ClimEdge
Driving Sustainable Change, Together.

TRANSFORMING AUTOMOTIVE WASTE INTO ECONOMIC AND ENVIRONMENTAL OPPORTUNITY

CURATED BY CLIMEDGE HUB LIMITED

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ABOUT CLIMEDGE HUB

Climedge Hub Limited is a Nigeria-based climate innovation, research, and consulting firm committed to accelerating Africa's sustainable mobility and clean energy transition. As an electric mobility catalyst and think tank, Climedge exists to transform how people and goods move across African cities and rural corridors by advancing affordable, locally relevant, and low-carbon mobility solutions.

The organization works at the intersection of climate innovation, sustainable transport, policy, and inclusive development, supporting the shift away from costly, polluting internal combustion engine (ICE) vehicles toward cleaner, more efficient transport systems.

Climedge conducts research, policy analysis, market intelligence, stakeholder engagement, and ecosystem development across key areas, including electric mobility, informal transport systems, circular economy solutions, battery ecosystems, climate policy, and green industrialization. Through its work, the organization contributes to evidence-based conversations that shape the future of mobility and the energy transition in Africa.

By combining research, innovation, advocacy, and strategic partnerships, Climedge aims to support a mobility future that is environmentally sustainable, economically inclusive, and adapted to African realities.

EXECUTIVE SUMMARY

The average vehicle on a Nigerian road is 16 years old; this is well beyond its intended lifespan and far older than fleets in comparable economies. This is not a marginal challenge; it is a structural feature of an automotive ecosystem built almost entirely on imported used vehicles, minimal domestic production, and the near-total absence of a coordinated end-of-life management system. These data tell stories about Nigerian's road that we can no longer ignore:

a) ₦4.31 trillion spent on passenger car imports over three years (2023–2025)
b) 85% + of all vehicle imports are used ("Tokunbo") vehicles
c) 16 years average age of vehicles on Nigerian roads
d) ₦150 billion in annual economic value currently uncaptured from end-of-life vehicles
e) 40,000 projected jobs from a formalized ELV ecosystem

In the absence of structured frameworks, Nigeria's end-of-life vehicle (ELV) management is dominated by informal dismantling yards, roadside mechanics, and scrap traders operating without environmental safeguards. Open burning of tyres, plastics, and wiring releases dioxins, heavy metals, and particulates into the air. Leaking fluids contaminate soil and groundwater. Communities near informal recycling sites bear documented rates of chronic respiratory illness, skin disease, and increased cancer risk, with associated healthcare costs estimated at over ₦20 billion annually.

Meanwhile, the economic value embedded in those same vehicles (*recoverable steel, aluminum, copper, plastics, and reusable components*) is either lost or extracted at a fraction of its potential worth. Over 85% of an end-of-life vehicle's components can be recovered for reuse or recycling. Nigeria is currently capturing very little of that.
Nigeria's 2026 End-of-Life Vehicle Policy, driven by the National Automotive Design and Development Council (NADDC) and validated by the Federal Ministry of Justice in early 2024, represents the most significant structural intervention in Nigeria's automotive waste sector to date. It introduces four core instruments:

1. **Mandatory Vehicle Recycling Fee**: A levy collected at the point of vehicle registration for all imported and locally assembled vehicles, creating a dedicated funding stream for end-of-life management. Projections indicate this mechanism could unlock over ₦150 billion annually through recycling, parts recovery, and associated value chains.

2. **Pre-Export Certification**: All imported used vehicles must undergo inspection and certification in their country of origin before shipment, with certification costs borne by foreign exporters. This aims to prevent Nigeria from functioning as a destination for vehicles that are already at end-of-life upon arrival.

3. **Standards for Dismantling and Authorized Treatment Facilities (ATFs):** Only licensed, certified facilities will be permitted to handle ELVs, with clear technical and environmental standards governing material recovery. The target is to recycle over 80,000 tons of ferrous and non-ferrous metals annually.

4. **Extended Producer Responsibility (EPR):** Importers, manufacturers, and vehicle owners share accountability across the vehicle lifecycle, distributing the financial and operational burden of end-of-life management across the value chain.

The policy is closely aligned with the National Automotive Industry Development Plan (NAIDP) and Nigeria's National Energy Transition Plan. By April 2026, NADDC had completed key sensitization campaigns in Lagos, Abuja, and Kano, launched its Service Charter, and commissioned new automotive training centres. Full nationwide rollout is scheduled progressively through 2026.

A comparative review of ELV systems across the EU, Japan, India, Kenya, Cameroon, and South Africa surfaces one finding that is more instructive than any success story: in emerging economies, formalization without inclusion does not eliminate informality. It institutionalizes fragmentation. The EU's fully integrated circular economy model and Japan's precision-driven prepaid recycling system represent genuine global benchmarks. The EU requires automakers to embed 15–25% recycled plastics in new vehicles, maintains 85% reuse and recycling targets, and has introduced digital vehicle passports to track material flows across the entire lifecycle. Japan funds end-of-life management through upfront recycling fees, maintains near-complete metal recovery rates, and achieves this through tight coordination between government, manufacturers, and licensed recyclers. Both systems work. Neither is transferable to Nigeria without fundamental redesign.

