calling bad taxis "not the disease; they are the fever".^[41]

SECTION 4

STRATEGIC FIT AND POLICY ALIGNMENT

eTaxi fits the stated direction of national e-mobility policy and fills a gap in the state-backed electric bus programme. It does not depend on any policy that has yet to be confirmed.

4.1 National e-mobility policy and incentives

The National E-Mobility Strategy aims to make Uganda a net source of e-mobility solutions, with local production capacity of half a million vehicles by 2030 at 65% local content, and to electrify public transport such as buses, motorcycles and light rail.^[42] Sources disagree on whether it launched in 2023 or 2024.^[43] Its incentives include a ten-year income tax exemption for makers of vehicles, batteries and charging equipment, and VAT exemptions for locally made electric vehicles and for charging equipment and services.^[44]

The tax position of an imported 14-seat electric minibus is not known. Fully built electric vehicles attract 25% import duty,^[42] yet the 2024/25 budget was reported to exempt electric vehicles from VAT, stamp duty and income tax,^[45] and one report says an earlier duty waiver was reversed.^[46] The reports conflict and Section 14 treats the question as a ruling to obtain from the Uganda Revenue Authority.

4.2 National Development Plan IV and Vision 2040

The transport targets of the fourth National Development Plan (NDP IV), of Vision 2040 and of the National Transport Master Plan were not retrieved in the research for this proposal, so alignment with them is not claimed. Checking each target is a task in the first 90 days (Section 16). The 2010 JICA study recommended a metropolitan transport authority and a shift from paratransit to mass transit; this proposal's operating model is compatible with both.^[47]

4.3 Greater Kampala programmes

- **GKMA Urban Development Programme.** Parliament cleared a World Bank loan headlined at USD 556 million, mainly for roads, drainage and markets,^[48] at least 74.5 km of roads are to be upgraded.^[49] Better roads help any vehicle, and the programme is not a transport operator.
- **Light rail.** A memorandum with Orascom Construction began an 18-month feasibility study in March 2026 for routes including Kampala to Entebbe, Kira and Wakiso.^[50]

4.4 Complementing the state-backed electric buses

E-Bus Xpress runs on trunk corridors such as City Square to Ntinda and from Ntinda to Kira, with a target of at least 300 buses by December 2027.^[14] Taxi operators complained that tax-exempt, government-funded buses create an unlevel playing field (a summary of the report).^[51] The proposal's view is that the two serve different jobs and should be planned together.

SERVICE	BEST USED FOR	ROLE IN THE NETWORK
Large electric buses	High-demand trunk corridors with stops and priority	Backbone, state-backed
eTaxi 14-seaters	Feeder routes, cross-town links, areas buses do not reach	Feeder and distributor, privately operated
eTaxi as renewal path	Replacing condemned 14-seaters on routes they already serve	Owners move into the new fleet

PROPOSED eTaxi franchises would avoid duplicating a trunk corridor unless the regulator decides otherwise, and fare and timetable data would be published in the same open format so riders can plan trips across both services.

SECTION 5

PROPOSED SOLUTION

An electric 14-seater that looks and works like the taxi Kampala knows, with fixed routes, fares shown first, mobile money and arrival times, charged at depots overnight.

5.1 Vehicle class and candidate models

The 14-seater is the existing class, so stages, drivers and passenger habits carry over. No model has been selected, and the proposal has no agreement with any manufacturer. The table lists what the research found.

CANDIDATE	SEATS	BATTERY AND RANGE (CLAIMED)	PRICE
Joylong E6	12 to 14	86.1 kWh LFP, about 300 km city, 280 km highway; a dealer listing gives a different battery figure ^{[52][53]}	No African price found
BasiGo Ma3e	16 or 19	Up to 300 km, about 1.5 hours to recharge, 8 years or 400,000 km battery warranty; battery size not stated ^[54]	Not published
Higer H5C EV and H6C	15 and 18	Explored by Uganda taxi operators after a visit to China ^[25]	Not found
Converted Toyota Hiace	14	A Kenyan converter targets matatus; no Hiace result found ^[55]	Not found

No electric Toyota Hiace was found in any source; the Joylong E6 is described as a copy of the high-roof Hiace.^[56]

PROPOSED A competitive tender among at least three manufacturers, with a conversion option, would select the pilot vehicle.

5.2 What is and is not known about price

The price of an electric 14-seater in Uganda is not known. The nearest figures are a conventional Hiace taxi at about UGX 74 million, with tyres and conversion work taking total capital above UGX 80 million,^[57] and a global average battery pack price of USD 108 a kilowatt hour in 2025, with LFP packs at USD 81.^[58] At the average price an 86.1 kWh pack is worth about USD 9,299 **INDICATIVE**; that is a component price, not a vehicle price. BasiGo bus operators were reported to acquire vehicles for around USD 7,700 in Kenya and USD 8,800 in Rwanda before paying mileage-based fees, but this is a bus programme.^[59] The pilot's tender would produce the first Ugandan price.

5.3 Depot charging

PROPOSED Vehicles would charge overnight at depots on alternating-current chargers, with a few direct-current fast chargers for a midday top-up at busy terminals. The model puts a base-case vehicle at 43.7 kWh a day, so a pilot of 30 needs about 1,311 kWh a day **INDICATIVE**. A slow station is reported at about USD 2,500 and a fast station with permits at about USD 35,800.^[60]

The Q4 2026 commercial tariff averages UGX 562.1 a kWh (peak 666.5, off-peak 429.7) and the medium industrial tariff averages UGX 363.8; the schedule has no category for electric vehicle charging.^[61] Kiira Motors asked in 2023 for a flat UGX 270 a unit at charging points; whether it was adopted was not found.^[62]

5.4 The service

Before the trip

Routes start at existing stages. The fare for the whole trip is shown in the app and on the stage board before boarding. The app shows the next vehicle and a live arrival time, and works on low-end Android phones.

On the trip

Payment is by mobile money or card. Riders press Masaawo, the stop-request button, instead of calling out. Onboard cameras and a trip-sharing link let a rider send a live trip to a contact.

Optional extras

Door-to-door pickup is offered at a premium on selected routes. Its price is not set; the pilot would test willingness to pay. A rider can rate the trip and report a fault.

Cashless payment has a local precedent: E-Bus Xpress takes only MTN Mobile Money, Airtel Money and wristbands.^[14] **PROPOSED** eTaxi would accept cash at staffed stage kiosks during the pilot until usage data shows it can be dropped. Fares would be set with the regulator; current reference points are UGX 1,000 to 2,000 for short taxi trips before the crackdown^[32] and UGX 800 to 1,800 on E-Bus Xpress. Masaawo is this proposal's name for the button, taken from the stop call; riders would test the name in the pilot.

5.5 Proposed features

The features below are proposed, not built. They are grouped by who uses them and the phase in which each would ship. Pilot features are the minimum needed to run one corridor and measure it; the rest follow only if the pilot meets its gates (Section 12). **PROPOSED**

FEATURE	FOR	WHAT IT DOES	PHASE
Route search and saved routes	Rider	Finds the route from the nearest stage and remembers daily trips.	Pilot
Live beacon and arrival time	Rider	Shows every eTaxi on the route and the minutes to your stage.	Pilot
Find-me-an-eTaxi alerts	Rider	Keeps watching in the background, pings when the chosen eTaxi is close, and stops once you board. The server watches the vehicle, so the phone does not track the rider.	Pilot
Fare shown first	Rider	A fixed fare per trip, shown before boarding.	Pilot
Mobile money wallet	Rider	Pay by MTN MoMo or Airtel Money, with receipts in the app.	Pilot
Masaawo stop request	Rider, driver	Request your stop from your seat; it appears on the driver's dash.	Pilot
Trip sharing and alert button	Rider	Send a live trip link home; one tap reaches the operations desk.	Pilot
Driver dash	Driver	Next stops, stop requests, headway guidance and charge level.	Pilot
Earnings and lease ledger	Driver, owner	Daily takings, pay-as-you-drive deductions and the balance to ownership.	Pilot
Fleet console	Operator	Live map, uptime, incidents, and camera review on request under the access policy.	Pilot
Door-to-door pickup	Rider	Premium pickup at the rider's gate on selected routes.	Rollout

FEATURE	FOR	WHAT IT DOES	PHASE
Low-data and USSD mode	Rider	Arrival times and payment on basic phones and slow networks.	Rollout
Smart charging scheduler	Operator	Moves depot charging into off-peak tariff hours.	Rollout
Open data feed	City, developers	GTFS and GTFS Realtime for routes, stops and live positions.	Rollout
Planner dashboards	KCCA, Ministry	Anonymised origin and destination, demand and reliability reports.	Scale

5.6 User flows

Three journeys carry most of the value: a rider catching an eTaxi from a stage, a rider booking the premium door-to-door pickup, and a taxi owner whose van has been grounded moving onto an electric vehicle. Each is shown as a proposed flow; the pilot would test every step with real users before anything is fixed.

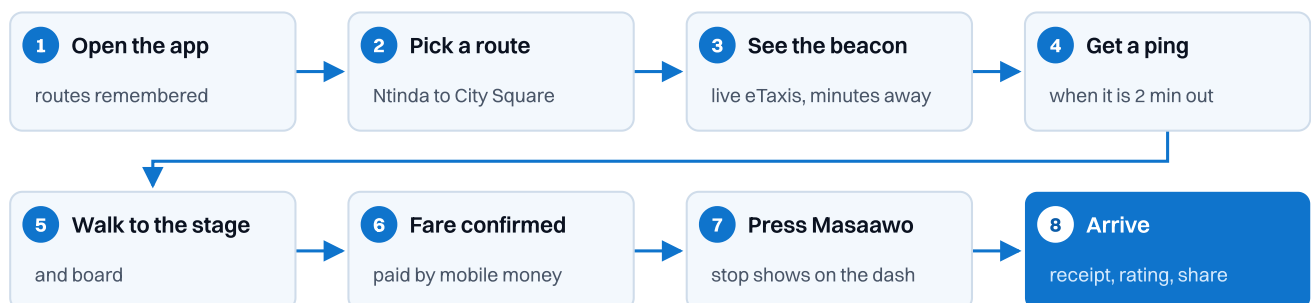


Figure 2. Rider: catch an eTaxi. Proposed flow.