The collective lesson is unambiguous: informality is not a marginal issue in Nigeria's ELV system. It is the system. Any policy that attempts to displace it rather than upgrade it

will produce the same outcome seen in India, Kenya, and South Africa, which is a formal structure on paper, an informal one in practice.
The most analytically underappreciated implementation risk in Nigeria's 2026 ELV Policy is not enforcement capacity or infrastructure gaps, though both are significant. It is the structural consequence of the 12-year vehicle import age threshold on Nigeria's $5–6 billion informal spare-parts economy.

Nigeria's aftermarket ecosystem (*centered on hubs like Ladipo Market (Lagos), Apo Mechanic Village (Abuja), and Panteka (Kaduna)*) is not primarily fed by OEM parts distributors. It is fed by cannibalisation: reusable engines, gearboxes, ECUs, body panels, and suspension components harvested from dismantled, accidented, or end-of-life vehicles. The majority of vehicles currently operating in Nigeria are pre-2016 models. Their owners depend on a steady, affordable supply of second-hand components extracted from this very import stream.

A restriction that admits only vehicles under 12 (or 10) years old will, within a 3–5 year horizon, create a parts vacuum for the legacy fleet. Those vehicles will not disappear simply because imports are restricted. They will continue to operate but without a viable supply of compatible replacement parts.

1. **Premature abandonment**: Owners unable to source parts may abandon otherwise functional vehicles, paradoxically worsening the very ELV dumping problem the policy aims to solve.

2. **Counterfeit surge**: Historical evidence from Ghana and Kenya shows that age-based import restrictions, when not paired with a domestic parts strategy, trigger sharp increases in substandard counterfeit components entering through unregulated channels.

3. Regressive cost burden: Lower- and middle-income vehicle owners, who depend most heavily on second-hand parts markets, will face the steepest price escalations, directly undermining the policy's social legitimacy.

Addressing this requires three parallel measures: a transitional licensing window for certified domestic dismantlers to harvest parts under controlled conditions; a certified remanufactured-parts framework ("NADDC-Reman") under SON; and a 5-year

liberalized import window for spare parts, decoupled from the whole-vehicle age cap. Without these, the age limit rule creates a supply shock rather than a system upgrade.

The policy's most significant asset is its economic framing, by tying vehicle recycling to industrial value creation such as secondary raw materials, green jobs, backward linkages into steel and aluminium, it builds a constituency beyond environmentalists. The mandatory recycling fee creates a dedicated funding stream that does not depend on annual budget allocations. The most critical gap is the mismatch between fee collection and service delivery. With very few ATFs operational and vehicle registration systems still incomplete, there is a genuine risk of collecting a levy without providing the infrastructure to justify it. That is the fastest route to public resistance and policy delegitimisation.

The greatest untapped potential lies in formally integrating the informal sector and not displacing it. Nigeria's spare-parts ecosystem already performs core circular economy functions: reuse, refurbishment, and material recovery. Structuring that through cooperatives, certification pathways, and remanufacturing incentives could create thousands of green jobs while supplying secondary raw materials to local industries. The policy also positions Nigeria ahead of the electric vehicle transition, with ELV infrastructure forming the foundation for future battery recovery and critical mineral recycling. Beyond the spare-parts continuity problem, the most systemic threat is enforcement outpacing infrastructure. Aggressive restriction of ELV flows without sufficient formal alternatives will push activity deeper into informality, not out of it.

Global used-vehicle export rules are also tightening, which could change Nigeria's import dynamics faster than current policy design anticipates.
Three things that will determine the success of the ELV policy is:

1. **Treat the informal sector as a foundation, not a problem:** Nigeria's automotive recycling economy is already functioning. Mechanics, dismantlers, scrap traders, and spare-parts markets collectively sustain mobility for millions of Nigerians and perform the core circular economy functions of reuse, refurbishment, and material recovery although informally, unsafely, and below their economic potential. The risk in any formalization effort is not that it moves too boldly against informality, but that it inadvertently destroys the value informality already creates. Tiered licensing, cooperative formation, certification pathways, and micro-financing are not softer alternatives to reform; they are the mechanism

through which reform actually works.

2. **Sequence infrastructure before enforcement, not after:** The EU and Japan demonstrate what is achievable; they do not demonstrate what Nigeria should do in 2026. A phased approach beginning with pilot hubs in Lagos, Abuja, Kano, and Aba, followed by evidence-based national expansion is not a compromise of the policy's vision. It is the most credible path to achieving it. Collecting a recycling fee before the infrastructure exists to justify it is the surest way to erode public trust and hand opponents a legitimate grievance. The sequencing question is not whether to be ambitious, but in what order to build.

3. **Build a Spare-Parts Continuity Plan alongside the age-limit rule**: The age-limit threshold is environmentally defensible, but it carries a consequence that the policy debate has so far underweighted: the supply of affordable parts for Nigeria's legacy fleet depends on the very import stream it restricts. Without transitional dismantler licensing, a certified remanufactured-parts framework, and a decoupled spare-parts import window, the age-limit rule risks causing premature vehicle abandonment, a counterfeit parts surge, and regressive cost burdens, all of which would directly contradict the policy's road safety and environmental objectives.

Nigeria has a rare opportunity in the lifecycle of any regulatory intervention to build a system that serves its economy and environment simultaneously. Whether 2026 becomes a genuine inflection point or simply another well-intentioned policy milestone will depend on the quality of execution, the honesty of stakeholder engagement, and the political will to sequence reform in line with Nigeria's realities rather than other countries' achievements.

SECTION 1: INTRODUCTION

Nigeria's roads are increasingly dominated by ageing vehicles, many operating beyond their intended lifespan. With the average fleet now estimated at about 16 years[1], the implications become obvious with each passing day: heightened safety risks, lower fuel efficiency, and mounting environmental pressure. This trend is largely sustained by the continued inflow of used vehicle imports, which remain the most accessible option for many Nigerians. According to the National Bureau of Statistics (NBS), Nigeria's registered vehicle population stood at approximately 11.8 million as of the most recent comprehensive count, translating to roughly one vehicle per 16 Nigerians, an indicator of both unmet mobility demand and the structural reliance on the secondary vehicle market.[2]

In terms of inflow, more than 60,000 motor vehicles are imported into Nigeria annually, of which over 85% are used (locally referred to as "Tokunbo"), sourced predominantly from the United States, Europe, and Asia.[3] Industry estimates place the broader market size, accounting for both new and used cars, at approximately 1.15 million units per year, with Nigeria spending an estimated US$7–8 billion annually on vehicle imports, roughly 80% of which goes toward used cars, according to the International Trade Administration.[4]

In monetary terms, the scale of dependence is even more striking. Passenger car imports reached ₦1.58 trillion in 2025,[5] the highest in a three-year period totalling over ₦4.31 trillion, and reflecting a strong rebound from ₦1.47 trillion in 2023 and ₦1.26 trillion in 2024.[6] In Q1 2025 alone, Nigeria imported ₦93.51 billion worth of used cars from the United States, far ahead of South Africa (₦25.84 billion) and

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[1] Africon. (n.d.). Slide of the month (SOTM) July: The age of vehicles in operation in Nigeria. Retrieved from https://africon.de/en/slide-of-the-month-sotm-july-the-age-of-vehicles-in-operation-in-nigeria/

[2] NBS. (2018). Reports. National Bureau of Statistics. https://www.nigerianstat.gov.ng/elibrary/read/903/

[3] Agbo, C. (2019, June). A CRITICAL EVALUATION OF MOTOR VEHICLE MANUFACTURING IN NIGERIA. https://www.researchgate.net/figure/ehicles-import-statistics-in-Nigeria-Data-source-Manufacturers-OMI-India_fig3_268292013

[4] International Trade Administration. (2021b, October 13). Country commercial guides. International Trade Administration Trade.gov. https://www.trade.gov/country-commercial-guides/nigeria-automotive-sector

[5] Tunji, S. (2026, March 24). Nigeria's car imports total n4.3tn Over three years. Punch Newspapers. https://punchng.com/car-imports-hit-n4-3tn-in-three-years/

[6] Tunji, T. (2026, March 25). Nigerians spend N1.58 trillion importing foreign cars in 2025. Nairametrics. https://nairametrics.com/2026/03/25/nigerians-spend-n1-58-trillion-importing-foreign-cars-in-2025/

the United Arab Emirates, while Q3 2025 recorded ₦527 billion in passenger car imports, with used vehicles accounting for ₦234.7 billion (₦184 billion of which originated from the U.S.).[7] These figures underscore both the scale of demand and the country's deep dependence on external supply amid limited domestic production capacity, where local assembly output stood at only about 100 units (in thousands) in 2024, against import volumes orders of magnitude higher according to the International Trade Administration.[8] However, this reliance is not without context, as used vehicles play a critical role in bridging affordability gaps and meeting immediate mobility needs across income segments.

This dependence on imports, coupled with the absence of a coherent end-of-life vehicle management system, has left Nigeria's automotive waste landscape largely unstructured. What exists today is a patchwork of informal dismantling yards and scrap operations, many relying on basic, low-efficiency methods. In cities like Lagos, practices such as open burning of vehicle parts release harmful substances such as heavy metals, residual oils, and dioxins into the air, while seepage contaminates soil and water systems. These practices intensifies broader urban air quality issues[9], where road transport already accounts for a substantial share of PM2.5 concentrations. At the same time, vehicles that are no longer in use, often end up abandoned along roadsides and within communities, adding to urban pollution and safety concerns. More critically, the current system fails to capture the underlying value hidden in end-of-life vehicles[10], reusable components and recoverable materials are either lost or extracted inefficiently.