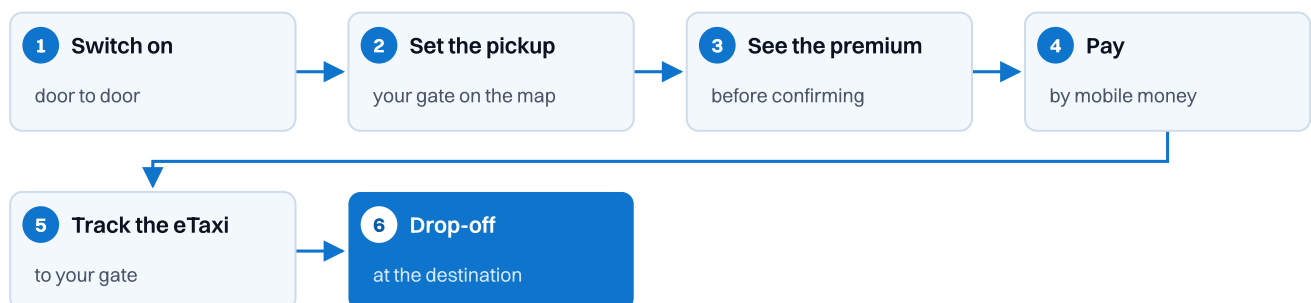


Figure 3. Rider: door-to-door pickup. Proposed flow.

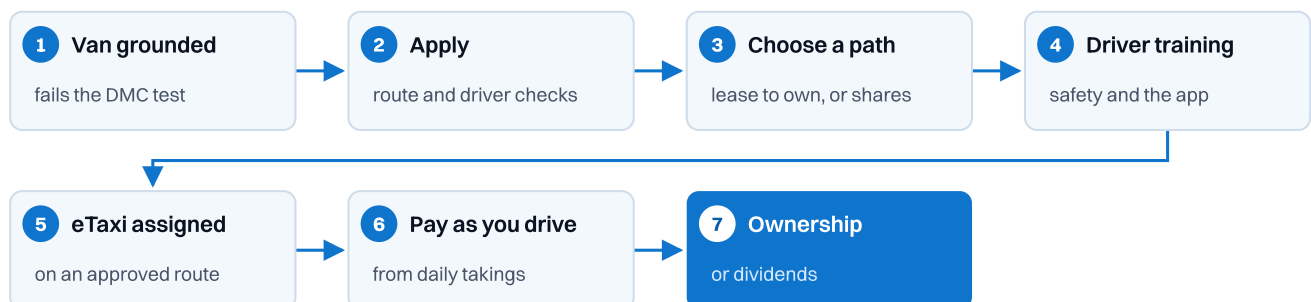


Figure 4. Owner: from a condemned van to an eTaxi. Proposed flow.

5.7 App screens

The screens below are concept designs taken from the eTaxi site. They show the rider's side of the pilot features: the beacon with live arrival times, the on-board view with the Masaawo stop request before and after it is pressed, and the fare screen with and without door-to-door pickup. Fares are examples, not proposed prices.

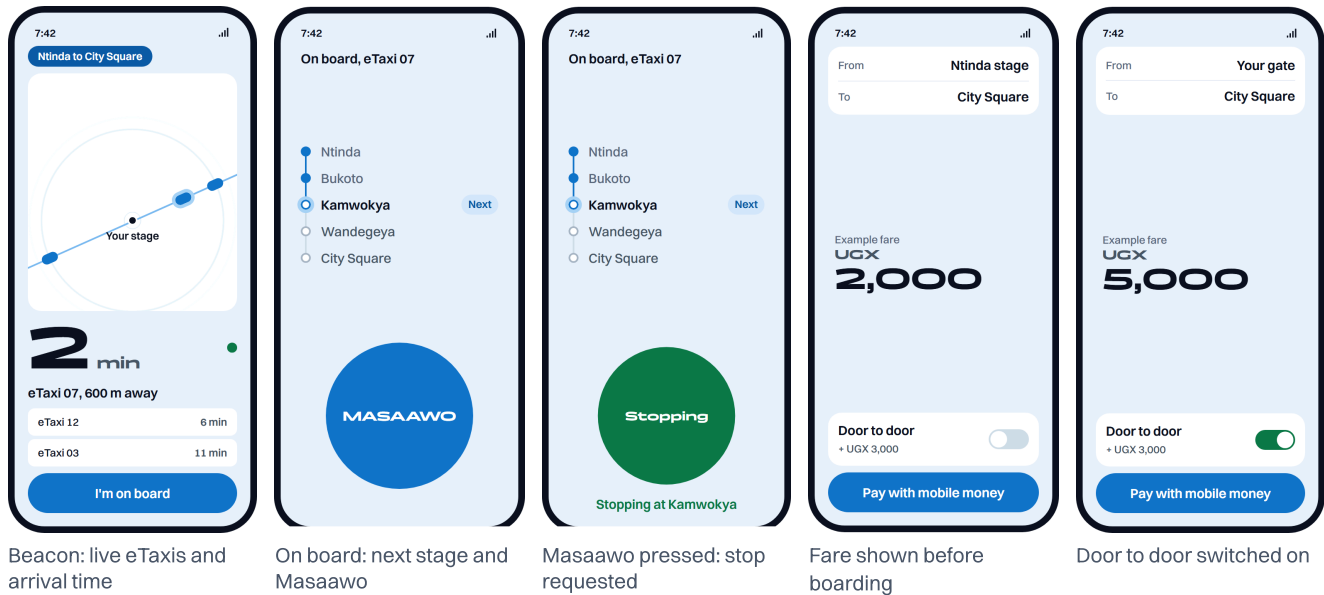


Figure 5. Concept app screens. Fares shown are examples.

SECTION 6

OPERATING AND PRIVATISATION MODEL

Kampala's taxi sector is already privately owned, so the aim is structured private delivery under public regulation: franchises, service standards and an operating company the existing owners can join.

6.1 What the term means here

Drivers hire vehicles from private owners for a daily charge,^[6] yet the sector has no routes, timetables or fares to enforce.^[5] In this proposal, privatisation means three things: the public authority sets routes, fares, safety and data standards; a private operating company delivers the service against those standards; and existing owners can take part as shareholders or lessees rather than be displaced. The only franchise-like precedent found is Pioneer's 2012 route allocation, and no 2026 official statement on franchising taxi routes was found.^[41]

6.2 Structure

- **Route or area franchises** **PROPOSED** : awarded by the regulator for fixed terms, with fare bands, service standards and data-sharing duties written into the contract.
- **An operating company** **PROPOSED** : not yet registered, owning or leasing vehicles and depots. Existing owners could surrender a condemned taxi for shares, or lease vehicles with an option to own.
- **Pay-as-you-drive leasing** **PROPOSED** : BasiGo describes a simple mileage-based fee, with no amount published for the Ma3e,^[54] an eTaxi fee would bundle energy, maintenance and a share of vehicle cost, and its level is not known.

PARTY	ROLE	ACCOUNTABLE FOR
Ministry of Works and Transport, Police	Licensing, inspection, driver standards	Safety and roadworthiness
KCCA	Route, stage and park allocation; franchise contract in Kampala	Service standards, fares, stages
Operating company	Vehicles, depots, drivers, customer service	Daily service and fleet availability
Owners and associations	Shareholding, route consultation, driver supply	Fair entry and conduct of members
Financiers	Debt and equity for vehicles and depots	Capital, with agreed reporting
Platform provider	App, telematics, payments, data platform	Uptime, security, data protection
Power utility and regulator	Grid connections, charging tariff	Reliable, fairly priced supply

6.3 Lessons from elsewhere

PLACE	WHAT HAPPENED	LESSON
Cape Town	All affected licence holders accepted compensation; owners could take shares in a vehicle operating company or a lump sum, with 12-year contracts. ^[63] In Dunoon, removing minibuses led to illegal operators. ^[64]	Offer shares and cash; do not remove service before replacing it

PLACE	WHAT HAPPENED	LESSON
South Africa	The scrapping programme removed about 77,763 taxis against a first-phase target of 135,894, paying over R5 billion; the allowance was judged too low. ^{[65][66]}	Scrappage alone is slow and underfunded
Kigali	Operators moved to service agreements paid on outcomes, with penalties; officials report daily ridership rising from about 150,000 to 240,000, not independently evaluated. ^[67]	Pay for service quality, not for vehicles
Dakar	A 100% electric bus rapid transit line was financed at EUR 135 million with loans, grants and equity; the 300,000 daily passengers are a projection, not a measurement. ^[68]	Concessional blends carry foreign-exchange risk
Kampala	Pioneer lacked promised lanes and terminals; Tondeka lacked clarity on ownership and financing (Section 2).	Fix the state's side of the deal before launch

6.4 A just transition for drivers and conductors

The number of drivers and conductors in the Kampala taxi sector, and their earnings, were not found; the pilot would survey them. **PROPOSED** The plan has four parts. First, drivers of surrendered vehicles get priority for training and employment; Kiira Motors has trained about 400 drivers for its buses, which shows the training can be done.^[14] Second, conductors, whose cash handling falls with mobile money, are offered roles as stage hosts, charging attendants and safety marshals. Third, driver vetting and refresher training follow the rules set for buses in August 2026, which include one-year badges and biometric log-in; whether they apply to 14-seaters is not stated.^[69]

SECTION 7

TECHNOLOGY AND SYSTEM ARCHITECTURE

One platform connects riders, drivers, vehicles, chargers and regulators. It is designed to work on cheap phones and weak networks, to publish open data, and to protect personal data from the first line of code.

7.1 Scope

In scope: the rider app, the driver app, the vehicle telematics unit and onboard sensors, payment integration, charging management, the fleet operations console, the data platform and the open interfaces that publish schedules and live positions. Out of scope: vehicle manufacture, grid works beyond the depot meter, and any change to government systems. **PROPOSED** Every requirement below is a design target, not a measured result.