Globally, end-of-life vehicles (ELVs) are no longer seen as mere waste streams, but as valuable entry points into a circular economy, where materials are recovered, reused, and reintegrated into production systems. In Europe, where

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[7] Rapheal. (2026, March 25). NBS: Nigerians spent N1.58trn on vehicle imports in 2025. The Sun Nigeria. https://thesun.ng/nbs-nigerians-spent-n1-58trn-on-vehicle-imports-in-2025/

[8] International Trade Administration. (2021, October 13). Country commercial guides. International Trade Administration | Trade.gov. https://www.trade.gov/country-commercial-guides/nigeria-automotive-sector

[9] Clean Air Fund. (n.d.). Lagos: Clean air in Africa's cities. https://www.cleanairfund.org/clean-air-africas-cities/lagos/

[10] Abogunrin-Olafisoye, O. B., & Adeyi, O. (2025). Environmental and health impacts of unsustainable waste electrical and electronic equipment recycling practices in Nigeria's informal sector. Discover Chemistry. https://doi.org/10.1007/s44371-024-00075-x

more than six million vehicles reach end-of-life each year,[11] regulatory frameworks have steadily shifted toward maximising value recovery, tightening environmental safeguards, and improving lifecycle efficiency across the automotive chain. In contrast, many low- and middle-income countries, including Nigeria, operate within far less coordinated systems. Regulatory gaps have not only limited effective end-of-life management but have also made these markets primary destinations for ageing, higher-emission vehicles. Between 2015 and 2018, over 14 million used light-duty vehicles were exported globally, with more than half entering African markets[12], effectively shifting a significant share of environmental and disposal burdens onto importing countries.

With these challenges in mind, the National Automotive Design and Development Council (NADDC) initiated the Nigeria End-of-life Vehicle (ELV) policy[13] which will roll out and be fully operational in 2026, aimed at bringing structure to a largely informal and inefficient system. At its core, the policy introduces mandatory recycling frameworks, pre-export certification requirements for used vehicles, and minimum standards for dismantling and material recovery. With key regulatory approvals secured by early 2024, implementation is expected to address both environmental risks and longstanding gaps in the automotive value chain, while reinforcing local assembly efforts in line with the NADDC Service Charter.[14] Projections indicate that a more organised ELV ecosystem could unlock up to ₦150 billion annually[15] through recycling, parts recovery, and associated industries.

Nigeria's 2026 ELV Policy opens a real policy window to shift automotive waste from a mounting environmental challenge into a structured source of economic value. But that shift will only hold if the design of the system reflects Nigeria as

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[11] European Commission. (n.d.). End-of-life vehicles. https://environment.ec.europa.eu/topics/waste-and-recycling/end-life-vehicles_en

[12] United Nations Environment Programme. (2020, October 26). New UN report details environmental impacts of export of used vehicles to developing world. Retrieved from https://www.unep.org/news-and-stories/press-release/new-un-report-details-environmental-impacts-export-used-vehicles

[13] LEADERSHIP. (2025, December 23). Nigeria activates end-of-life policy to curb unsafe vehicle imports. Retrieved from https://leadership.ng/nigeria-activates-end-of-life-policy-to-curb-unsafe-vehicle-imports/

[14] National Automotive Design and Development Council. (2026, February 6). NADDC launches service charter. Retrieved from https://naddc.gov.ng/naddc-launches-service-charter/

[15] Authority News. (2025, December 22). End-of-life vehicle policy to unlock N150bn yearly into Nigeria's economy — NADDC. Retrieved from https://authorityngr.com/2025/12/22/end-of-life-vehicle-policy-to-unlock-n150bn-yearly-into-nigerias-economy-naddc/

it is, not as it is assumed to be. In practical terms, that means balancing ambition with realism: recognising the scale of the informal sector, sequencing infrastructure development rather than over-engineering it from the start, and embedding governance structures that can adapt as the system evolves. At its core, this study is concerned with one simple but often overlooked reality, which is, the informal sector already runs much of the ELV value chain in practice. Any attempt to formalise the system without working with that reality risks failure. The focus here is therefore on how that existing ingenuity can be strengthened, structured, and aligned with national objectives, rather than displaced.

Figure 1: *Nigeria ELV Policy at a glance*

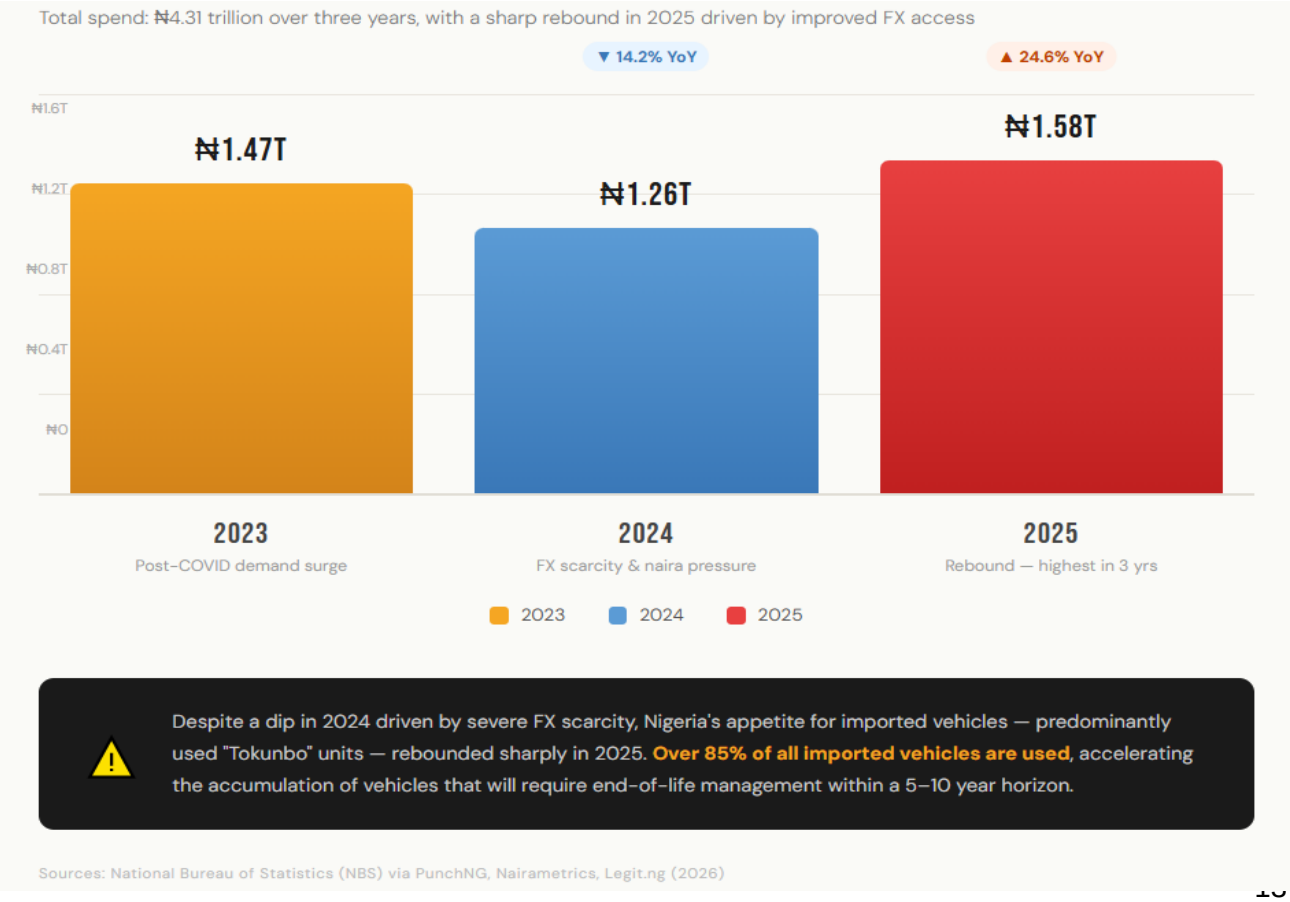
SECTION 2: THE NIGERIAN AUTOMOTIVE WASTE CHALLENGE

Nigeria's automotive landscape is still largely shaped by imported used vehicles, many of which arrive well into their lifespan. As a result, the national fleet is getting older, while what happens to vehicles at the end of their life remains mostly informal and uncoordinated. This combination is steadily building up an automotive waste problem, one that is no longer just environmental, but also economic, public health, and social in its impact.

2.1 Vehicle Fleet Characteristics and Import Dependency

The average age of vehicles on Nigerian roads is estimated at about 16 years[16], which is significantly higher than what is seen in many comparable economies. This ageing fleet is sustained by heavy reliance on imported used passenger cars, driven by limited domestic manufacturing capacity and persistent demand for affordable mobility.