7.2 Layered architecture

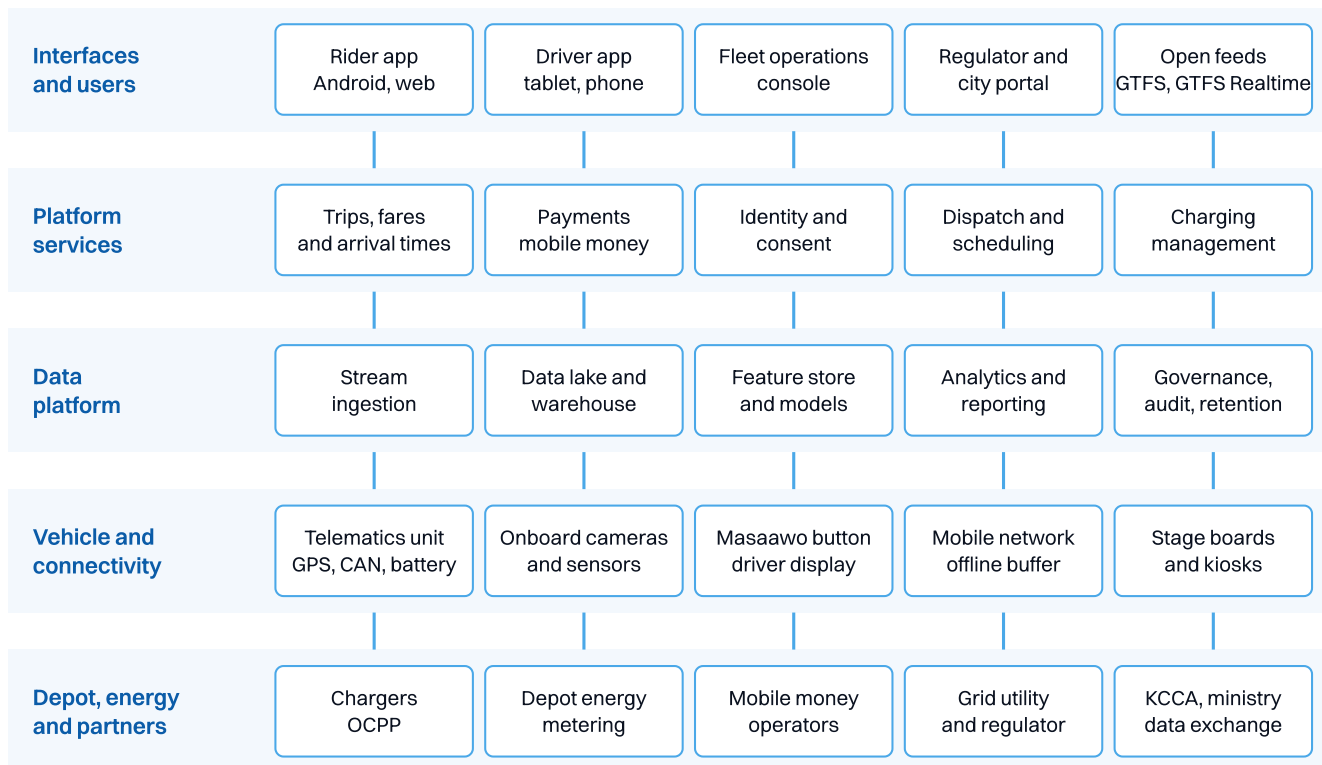


Figure 6. Proposed layered architecture. Events flow up from vehicles and chargers; commands and schedules flow down. All boxes are proposed components; none exists yet. Source: this proposal.

7.3 Components

COMPONENT	FUNCTION	MAIN USERS
Rider app	Route search, fare shown first, live arrival, mobile money payment, Masaawo, trip sharing, incident report	Riders
Driver app	Roster, route, stop list, alerts, charge status, fault reporting	Drivers

COMPONENT	FUNCTION	MAIN USERS
Telematics unit	GPS position, vehicle bus and battery data, camera control, local buffer	Platform, maintenance
Payments	Mobile money collection, reconciliation, refunds, driver and owner payouts	Riders, finance
Operations console	Live fleet map, headway view, charging, incidents, complaints	Control room
Data platform	Storage, features, models, anonymised exports, audit	Analysts, planners
Open interfaces	GTFS schedules, GTFS Realtime positions, partner APIs	Third-party apps, city

7.4 Standards

The General Transit Feed Specification (GTFS) and its Realtime extension are community-governed and maintained by MobilityData; a 2013 community effort extended GTFS to informal services with changing routes.^[70] ^[71] A volunteer-built GTFS dataset for Kampala exists,^[72] and the MobilityDatabase lists a Kampala feed covering a 14-seater paratransit operator and buses from two operators, with no errors and six warnings in its May 2025 quality report.^[40] No real-time feed for Kampala paratransit was found. The Mobility Data Specification is built for micromobility such as e-scooters, so it is not a ready fit for 14-seaters.^[73] The Open Charge Point Protocol (OCPP) is proposed as a procurement requirement for chargers so that no single supplier controls charging; the research behind this document retrieved no source on OCPP, so it is named here as a requirement, not described.

7.5 Requirements

REF	FUNCTIONAL REQUIREMENT	PRIORITY
F1	Rider sees the full fare before boarding and before paying.	Must
F2	Rider sees the next vehicle and a live arrival estimate for the stage.	Must
F3	Payment by MTN Mobile Money and Airtel Money, by app and by USSD.	Must
F4	Masaawo stop request reaches the driver display and logs the stop.	Must
F6	Console shows fleet position, headways, charge level and open faults.	Must
F7	Platform publishes GTFS and GTFS Realtime for all routes.	Must
F8	Consent, access and deletion requests handled in the app.	Must

AREA	NON-FUNCTIONAL REQUIREMENT PROPOSED
Availability	Rider services available 99.5% of each month; the console has a documented manual fallback.
Latency	Arrival estimates refresh at least every 15 seconds; 95% of app requests answered within 1 second on a 3G connection.
Offline tolerance	App shows cached routes and fares without data; the vehicle unit stores 48 hours of records and uploads when reconnected.
Low-end devices	Runs on low-cost Android phones with 2 GB of memory; install size under 30 MB; a web version and USSD fallback.
Data cost	A typical trip uses under 200 KB of mobile data; map tiles are cached.

AREA	NON-FUNCTIONAL REQUIREMENT PROPOSED
Security	Encryption in transit and at rest, role-based access, audit logs, independent penetration test before any launch.
Privacy by design	Data minimisation, purpose limits, retention schedule and anonymised exports built in; impact assessment before the pilot.

7.6 Build versus buy

PROPOSED Buy what is commodity and build what carries the service. Payments would be integrated through the mobile money operators or a licensed aggregator. Telematics hardware and the camera units would be bought to a specification. The charging-management layer would use OCPP-compliant software, bought or open source. The rider app, driver app, data platform and models would be built, because the local fare, stop and consent rules are the product.

7.7 Delivery approach and environments

PROPOSED Delivery would run in two-week cycles with four environments: development, test, staging and production. The pilot would run in shadow mode first, with the platform predicting arrivals for existing taxis along a chosen corridor, so the models learn local movement before electric vehicles arrive.

SECTION 8

DATA STRATEGY AND MACHINE LEARNING ROADMAP

Every vehicle is a sensor. The strategy is to collect only what each use case needs, put the earliest value in rider service and cost control, and share anonymised data with the city under written terms.

8.1 What the fleet generates

DATA STREAM	USED FOR	VOLUME DRIVER	SENSITIVITY
GPS traces	Arrival estimates, route and demand analysis	Vehicles and sampling rate	High: location
Payments and fares	Revenue, reconciliation, fraud checks	Paid trips	High: financial
Vehicle bus and battery	Maintenance, battery health	Vehicles and signals logged	Low
Charging sessions	Smart charging, load planning	Charges per day	Low
Driver events	Coaching, safety	Driving hours	High: employee
Onboard and road video	Incidents, road condition, driver assistance data	Camera hours	Very high: faces

8.2 Use cases in priority order

The order follows value, data readiness and risk. Where the research found no result from a comparable setting, the table says so.

#	USE CASE	HORIZON	EVIDENCE FOUND
1	Arrival prediction	0 to 12 months	Floating car data on nine Kampala minibus taxis shows irregular movement; ^[74] no measured arrival accuracy found.
2	Demand forecasting and dispatch	6 to 18 months	Route-level forecasts with random forest and XGBoost report accuracy, not savings. ^[75]
3	Headway control	12 to 24 months	No source retrieved.
4	Predictive maintenance	12 to 24 months	New York City Transit is implementing machine learning prognostics on over 5,800 buses; no outcome figures. ^[76] A vendor claim of a 73% fall in roadside failures has no method and is not relied on. ^[77]
5	Battery health and smart charging	12 to 30 months	No source on charging sessions retrieved; one comparable van carries an 8 year or 400,000 km battery warranty. ^[54]
6	Driver coaching and safety	12 to 24 months	A New York university plan models breakdown risk from speed and fault codes; a plan, not a result. ^[78]
7	Fleet management	0 to 12 months	Africa fleet management services are estimated at USD 370 million in 2025 in a single paid report. ^[79]
8	Origin and destination matrices for planners	12 to 36 months	A 2020 study recorded 1,492 trips and 587 routes at matatu stages using video and machine learning. ^[80]
9	Road condition mapping	18 to 36 months	A regional dataset of 3,236 images includes potholes and unmarked speed bumps. ^[81]

#	USE CASE	HORIZON	EVIDENCE FOUND
10	Carbon measurement for climate finance	6 to 18 months	Verra revised a methodology for new electric vehicles displacing fossil ones; ^[82] BasiGo obtained Gold Standard certification for e-bus credits. ^[83]
11	Training data for driver assistance and automated vans	36 months and later	Public driving datasets under-represent African roads; ^[81] no driver assistance or automated pilot on African roads was found.

THE PROPOSAL'S VIEW ON AUTOMATION

Boston Consulting Group expects robotaxis to reach emerging markets significantly later than the leading cities, perhaps only after 2040.^[84] eTaxi should not plan for driverless operation in Kampala before 2040. The near-term value is driver assistance, safety analytics and a labelled record of African road scenes that others lack.

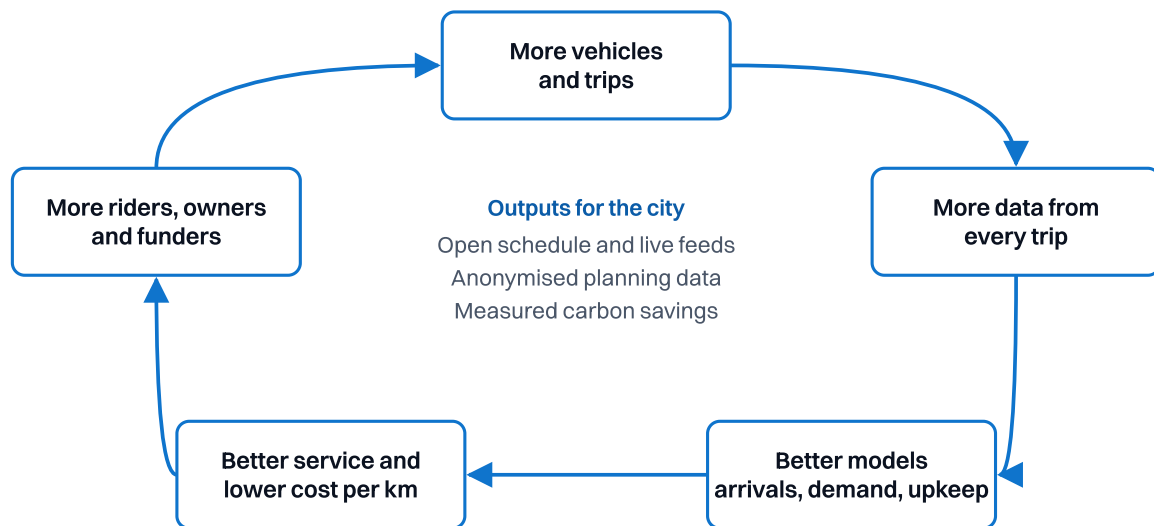


Figure 7. The proposed data flywheel. Each loop only works if riders and drivers trust how data is used (Section 8.3). Source: this proposal.