Table 2: *Nigeria Passengers Car Import Values (2023 - 2025)*



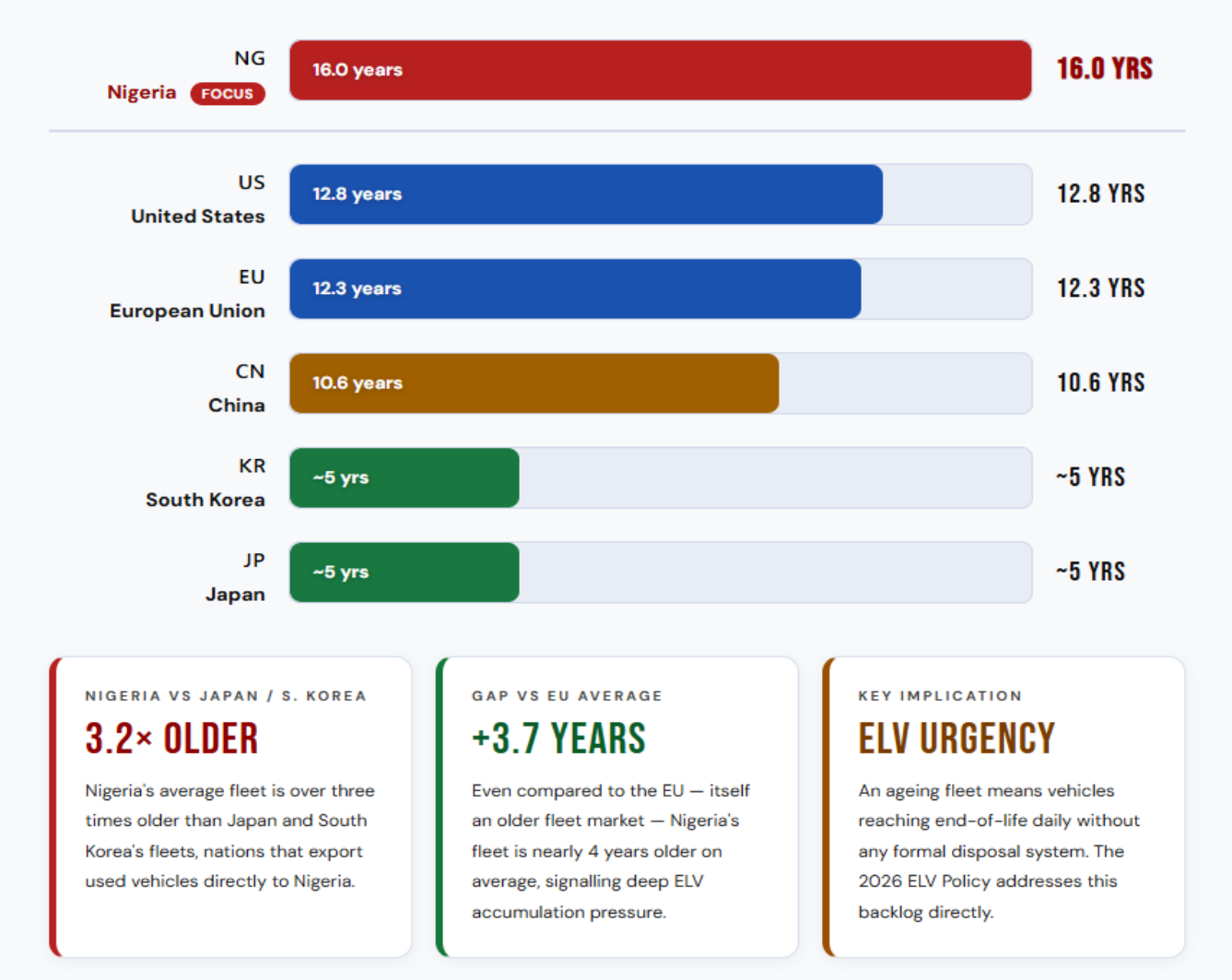
Imports remain overwhelmingly dominated by used vehicles, particularly high-engine-capacity units from the United States (a major source) and re-exports via the UAE. The 4–7-year age cohort continues to dominate the used car market, while enforcement of the 12-year age limit on imports remains inconsistent. Local vehicle assembly (e.g., by Innoson and other players) remains modest relative to demand, meaning the market continues to depend heavily on imports for both private and commercial mobility needs.

2.2 Policy implications

This import-heavy, used-vehicle-dominated pattern has direct consequences for the 2026 ELV Policy.

1. It accelerates the accumulation of end-of-life vehicles, as many imported units are already near or beyond the 12-year threshold upon arrival.
2. The volatility and price sensitivity highlighted by these trends underscore the risk that additional costs from the proposed recycling fee or pre-export certification could disproportionately burden consumers if not carefully designed.
3. The dominance of high-mileage used imports raises the urgency of preventing Nigeria from becoming a destination for unroadworthy vehicles. Without effective intervention, continued high import volumes will intensify environmental burdens, road safety risks, and lost material recovery opportunities.

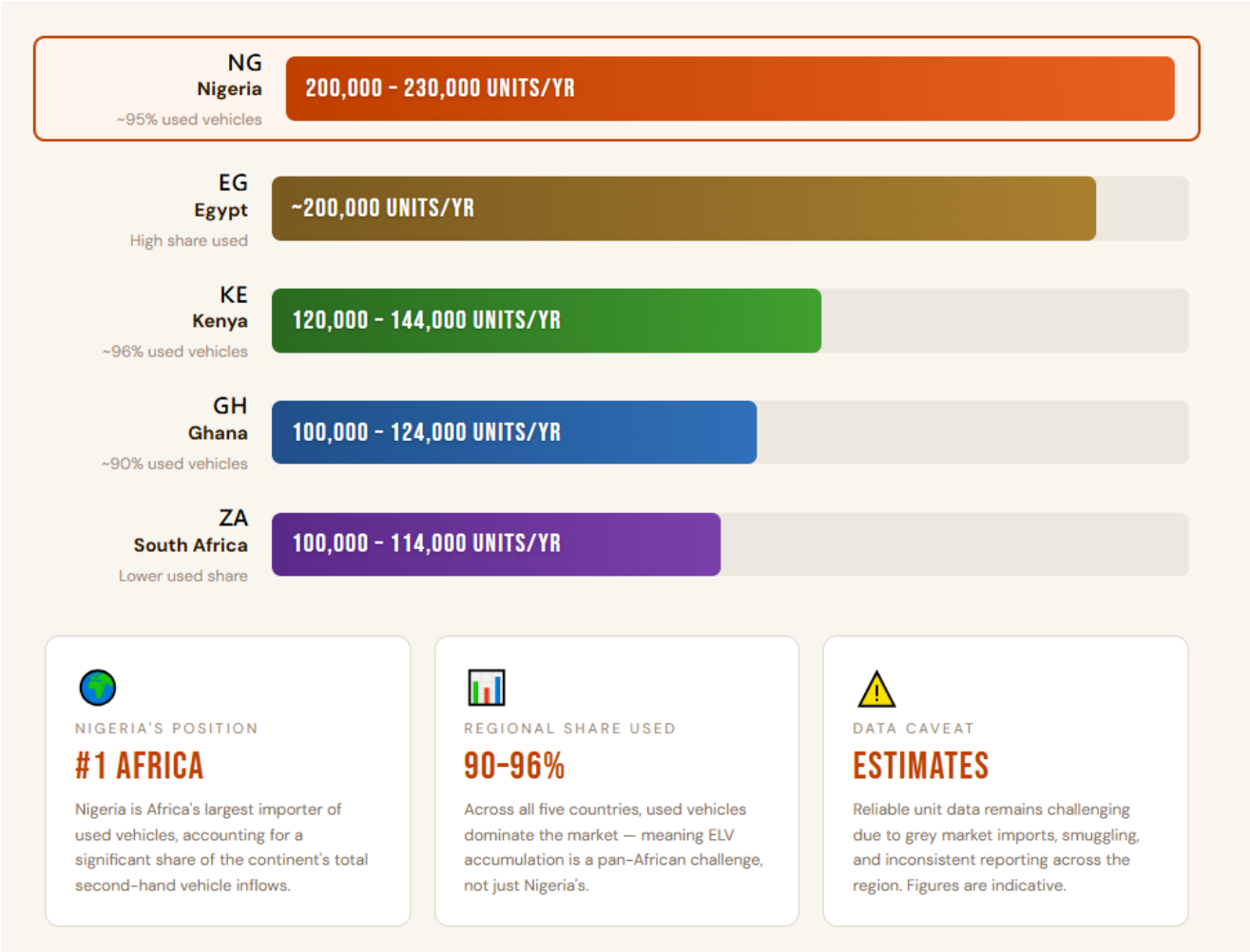
Table 3: *Average Vehicle Fleet Age (Nigeria vs. Selected Economies - 2025)*



2.3 Comparative Overview of Vehicle Import Volumes

While Nigeria records one of the highest values of passenger car imports in Africa, reliable unit (volume) data remains challenging due to significant grey market imports, smuggling, and inconsistent reporting. Nevertheless, available estimates position Nigeria as Africa's largest importer of used vehicles.

Figure 4: *Annual Used Vehicle Imports – Nigeria vs Selected African Economies (Recent Estimates)*[17]



2.4 Environmental and Health Impacts

The informal dismantling and disposal of end-of-life vehicles (ELVs) generate acute and long-term environmental and public health risks, especially in densely populated urban centres like Lagos. Informal scrapyards and mechanic villages frequently employ rudimentary and hazardous methods, including open burning of vehicle wiring, plastics, tyres, and rubber components[18]. These practices

[17] **Figures are approximate and derived from various industry and media reports (2022–2025). Precise official statistics remain limited due to informal trade channels and available data.**

[18] Abogunrin-Olafisoye, O. B., & Adeyi, O. (2025). Environmental and health impacts of unsustainable waste electrical and electronic equipment recycling practices in Nigeria's informal sector. Discover Chemistry, 2(1), 4-. https://doi.org/10.1007/s44371-024-00075-x

release toxic emissions such as dioxins, furans, polycyclic aromatic hydrocarbons (PAHs), and heavy metals (lead, cadmium, mercury) into the air, soil, and groundwater. Leaking engine oils, brake fluids, and coolants further contaminate soil and water sources. In Lagos, abandoned vehicles litter roadsides, neighbourhoods, and unauthorized spaces, creating visual blight, obstructing drainage, and serving as breeding sites for mosquitoes while contributing to urban flooding. Open burning and crude dismantling exacerbate the city's severe air pollution problems. Studies on informal waste recycling (including vehicle components) in Nigeria document serious health consequences for workers and nearby residents, including respiratory illnesses (asthma, chronic bronchitis, lung infections), skin diseases, eye irritation, fatigue, increased cancer risks, and even spontaneous abortions among women living or working near such sites[19]. Workers often operate without personal protective equipment (PPE), exposing them to cuts, infections, chemical burns, and long-term toxic accumulation.