8.3 Data governance

The Data Protection and Privacy Act 2019 commenced on 3 May 2019 and its Regulations took effect on 12 March 2021; consent is a central principle and the Personal Data Protection Office sits within the National Information Technology Authority (NITA-U).^[85] Controllers must register and renew annually.^[86] Location is treated as an identifier, so vehicle position tied to a driver or rider may be personal data, and Regulation 30(2) bars onward transfer of personal data processed abroad to a third country without the data subject's consent.^[87] In July 2025 the regulator said prior permission for each cross-border transfer is not required but records of legal basis and safeguards must be kept.^[88]

No source tying the Act to CCTV in public vehicles or to taxi trip data was found, and no rule on anonymising trip data. **PROPOSED** eTaxi would therefore adopt the following rules and seek the regulator's view on them in the first 90 days.

- **Consent and notice.** Location and trip sharing are opt-in in the app; vehicles display camera notices; drivers sign a policy on cameras and driver events.

- **Retention.** Camera footage kept for a short fixed period unless tied to an incident; trip records identifiable for the shortest period needed, then aggregated.
- **Anonymisation.** Planning exports are aggregated by area and hour with minimum counts so no individual can be singled out.
- **Sharing terms.** Three tiers: open schedules and live positions; aggregated data for agencies under a data-sharing agreement; research access under signed terms. Individual-level data is never sold.
- **Accountability.** A named data protection officer, registration with the regulator and an impact assessment before the pilot.

8.4 Partnerships

Makerere University's AirQo project combines low-cost sensors, weather data and artificial intelligence, with sensors on buildings, schools and boda bodas.^[89] eTaxi could carry sensors on routes and share the readings. Digital Transport for Africa states that at least 105 million people in African cities lack reliable transit information.^[90] No sizing of vehicle-data revenue in Africa was found, so the financial case in Section 11 assumes none.

SECTION 9

MARKET AND DEMAND

Demand for taxi trips in Greater Kampala is large and growing, but the number of taxis, the daily trips by mode and the share of income spent on transport are not known. The pilot would measure them.

INDICATOR	WHAT THE SOURCES SAY
Population	Uganda 45.9 million (2024 census). ^[91] Preliminary counts: Kampala about 1.8 million, Wakiso about 3.3 million, Mukono 932,672. ^[92] The sum, about 6.0 million, is the proposal's arithmetic and not an official GKMA total.
Mode split	An undated ministry document gives walking 48%, taxi 33%, boda boda 10%, other 9%. ^[5] A study of workers gives 50, 30, 10 and 10% for walking, taxi, boda boda and private car. ^[93] A third source gives motorcycles 47%, cars 26% and buses 12% on a different basis. ^[94] The sources conflict.
Congestion	Congestion cost the metropolitan area USD 1.5 million a day, 4.2% of daily output. ^[95] Time lost is reported as about 90 minutes a day in one source and 2.5 hours in another. ^[96]
Daily trips by mode	Not known: no current total was found.
Household transport spending	Not known: no household figure was found.

9.1 Fares and the fleet

Taxi fares are short-distance and cash-based: UGX 1,000 from Kasubi to Kampala and UGX 2,000 from Bwaise before the crackdown,^[32] against UGX 800 to 1,800 on electric buses. E-Bus Xpress ridership was not found.

The number of 14-seaters is not known. Registration snapshots from 2020 conflict: KCCA reported over 15,000 registered and the ministry 14,000 with route charts, while other counts were 12,184, 13,301 route numbers and 7,340 registered out of 13,000 captured.^{[18][97][98]} A trade-press summary suggests 15,000 to 25,000 today.^[25]

PROPOSED The pilot would count taxis on its corridor with stage surveys. Against the lowest of those estimates, 2,000 vehicles would be about 13%, the proposal's arithmetic; the pilot of 30 vehicles carries 420 seats and cannot affect the market.

SECTION 10

ENVIRONMENTAL AND SOCIAL IMPACT

Because Uganda's grid is largely hydropower, each electric 14-seater avoids most of the carbon of a petrol one. Local air and safety benefits are plausible but not yet quantified for minibus taxis.

10.1 Carbon

In the base case one petrol 14-seater emits 14.4 tonnes of CO₂ a year, while an electric one charged from the grid accounts for 1.9 tonnes, so 12.5 tonnes are avoided per vehicle per year **INDICATIVE**. The conservative and favourable cases give 11.6 and 17.2 tonnes. The model uses 2.3 kg of CO₂ per litre of petrol, from fleet-software references because primary IPCC, EPA or DEFRA tables were not retrieved,^[99] and a grid factor of 0.137 tonnes per megawatt hour, the combined margin in a United Nations standardised baseline.^[100]

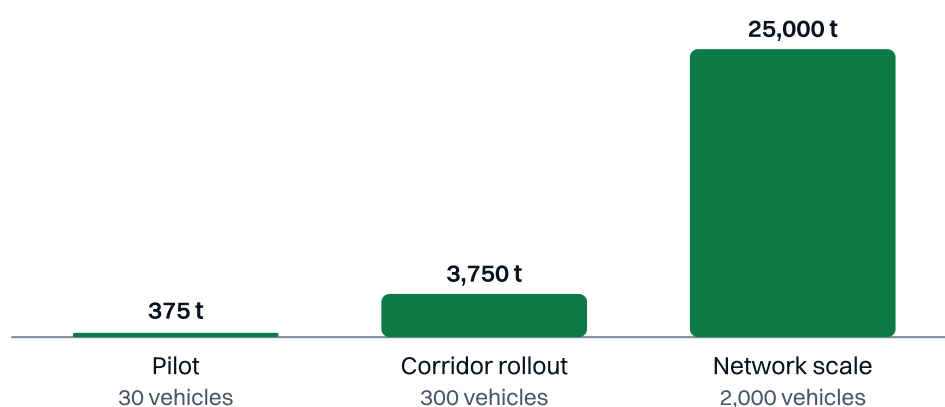


Figure 8. Indicative CO₂ avoided per year, tonnes, by proposed fleet phase, base case. Source: eTaxi model (Appendix A), model.json fleet table.

One caution applies: grid factors differ by vintage: an older Ugandan study reports an operating margin of about 0.614 and a combined margin of about 0.550,^[101] and the hydro share is reported as 85%^[102] against 68.5% for hydro and bagasse in 2008 to 2012.^[103] The older factor would narrow the saving considerably, so the pilot should measure the grid factor at the depot supply.

10.2 Air quality and noise

An electric van has no exhaust. Kampala's PM_{2.5} level in 2025 was 44.2 micrograms per cubic metre against a guideline of 5 (Section 3), and the national environment authority attributes about 60% of air pollution to transport, a calculation that is unverified.^[104] A University of Michigan model of electric boda bodas found CO₂ down 36% and nitrogen oxides down 58%, but PM_{2.5} up 97% because of bagasse and heavy-fuel-oil power plants.^[105] No study quantifying the health benefit of electric minibus taxis was found. Noise has not been measured; the pilot would record it.

10.3 Safety, jobs and inclusion

Police recorded 5,383 road deaths in 2025.^[39] eTaxi cannot claim a reduction in advance. **PROPOSED** It would instead measure incidents per million vehicle kilometres from the first day, use camera and telematics data for driver coaching, and publish the result. Jobs cannot be counted yet because current driver and conductor numbers are not known; the transition plan in Section 6.4 sets the intent. For inclusion, **PROPOSED** the pilot would test: a cash

and USSD route for riders without smartphones; concession fares for pupils, following the school pass precedent set by E-Bus Xpress;^[14] well-lit stages and visible driver identity for women riders; and step and seat design that suits older riders and people with disabilities, written into the vehicle tender.

SECTION 11

FINANCIAL CASE

WHAT THIS SECTION IS

This is an energy cost comparison, not a full business plan. It compares what a petrol and an electric 14-seater spend on energy. It leaves out vehicle price, maintenance, insurance, driver pay and charger cost, none of which could be priced from the sources found. Nothing here is a quotation, a forecast or a return on investment.

11.1 Three scenarios

The model compares driver-reported fuel use with electricity use at published tariffs **INDICATIVE**. The base case uses city routes, a mid-2026 pump price and the average commercial tariff. The conservative case uses the lowest 2026 pump price seen, the peak tariff and heavier energy use. The favourable case uses outskirts routes, the late-May 2026 pump price and off-peak depot charging. Appendix A lists every input.

ITEM	CONSERVATIVE	BASE	FAVOURABLE
Petrol per day (litres)	20.0	20.0	27.5
Pump price (UGX per litre)	5,090	5,345	5,599
Distance (km per day)	130	112	150
Electric use (kWh per km)	0.50	0.39	0.39
Tariff (UGX per kWh)	666.5	562.1	429.7
Petrol cost per day (UGX)	101,800	106,900	153,972
Electricity cost per day (UGX)	43,322	24,553	25,137
Saving per day (UGX)	58,478	82,347	128,835
Saving (%)	57.4%	77.0%	83.7%
Saving per year (UGX)	18,244,980	25,692,411	40,196,536
Saving per year (USD)	4,895	6,894	10,785
Energy cost per km, petrol / electric (UGX)	783 / 333	954 / 219	1,026 / 168
CO2 avoided per year (tonnes)	11.6	12.5	17.2

Sources for inputs: fuel use, Daily Monitor; ^[35] pump prices, Daily Monitor; ^[36] tariffs, Daily Monitor, 5 October 2026. ^[61]

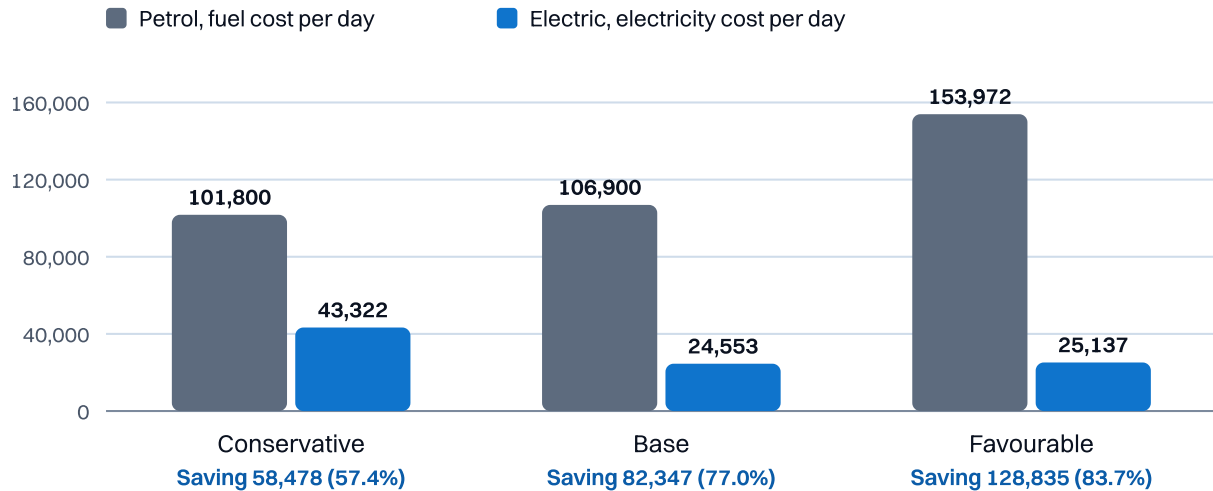


Figure 9. Indicative daily energy cost per vehicle, UGX, petrol versus electric, three scenarios. Source: eTaxi model (Appendix A), using Daily Monitor fuel, pump price and tariff reports.

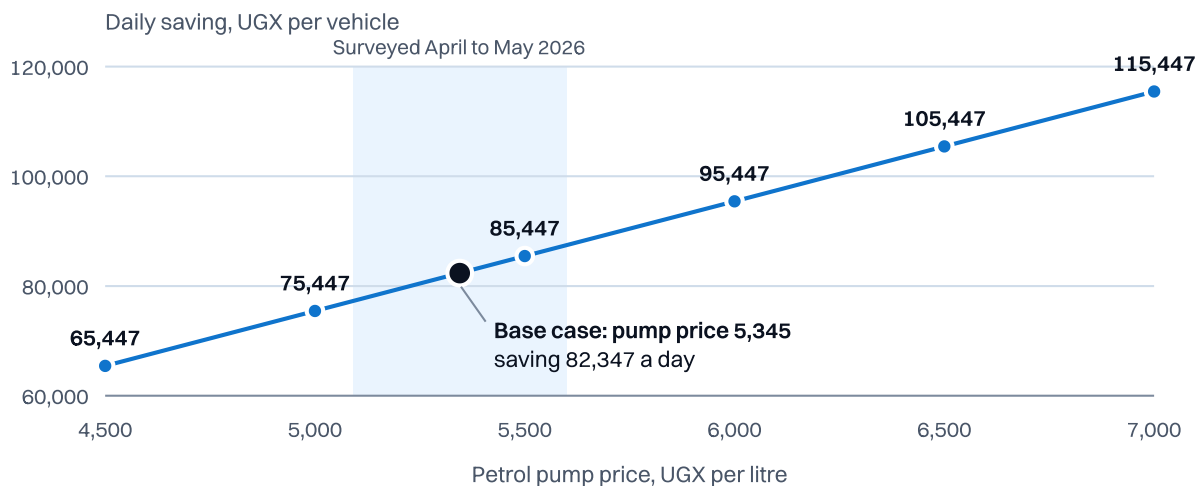


Figure 10. Indicative daily energy saving per vehicle against the petrol pump price, base case (20 litres, 112 km, 0.39 kWh per km, UGX 562.1 per kWh). The shaded band is the 2026 pump price range in the surveys cited in Section 3. Source: eTaxi model price curve.

Each UGX 500 rise in the pump price adds UGX 10,000 to the daily saving. The electricity cost in the base case is fixed at UGX 24,553 a day, so the saving remains large across the whole 2026 price range.

11.2 What the saving can finance

If the whole energy saving serviced a loan over the model's eight-year life, it would support extra upfront cost up to its present value at the lending rate. The model uses the average shilling lending rate of 18.26% (April 2026) and the average foreign-currency rate of 7.09% (February 2026).^{[33][106]} A commercial vehicle loan rate was not found, so these are proxies.

PRESENT VALUE OF EIGHT YEARS OF SAVING	CONSERVATIVE	BASE	FAVOURABLE
At 18.26% shilling rate (UGX)	73,799,762	103,924,138	162,592,381
At 7.09% foreign-currency rate (UGX)	108,567,265	152,883,413	239,190,611
At 18.26% (USD)	19,801	27,884	43,626
At 7.09% (USD)	29,130	41,021	64,178

In the base case the saving could service about UGX 103.9 million of extra capital at the shilling rate, or about UGX 152.9 million at the foreign-currency rate. For scale, a conventional taxi is reported at about UGX 74 million, with total capital above UGX 80 million.^[57] The electric price is not known, so no payback period is stated. The foreign-currency rate carries exchange-rate risk: in 2026 the shilling traded between 3,457.9 and 3,787.9 to the dollar.^[107]^[108]

11.3 Capital items

ITEM	KNOWN FIGURE	STATUS
Conventional 14-seater, reference	About UGX 74 million; used legal-age Hiace UGX 80 to 90 million; new Hiace carries at least UGX 28 million in taxes	Reported; 2023 and undated ^[23]
Electric 14-seater	Not known	Pilot tender
Battery pack, 86.1 kWh	USD 9,299 at the 2025 global average	Component only
Slow charger	About USD 2,500	National strategy figure ^[60]
Fast charger, installed	About USD 35,800	National strategy figure
Depot land, grid connection, telematics, cameras, platform build, insurance, duty and VAT	No price found	To be quoted

11.4 Revenue streams

Fares are the base. **PROPOSED** Further streams are a door-to-door premium, lease and mileage fees from owners using company vehicles, charging services, advertising, anonymised data services to agencies and carbon credits. None is quantified. Advertising was not researched. No price for electric bus credits was found. BasiGo obtained Gold Standard certification for its electric bus project and expects to sell its first credits, which shows the route exists.^[83]

11.5 Funding structure options

SOURCE	EVIDENCE FROM THE RESEARCH	FIT
Development finance debt	Dakar's electric bus line used a EUR 85.4 million loan split equally between Proparco and EAIF. ^[68] BasiGo took USD 17.5 million of debt from British International Investment and the US DFC. ^[109]	Vehicles and depots
Growth equity	BasiGo raised USD 24 million of Series A equity led by Africa50; totals are reported as USD 42 million or 41.5 million. ^[110]	Operating company
Concessional climate finance	The Global Environment Facility approved USD 13.46 million for an African Development Bank-led green mobility facility, at concept stage. ^[111] An undated page lists seven target countries, which do not include Uganda. ^[112] Uganda's eligibility is not known.	First-loss, local-currency tranche

11.6 Sensitivities and what would break the case

The energy saving is robust: it stays above UGX 58,000 a day in the conservative case. The case is decided by what the saving must pay for. It would break if the electric vehicle premium over a petrol one exceeds the present value in the table above; if lending is dearer than 18.26% or dollar debt meets a weaker shilling; if utilisation falls well below

the modelled 112 km a day; if the battery fails before the eight-year life; if the electricity tariff for charging is reclassified upward; or if franchises and stage access are not granted. Energy use is the largest technical unknown, since published projections span 0.39 to 0.93 kWh per kilometre. Each is a pilot measurement.

SECTION 12

IMPLEMENTATION PLAN

Three phases, each larger than the last, with a gate between them. No phase starts until the evidence from the one before meets agreed thresholds.

The phase sizes are planning targets set by this proposal, not forecasts **PROPOSED**. Figures for fuel, energy and carbon are indicative model outputs **INDICATIVE**, base case.

PHASE	WINDOW	VEHICLES	SEATS	SAVING (UGX BN A YEAR)	CO2 AVOIDED (T A YEAR)
Pilot	Months 0 to 12	30	420	0.77	375
Corridor rollout	Years 2 to 3	300	4,200	7.71	3,750
Network scale	Years 4 to 6	2,000	28,000	51.38	25,000

12.1 Gates

Gate 1: pilot to corridor

- Measured energy use at or below 0.50 kWh per km.
- Vehicle availability at least 95%.
- First Ugandan vehicle price, maintenance and charger costs known and in the model.
- Franchise terms agreed and association agreements signed.
- Financing term sheets for 300 vehicles.

Gate 2: corridor to network

- Corridor performance against the model's base case, with variances explained.
- Unit economics shown with measured costs and the loan terms available.
- Grid capacity confirmed for the proposed depots.
- Carbon method and verifier agreed.
- Funding identified for the next 1,700 vehicles.

All gate thresholds are proposed and would be agreed with the regulator and financiers before the pilot begins.

12.2 Workplan

WORKSTREAM	YEAR 1	YEAR 2	YEAR 3	YEARS 4 TO 6
Pilot fleet, 30	Tender, depot, operate			
Corridor fleet, 300	Plan	Roll out	Complete	
Network fleet, 2,000			Plan	Roll out
Platform and data	Release 1, shadow mode	Prediction models	Open data, planners	Safety and driver assistance data
Regulation and franchise	Pilot licence, tax ruling	Franchise award	Renewals	Network franchises
Financing	Grants, pilot debt	Corridor financing	Refinance	Network financing

12.3 Milestones

WHEN	MILESTONE	LEAD
Months 0 to 3	Pilot licence application, tax ruling request, data regulator guidance, association working group	Sponsor with ministry, KCCA, URA
Months 3 to 6	Vehicle tender, depot site and grid connection, platform release 1 running in shadow mode on existing taxis	Sponsor, platform provider
Months 6 to 9	First vehicles in service on the pilot corridor	Operating company
Months 9 to 12	30 vehicles in service; Gate 1 review	Operating company, regulator
Years 2 to 3	Franchise award; 300 vehicles; Gate 2 review	Regulator, operating company
Years 4 to 6	Rollout towards 2,000 vehicles; battery swap review; evaluation published	Operating company, partners

SECTION 13

RISK REGISTER

Ratings are the proposal's judgement at concept stage **PROPOSED**. They would be re-scored at each gate, and no risk is rated low where the evidence is missing.

RISK	LIKELIHOOD	IMPACT	MITIGATION	OWNER
Operator resistance or strike; the sector has forced a pause before ^[19]	Medium	High	Co-design, shares or leases for owners, consultation board, no removal of service before replacement	Sponsor, associations
Policy reversal or inconsistent enforcement	Medium	High	Written pilot licence with fixed terms; design that works under several policy outcomes	Regulator
Fuel price fall or tariff reclassification	Medium	Medium	Plan on the conservative case; seek a depot tariff in writing	Sponsor, power utility
Foreign exchange: dollar costs, shilling fares	High	High	Local-currency tranche, price-indexed leases, hedging study	Financiers, operating company
Grid reliability and capacity at depots	Medium	High	Early utility engagement, phased connections; supply reliability was not researched	Operating company, utility
Vehicle supply, quality and price	Medium	High	Tender among at least three makers, warranties, acceptance tests, conversion option	Operating company
Battery life below warranty benchmark	Medium	High	Telemetry on battery health, warranty terms, replacement reserve	Operating company
Data protection breach or camera complaint	Medium	High	Officer, impact assessment, registration, minimisation, security testing	Platform provider
Safety incident	Medium	High	Driver vetting and coaching, cameras, inspection, speed limits, incident review	Operating company
Demand shortfall or fare resistance	Medium	High	Fares at current taxi levels, fare shown first, pilot measurement before scaling	Operating company
Financing not secured at workable cost	High	High	Grants for the pilot, phased debt, concessional blends, owner equity	Sponsor, financiers

SECTION 14

REGULATORY AND COMPLIANCE PATH

The pilot needs a licence, a route and stage arrangement, a tax ruling, a charging arrangement and data protection registration. Several of these have no published precedent for electric 14-seaters.

AREA	WHAT IS NEEDED	AUTHORITY	NOTE
Public service vehicle licence and route chart	Licence and chart for each vehicle and route	Ministry of Works and Transport	Bus charts were recalled in August 2026; whether this applies to 14-seaters is not stated ^[69]
Vehicle inspection	Annual test and Certificate of Fitness	Ministry, Police	Fee for the 8 to 20 passenger band is UGX 49,500; free re-test within 30 days of a failure ^[113]
Franchise and partnership	Contract or partnership approval	KCCA, finance ministry PPP unit	Major partnerships need cabinet and parliamentary approval; threshold not known ^[12]
Electricity supply	Depot connection and a charging tariff	Power utility, Electricity Regulatory Authority	No electric vehicle tariff in the Q4 2026 schedule; the utility's role after the Umeme concession was not found ^[61]
Depot environmental approval	Not researched	Not researched	Requirement to be confirmed
Data protection	Registration of the controller, annual renewal	Personal Data Protection Office, NITA-U	Enforcement against unregistered entities reported from December 2022 ^[114]

14.1 Standards

Vehicles would meet the ministry's inspection scope of brakes, suspension, lighting, exhaust emissions and general condition.^[113] Chargers would be required to support OCPP, and schedules and live positions would be published as GTFS and GTFS Realtime (Section 7.4).

14.2 Tax position

Reports conflict. A November 2025 report gives 25% import duty on fully built electric vehicles with VAT and income-tax relief aimed at local manufacturing,^[42] while the 2024/25 budget was reported to exempt electric vehicles from 18% VAT, stamp duty and income tax.^[45] The treatment of a 14-seat electric minibus is not known. A 2026 bill would lower the used-vehicle import limit to 13 years; its passage is unconfirmed and it does not affect new electric vehicles directly.^[26] The proposal asks the revenue authority for a written ruling in the first 90 days.

14.3 Data protection registration

The operating company would register as a data controller before processing personal data, appoint a data protection officer and keep records of the legal basis and safeguards for any processing outside Uganda (Section 8.3). Rules on cameras in public vehicles were not found, so the company would ask the regulator for written guidance.

SECTION 15

PERFORMANCE INDICATORS AND EVALUATION

The pilot is an evaluation as much as a service. Every target below is proposed and would be set formally at Gate 1 with the regulator, using the measured baseline.

INDICATOR	DEFINITION	TARGET PROPOSED
Vehicle availability	Share of scheduled vehicle-days in service	At least 95%
Energy use	kWh per kilometre, measured at the meter and vehicle	At or below 0.50; model base case 0.39
Charging cost	UGX per kilometre	At or below UGX 333, the conservative case
Energy saving against petrol	UGX per vehicle per day against the surveyed petrol baseline	At least UGX 58,478, the conservative case
Fare shown first	Share of trips with the fare shown before boarding	100%
Arrival accuracy	Median error of the arrival estimate at five minutes out	Two minutes or less
Safety	Incidents per million vehicle kilometres	Baseline set in the pilot; target at Gate 1
Local workforce	Share of pilot driver and station roles filled from the existing taxi workforce	At least 70%
Data protection	Reportable breaches; consent records complete	None; 100%
Carbon	CO2 avoided, annualised, measured	Model value of 375 tonnes at 30 vehicles

An independent university team would evaluate the pilot against a matched set of existing taxis on adjacent routes, publish its method before the pilot starts and report to the regulator and financiers at each gate.

SECTION 16

WHAT WE ARE ASKING FOR AND NEXT STEPS

The proposal asks four groups for specific, limited commitments that would allow a funded pilot to be designed. None is a commitment to the full plan.

GROUP	THE ASK
Government: Ministry of Works and Transport, KCCA, finance ministry, Revenue Authority, Electricity Regulatory Authority, Personal Data Protection Office	A pilot licence for up to 30 electric 14-seaters on one corridor with access to gazetted stages; a written view on whether the franchise falls under the PPP Act; a ruling on duty and VAT for 14-seat electric minibuses; an interim depot charging tariff; guidance on cameras and telematics data.
Operators and associations	Nominate a working group; co-select the pilot corridor; share route and fleet information; state interest in shares or leases; join a consultation board with a grievance route.
Financiers	Fund feasibility and pilot preparation through a grant or concessional facility; indicate appetite for vehicle and depot debt, including a local-currency tranche; advise on carbon revenue. The amount needed is not yet costed.
Technology, vehicle and research partners	Vehicle makers quote for the pilot; mobile money operators agree integration terms; universities agree an evaluation design and data terms; platform partners bid for release 1.

16.1 The first 90 days

DAYS	ACTIONS	OUTPUT
0 to 30	Form the working group; meet the ministry, KCCA and associations; verify NDP IV and Vision 2040 transport targets; submit the tax ruling request; decide the legal form of the company	Working group terms of reference; alignment note
31 to 60	Select the corridor with stage surveys and a taxi count; issue a request for information to at least three vehicle makers; draft the data protection impact assessment; agree the evaluation design	Corridor shortlist; vehicle responses; assessment draft
61 to 90	File the pilot licence application; prepare a financing paper with a costed pilot budget; procure platform release 1; hold the first review with funders and the regulator	Licence application; budget; go or stop decision

STATUS

eTaxi is a concept. Nothing described in this document is operating, no company is registered and no funding has been raised. The next step is a conversation, not a contract.

APPENDIX A

MODEL ASSUMPTIONS AND METHOD

Every cost, saving, emissions and fleet number in this document comes from one model, which compares energy cost only. This appendix reproduces its assumptions without change.

A.1 Assumptions

1. Working days per year (312, six days a week) is an assumption, not a measured figure.
2. Daily distance is derived, not measured: 35,000 km a year from an old minibus survey spread over 312 days gives 112 km a day. The conservative and favourable cases use 130 and 150 km.
3. Fuel use is driver-reported litres per day from press interviews, treated as petrol.
4. Electric energy use of 0.39 and 0.50 kWh per km comes from the low end and a midpoint of published projections; the Joylong E6 maker claim implies 0.29.
5. Maintenance, insurance, driver pay, vehicle price and charger cost are excluded from the saving. Only energy is compared.
6. Present values use an eight-year life (the battery warranty term published for one comparable van) and Uganda average lending rates for shilling and foreign-currency loans.
7. Fleet phase sizes are planning targets set by this proposal, not forecasts.

A.2 Method in words

- Petrol cost per day is litres used per day multiplied by the pump price per litre.
- Electricity cost per day is distance per day, multiplied by kWh per kilometre, multiplied by the tariff per kWh.
- Saving per day is petrol cost minus electricity cost; the percentage is that saving divided by petrol cost. Saving per year multiplies by 312 working days; the dollar figure divides by UGX 3,727 to the dollar.
- Present value is the annual saving multiplied by the eight-year annuity factor at the stated lending rate.
- Petrol CO₂ is litres per year multiplied by 2.3 kg; grid CO₂ is kWh per year multiplied by 0.137 kg; the difference is the CO₂ avoided.
- Fleet figures multiply the base-case per-vehicle figures by 30, 300 and 2,000 vehicles and by 14 seats. The pack cost of USD 9,299 is 86.1 kWh multiplied by USD 108 per kWh.

A.3 Inputs and sources

INPUT	VALUE USED	SOURCE AND GRADE
Fuel use	20 litres a day (city); 27.5 (outskirts, midpoint of 25 to 30)	Driver-reported ^[35] (summary only)
Annual distance	35,000 km, giving 112 km a day	Old survey of 52 minibuses, attribution probable ^[115]
Petrol price	UGX 5,090, 5,345 and 5,599 a litre	Spot surveys, April to May 2026 ^[36] (summary only)
Electricity tariff	UGX 666.5, 562.1 and 429.7 a kWh	Q4 2026 commercial peak, average, off-peak; page read ^[61]
Electric energy use	0.50 and 0.39 kWh a km	Published projections, 0.39 and 0.93 conflict ^[116]

INPUT	VALUE USED	SOURCE AND GRADE
Joylong E6 pack and range	86.1 kWh; about 300 km	Importer claim ^[52]
Grid emission factor	0.137 tonnes a megawatt hour	Standardised baseline PSB0058 ^[100]
Petrol emission factor	2.3 kg CO2 a litre	Fleet-software reference ^[99]
Lending rates	18.26% shilling; 7.09% foreign currency	Bank of Uganda averages ^[33]
Exchange rate	UGX 3,727 to the dollar	9 August 2026 ^[108]
Conventional taxi capital	UGX 80,000,000	Kenyan site, unclear vehicle age ^[57]
Chargers	USD 2,500 slow; USD 35,800 fast	National strategy as reported ^[60]
Battery pack price	USD 108 a kWh	2025 global average ^[58]

Most dossier sources were seen only as search summaries; they should be re-read on the page before the figures are used in a funding document.

APPENDIX B

OUTLOOK AND PROJECTIONS TO 2040

The outlook is uncertain on every axis, and the evidence is thinnest for vans and for Uganda. These are readings of published projections, not forecasts by this proposal.

TOPIC	EVIDENCE	READING FOR ETAXI
Population	Kampala from about 4 million to 7 million at 5.32% a year (no year given); ^[117] metropolitan growth of 4.24% a year to 2030; ^[118] urban population of 21 million by 2040; ^[119] boundaries differ.	Demand rises on any reading; the question is who serves it.
Electric vehicle adoption	Electric vehicles were about 1% of new car sales in Africa in 2025; a 2026 study of 52 countries finds battery vehicles cost-effective well before 2040, with financing the main barrier. ^{[120][121]} An earlier forecast of 4 to 8% of the vehicle stock by 2030 in five countries compares with the observed 1%. ^[122]	Adoption forecasts have run ahead of sales. The case should not depend on private-car uptake.
Battery prices	The 2025 average pack price was USD 108 a kWh, down 8%, with LFP packs at USD 81; further falls were expected in 2026. ^[58] No projection to 2040 was retrieved, and no Africa van cost-parity study was found.	Vehicle price should keep falling; the model does not assume it.
Automation	Waymo reported about 500,000 paid rides a week in 10 US cities in March 2026 and a target above 1 million by end-2026, not confirmed as reached. ^{[123][124]} BCG puts the cost of opening a new US city at USD 15 to 30 million and sees emerging markets perhaps viable only after 2040. ^[84]	Plan on human drivers to 2040; collect assistance data now.

APPENDIX C

GLOSSARY

TERM	MEANING
Stage	A taxi pick-up and drop-off point; some are gazetted by KCCA and some are informal.
Masaawo	This proposal's name for the in-vehicle stop-request button, taken from the call riders make to ask for a stop.
DMC	Dangerous mechanical condition, the test applied in the 2026 crackdown.
Operation Ganyegenya	The 100-day crackdown on taxis in DMC, launched 24 August 2026.
PSV	Public service vehicle.
GKMA	Greater Kampala Metropolitan Area; the crackdown covers Kampala, Wakiso and Mukono, and wider definitions exist.
KCCA	Kampala Capital City Authority.
UTOF	A taxi operators' body whose officials are quoted in 2026 reports; its full name is not given in the sources used.
UTODA	The association that managed taxis and parks under a KCCA arrangement until about 2012.
Boda boda	Motorcycle taxi.
GTFS	General Transit Feed Specification: an open format for schedules and stops.
GTFS Realtime	The companion format for live positions and delays.
OCPP	Open Charge Point Protocol, the communication standard proposed for chargers.
PDPO, NITA-U	The Personal Data Protection Office, which sits within the National Information Technology Authority.
ERA, UEDCL	The Electricity Regulatory Authority and the state power distribution utility.

APPENDIX D

SOURCES

Numbered in order of first citation. Web addresses are as given in the research record; several pages were seen only as search summaries and should be re-read before quotation in a funding document.

1. Daily Monitor, 3 Oct 2026. <https://www.monitor.co.ug/uganda/news/national/only-69-impounded-taxis-cleared-to-return-to-kampala-roads-says-works-ministry-5618090>
2. Daily Monitor, 26 Aug 2026. <https://www.monitor.co.ug/uganda/news/national/police-soften-dmc-taxi-crackdown-after-chaos-5571686>
3. Commonwealth Secretariat, date not shown. <https://www.thecommonwealth-ilibrary.org/index.php/comsec/catalog/download/1029/1025/9000?inline=1>
4. EngrXiv preprint, date not shown. <https://engrxiv.org/preprint/download/1188/2501>
5. Ministry of Works and Transport, date not shown. https://www.ric.works.go.ug/rc/files/7.6_Development_Public_Transport_Policy_Kampala.docx
6. JICA, 2010. https://openjicareport.jica.go.jp/pdf/12013033_02.pdf
7. ATC News, date not shown. <https://atcnews.org/after-utodas-strangle-hold-on-public-transport-was-broken-it-is-karibu-to-the-new-city-busses/>
8. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/utoda-out-kcca-takes-over-city-taxis-1596600>
9. The Independent, date not shown. <https://independent.co.ug/ready-for-a-fight>
10. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/kcca-finally-takes-over-city-taxi-parks-1508432>
11. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/was-pioneer-bus-case-study-for-kampala-city-transport-1726448>
12. Songhai Advisory, 6 May 2022. <https://songhaiadvisory.com/blog/2022/5/6/peak-troughs-and-people-surround-ugandan-capitals-bus-transit-plans>
13. Pulse Uganda, 21 May 2026. <https://www.pulse.ug/story/e-bus-xpress-kampala-kayoola-bus-fares-routes-how-to-pay-mobile-money-2026052117230378064>
14. Pulse Uganda, 31 Aug 2026. <https://www.pulse.ug/story/e-bus-xpress-free-rides-kampala-routes-fares-2026083114302199453>
15. Nile Post via AllAfrica, 5 May 2026. <https://allafrica.com/stories/202605060099.html>
16. Parliament of Uganda, date not shown. <https://www.parliament.go.ug/news/1514/importation-old-cars-banned>
17. Eagle Online, 12 Dec 2019. <https://eagle.co.ug/2019/12/12/govt-moves-to-introduce-980-buses-to-ease-traffic-flow-and-congestion-in-kampala/>
18. KCCA, 2020. <https://www.kcca.go.ug/news/409>
19. Daily Monitor, 2025. <https://www.monitor.co.ug/uganda/news/national/uganda-extends-suspension-of-auto-eps-amid-ongoing-review-5116548>
20. Eagle Online, 5 Dec 2025. <https://eagle.co.ug/2025/12/05/govt-takes-over-vehicle-inspections-from-swiss-firm-sgs/>
21. Daily Monitor, 19 Mar 2026. <https://www.monitor.co.ug/uganda/news/national/govt-bans-vehicles-in-dangerous-mechanical-condition-5396010>
22. Pulse Uganda, 13 Aug 2026. <https://www.pulse.ug/story/kampala-electric-taxis-2026-2026081312485458856>
23. Daily Monitor, 9 Mar 2023. <https://www.monitor.co.ug/uganda/news/national/why-kampala-city-s-taxis-are-falling-apart-4152234>
24. ICCT, Jun 2025. https://theicct.org/wp-content/uploads/2025/06/ID-400-%E2%80%93-Kampala-remote-sensing_TRUE_final.pdf
25. Business Times Uganda, date not shown. <https://businesstimesug.com/kampalas-taxis-look-to-electric-minibuses-to-compete-with-electric-buses/>
26. Parliament of Uganda, Apr 2026. [https://bills.parliament.ug/attachments/FPED3-26-Report%20on%20the%20Traffic%20and%20Road%20Safety%20\(Amendment\)%20Bill,%202026%20\(Including%20Minority%20Report\).pdf](https://bills.parliament.ug/attachments/FPED3-26-Report%20on%20the%20Traffic%20and%20Road%20Safety%20(Amendment)%20Bill,%202026%20(Including%20Minority%20Report).pdf)
27. Daily Monitor, 20 Aug 2026. <https://www.monitor.co.ug/uganda/news/national/govt-launches-100-day-crackdown-on-unroadworthy-taxis-in-greater-kampala-5564908>
28. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/police-impound-178-vehicles-on-day-one-of-crackdown-on-dmc-5569952>
29. ChimpReports, 16 Oct 2026. <https://chimpreports.com/423-commuter-taxis-fail-dangerous-mechanical-condition-tests/>
30. The Independent (Uganda), Oct 2026. <https://www.independent.co.ug/423-taxis-fail-mechanical-fitness-tests-in-namanve-kawanda/>
31. The Independent (Uganda), Oct 2026. <https://www.independent.co.ug/traffic-police-extend-operation-ganyegenya-into-night-hours/>
32. Daily Monitor, 25 Aug 2026. <https://www.monitor.co.ug/uganda/news/national/commuters-stranded-in-travel-chaos-5570062>
33. Eagle Online, 23 Apr 2026. <https://eagle.co.ug/2026/04/23/ugandas-shilling-lending-rates-rise-to-18-73-in-february-2026/>

34. Daily Monitor, Aug 2026. <https://www.monitor.co.ug/uganda/news/national/bank-of-uganda-holds-benchmark-rate-at-9-75-as-inflation-edge-prompts-caution-5557436>
35. Daily Monitor, date not shown. <https://monitor.co.ug/uganda/news/national/what-shs100-tax-levied-on-fuel-means-for-motorists-3388586>
36. Daily Monitor, Apr 2026. <https://www.monitor.co.ug/uganda/news/national/fuel-price-snapshot-kampala-pump-prices-vary-5426166>
37. Daily Monitor, 2026. <https://www.monitor.co.ug/uganda/news/national/uganda-s-fuel-prices-may-not-be-adjusted-even-after-us-iran-peace-agreement-say-experts-5498384>
38. UG Business, Mar 2026. <https://ugbusiness.com/2026/03/energy-oil-gas/environment/uganda-ranks-among-worlds-most-polluted-countries-as-air-quality-worsens>
39. Eagle Online, 30 Mar 2026. <https://eagle.co.ug/2026/03/30/road-carnage-over-4600-people-killed-in-26044-crashes-in-2025/>
40. MobilityDatabase, May 2025. <https://mobilitydatabase.org/feeds/gtfs/mdb-1813>
41. The Independent via AllAfrica, 25 Aug 2026. <https://allafrica.com/stories/202608250399.html>
42. AllAfrica, 6 Nov 2025. <https://allafrica.com/stories/202511060049.html>
43. Techpoint Africa, date not shown. <https://techpoint.africa/news/uganda-electric-motorcycle-tax-breaks/>
44. PlusNews Uganda, date not shown. <https://plusnews.ug/?p=31414>
45. The EastAfrican, Jun 2024. <https://theeastafrican.co.ke/tea/business/uganda-banks-on-tax-exemption-incentive-for-e-mobility-drive-4658852>
46. The EastAfrican, 2024. <https://theeastafrican.co.ke/tea/business/uganda-reinstates-tax-on-e-vehicles-4673578>
47. JICA, 2010. https://openjicareport.jica.go.jp/pdf/12013033_06.pdf
48. Parliament of Uganda, date not shown. <https://www.parliament.go.ug/news/6887/house-clears-us556-million-world-bank-loan-greater-kampala>
49. KCCA, Apr 2026. <https://www.kcca.go.ug/news/1108>
50. AllAfrica, 16 Mar 2026. <https://allafrica.com/stories/202603160654.html>
51. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/launch-of-electric-buses-irks-taxi-operators-5448494>
52. Bus News Australia, 2022. <https://www.busnews.com.au/detail/joylong-e6-1214-seater-full-electric-minibus-785503>
53. Australian Mining, 2022. <https://www.australianmining.com.au/detail/joylong-e6-1214-seater-full-electric-minibus-785503>
54. BasiGo, date not shown. <https://www.basi-go.com/ma3e>
55. Move Electric, date not shown. <https://www.moveelectric.com/node/51330>
56. Autoindustriya, date not shown. <https://www.autoindustriya.com/auto-industry-news/joylong-e6-is-an-all-electric-hiace-clone-from-china.html>
57. Streamline Feed, date not shown. <https://streamlinefeed.co.ke/news/how-to-start-taxi-business-uganda-costs-regulations>
58. BloombergNEF, Dec 2025. <https://about.bnef.com/insights/commodities/lithium-ion-battery-pack-prices-fall-to-108-per-kilowatt-hour-despite-rising-metal-prices/>
59. ImpactAlpha, date not shown. <https://impactalpha.com/?p=111969>
60. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/business/markets/govt-to-install-3-500-e-vehicle-charging-stations-4690636>
61. Daily Monitor, 5 Oct 2026. <https://www.monitor.co.ug/uganda/news/national/uedcl-sets-new-power-tariffs-for-final-quarter-5620680>
62. The EastAfrican, 2023. <https://theeastafrican.co.ke/tea/business/kiira-motors-seeks-cut-in-power-tariffs-4370652>
63. World Bank PPP Knowledge Lab, date not shown. <https://ppp.worldbank.org/node/8507>
64. GroundUp, date not shown. <https://groundup.org.za/article/dunoon-long-battle-between-taxis-and-city>
65. Parliament of South Africa, date not shown. https://www.parliament.gov.za/storage/app/media/Docs/exe_rq_na/211b4f13-85f2-4c82-ab18-eea62f29d8f0.pdf
66. Parliamentary Monitoring Group, date not shown. <https://www.pmg.org.za/committee-meeting/31039/>
67. AllAfrica, 25 May 2026. <https://allafrica.com/stories/202605250095.html>
68. Hogan Lovells, date not shown. <https://hlc.com/en/news/hogan-lovells-advises-proparco-and-eaif-on-the-financing-of-dakar-s-future-electric-brt-bus-network>
69. Nile Post via AllAfrica, 19 Aug 2026. <https://allafrica.com/stories/202608200167.html>
70. Digital Matatus, date not shown. <https://digitalmatatus.com/post5.html>
71. Dublin Core Metadata Initiative, date not shown. <https://msi.dublincore.org/standards/gtfs>
72. TUMI Data Hub, date not shown. https://hub.tumidata.org/dataset/gtfs_kampala_kampala
73. Civic Tech Guide, date not shown. <https://civictechguide/projects/digital-public-goods-standard>
74. Uganda National Research Repository, date not shown. <https://nru.uncst.go.ug/handle/123456789/3670>
75. University of Luxembourg, date not shown. <https://orbi.lu.uni.lu/bitstream/10993/67355/1/Bus%20Station%20Demand%20Prediction.pdf>
76. UITP, date not shown. <https://www.uitp.org/case-studies/expanding-prognostics-and-integrating-machine-learning-with-bus-telematics/>
77. Oxmaint (vendor), date not shown. <https://oxmaint.com/industries/education/school-bus-predictive-maintenance>

78. NYU Tandon, date not shown. <https://engineering.nyu.edu/research-innovation/centers/cusp/research/capstone-projects/directory/telematics-nyc-school-buses>
79. Ken Research, date not shown. <https://www.kenresearch.com/industry-reports/africa-fleet-management-services-market>
80. Transport for Cairo, Dec 2024. https://transportforcairo.com/wp-content/uploads/2024/12/GKMA_task-final-report_Obj_1-2_fixed.pdf
81. ETASR, 2026. <https://etasr.com/index.php/ETASR/article/view/17251>
82. Verra, date not shown. <https://verra.org/?p=65566>
83. Ecofin Agency, date not shown. <https://www.ecofinagency.com/news-industry/1304-54628-kenyan-e-mobility-firm-basigo-certified-to-sell-carbon-credits-from-buses>
84. Boston Consulting Group, date not shown. <https://web-assets.bcg.com/pdf-src/prod-live/here-at-last-the-evolution-of-the-robotaxi.pdf>
85. DLA Piper, date not shown. <https://www.dlapiperdataprotection.com/?c=UG&t=law>
86. ULII, 2019. <https://ulii.org/en/akn/ug/act/2019/9/eng@2019-05-03>
87. ULII, 3 May 2019. <https://ulii.org/akn/ug/act/2019/9/eng@2019-05-03/source>
88. DLA Piper Privacy Matters, Aug 2025. <https://privacymatters.dlapiper.com/2025/08/uganda-data-protection-regulator-clarifies-compliance-requirements-for-offshore-entities>
89. Google, date not shown. https://about.google/intl/en_uk/stories/clean-air-for-kampala/
90. World Resources Institute, date not shown. <https://www.wri.org/initiatives/digital-transport-africa>
91. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/uganda-s-population-now-at-45-9m-people-says-ubos-4671332>
92. Daily Monitor, Jun 2024. <https://www.monitor.co.ug/uganda/news/national/2024-census-northern-districts-register-population-surge-4672464>
93. Daily Monitor, date not shown. <https://monitor.co.ug/uganda/news/national/50-of-workers-walk-to-and-from-kampala-study-says-3598394>
94. TUMI, 2023. https://transformative-mobility.org/wp-content/uploads/2023/03/Tumi_Kampala_Factsheet-S3MGEE.pdf
95. International Growth Centre, 2020. <https://www.theigc.org/wp-content/uploads/2020/10/Baertsch-2020-policy-brief-19148.pdf>
96. Business Times Uganda, date not shown. <https://businesstimesug.com/how-much-does-the-masaka-highway-jam-cost-uganda-each-year/>
97. The Independent, date not shown. <https://independent.co.ug/12000-taxis-registered-so-far-by-kcca>
98. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/over-8-000-taxis-have-no-routes-1894106>
99. Husqvarna, date not shown. <https://www.husqvarna.com/uk/support/articles/how-does-husqvarna-fleet-services-calculate-my-carbon-footprint-ka-01138/>
100. UNFCCC, 2022. https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20220811123519440/PSB0058_Final_Recommendation.pdf
101. UNFCCC, Dec 2013. <https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20140407115440958/Uganda%20GEF%20Report%2003Dec2013%20TR.pdf>
102. International REC Standard, date not shown. https://www.trackingstandard.org/wp-content/uploads/I-REC-Country-Assessment-Uganda_v1.pdf
103. UNFCCC, 2014. https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20150727164902965/Assessment_report_Uganda%20GEF_final_20140922.pdf
104. AllAfrica, 8 Sep 2026. <https://allafrica.com/stories/202609080064.html>
105. University of Michigan, Feb 2022. <https://news.umich.edu/electrifying-motorcycle-taxis-in-kampala-uganda-shows-air-pollution-benefits>
106. AllAfrica, 26 Jun 2026. <https://allafrica.com/stories/202606260486.html>
107. ValutaFX, 2026. <https://www.valutafx.com/history/ugx-usd-2026>
108. CurrencyFreaks, 9 Aug 2026. <https://currencyfreaks.com/historical/convert/2026-08-09/UGX/USD/5>
109. CNBC Africa, date not shown. <https://cnbcafrica.com/media/6363682685112/basigo-secures-42mn-to-accelerate-electric-bus-expansion-across-east-africa->
110. The Condia, date not shown. <https://thecondia.com/basigo-secures-41-5m-to-drive-electric-bus-expansion-in-kenya-and-rwanda/>
111. LogistAfrica, Jun 2026. <https://logistafrica.com/en/highlights/gef-approves-13-46-million-for-african-development-bank-led-initiative-to-accelerate-green-mobility-solutions-across-africa/>
112. Africa.com, date not shown. <https://africa.com/headlines/1-million-sustainable-energy-fund-for-africa-grant-to-drive-electric-mobility-shift-in-seven-african-countries>
113. Eagle Online, 23 Dec 2025. <https://eagle.co.ug/2025/12/23/govt-unveils-reduced-motor-vehicle-inspection-fees-as-mandatory-checks-take-effect>
114. Afriwise, date not shown. <https://insights.afriwise.com/blog/beat-the-data-protection-registration-deadline>
115. Transport Links / FCDO, 2002 conference. <https://transport-links.com/fcdo-publications/urban-transport-services-in-sub-saharan-africa-recommendations-for-reform-in-uganda-codatu-x-conference-lome-togo-12-15-november-2002/>
116. DOAJ record, Aug 2023. <https://doaj.org/article/577a9283014a4f5fae423f9c85a19af1>

117. Daily Monitor, date not shown. <https://monitor.co.ug/uganda/business/markets/kampala-s-population-to-grow-to-seven-million-people--4759018>
118. Daily Monitor, date not shown. <https://monitor.co.ug/uganda/business/markets/greater-kampala-needs-62-000-housing-units-annually-to-contain-rising-population-says-report--4726114>
119. Daily Monitor, date not shown. <https://www.monitor.co.ug/uganda/news/national/urban-population-to-hit-21-million-by-2040-ubos-3816050>
120. ETH Zurich Research Collection, 2026. <https://www.research-collection.ethz.ch/items/e9beae22-2d8b-4036-bd67-e28560c12e4e>
121. MIT Technology Review, 11 Feb 2026. <https://www.technologyreview.com/2026/02/11/1132714/evs-africa-cost/amp/>
122. McKinsey, date not shown. <https://www.mckinsey.com/za/our-insights/power-to-move-accelerating-the-electric-transport-transition-in-sub-saharan-africa>
123. Noqta, Mar 2026. <https://noqta.tn/en/news/waymo-500k-weekly-rides-robotaxi-10-cities-2026>
124. Claims Journal, 12 Feb 2026. <https://amp.claimsjournal.com/news/national/2026/02/12/335668.htm>