Communities near informal recycling and dumpsites bear high rates of chronic diseases, with associated healthcare costs estimated in related waste studies at over ₦20 billion annually. Without formal intervention, these environmental and health burdens will intensify as the vehicle fleet continues to age and import volumes rebound[20].

2.5 Economic Dimension

The informal sector (*comprising roadside mechanics, scrap dealers, scavengers, and small-scale dismantlers*) dominates ELV management in Nigeria. While it provides critical livelihoods for thousands of low-income individuals and youth, it operates at low efficiency, capturing only a small fraction of the potential economic value embedded in end-of-life vehicles.

Over 85% of components in many ELVs remain reusable or recyclable (steel, aluminium, plastics, copper wiring, and rubber), yet crude methods result in significant material loss and value destruction. This translates into foregone opportunities for domestic industries: secondary steel and aluminum could

[19]Amos, K. (2025, January 4). Public health, environment suffer amid thriving informal recycling system. The Guardian Nigeria News - Nigeria and World News. https://guardian.ng/features/health/public-health-environment-suffer-amid-thriving-informal-recycling-system/

[20]Abogunrin-Olafisoye, O. B., & Adeyi, O. (2025b). Environmental and health impacts of unsustainable waste electrical and electronic equipment recycling practices in Nigeria's informal sector. *Discover Chemistry*, *2*(1). https://doi.org/10.1007/s44371-024-00075-x

reduce raw material imports and support local manufacturing, while recovered plastics could feed packaging and construction sectors. Stakeholders estimate that organized recycling of automotive waste could generate over ₦150 billion annually (*with some projections ranging higher when including remanufacturing and related value chains*)[21].

The informal sector's ingenuity in repair, refurbishment, and parts reuse demonstrates strong frugal innovation and circular practices at the grassroots level. However, the absence of standards, infrastructure, and supportive policy frameworks limits scalability, value capture, and worker protection.

2.6 Data Gaps and Why 2026 Is a Critical Intervention Point

Reliable and available national data on the exact size of Nigeria's vehicle fleet, annual ELV generation rates, collection efficiencies, and material recovery volumes remain fragmented or outdated. This data deficiency complicates targeted planning and monitoring. The convergence of an ageing, import-dependent fleet, escalating environmental and health costs, substantial lost economic value, and the planned full activation of the ELV Policy creates both urgency and a unique window of opportunity. Without structured, inclusive intervention, Nigeria risks perpetuating pollution hotspots, road safety risks from unroadworthy vehicles, continued foreign exchange drain, and missed circular economy gains.

This challenge extends beyond waste management to interconnected failures in import regulation, infrastructure provision, economic incentives, enforcement capacity, and stakeholder inclusion. The 2026 ELV Policy rollout offers a strategic opportunity to shift from a linear import-use-abandon model toward a more regenerative automotive economy that harnesses both formal and informal sector strengths.

[21] Bouchaud, J., & Brinley, S. (n.d.). Average age of vehicles in the US hits 12.8 Years in 2025. *S&P Automotive Insights*. Retrieved May 13, 2026, from https://www.spglobal.com/automotive-insights/en/blogs/2025/05/average-age-of-vehicle-in-us

2.7 The Spare-Parts Dependency Loop

One of the most economically significant dimensions of Nigeria's End-of-Life Vehicle (ELV) ecosystem is its role in sustaining the country's vast informal spare-parts economy.[22] In practice, many vehicles classified as "end-of-life" do not immediately exit the mobility system. Instead, they are systematically dismantled and cannibalised for reusable components, which are then

[22]Nigeria's autoNADDC. (2026, January 22). National automotive design and development council - NADDC. *Facebook*. https://web.facebook.com/naddcouncil/posts/old-cars-no-be-wasteunder-nigerias-end-of-life-vehicle-elv-recycling-regulation-/1194178729554961/?_rdc=1&_rdr#

redistributed through extensive informal aftermarket networks across the country.[23]

This process forms what can be described as a "spare-parts dependency loop", a circular system in which ELVs continuously supply affordable components that keep other ageing vehicles operational. Engines, gearboxes, alternators, brake systems, tyres, electronics, body panels, and suspension components are extracted, repaired where necessary, and resold through mechanic clusters and spare-parts markets such as Ladipo in Lagos, Apo Mechanic Village in Abuja, and industrial hubs in Aba and Kano.

Nigeria's automotive spare market is estimated at approximately $5 - 6 billion annually,[24] with second-hand ("tokunbo") components accounting for roughly 20 - 30% of market activity. Much of this originates locally from dismantled ELVs, reinforcing the sector's dependence on vehicle cannibalisation as a source of affordable replacement parts. In many cases, dismantled components retain greater market value than the residual worth of the vehicle itself, encouraging owners and informal operators to prioritise disassembly over disposal.

The preference for salvaged original equipment manufacturer (OEM) components also reflects broader market realities. Many mechanics and vehicle owners favour used original parts recovered from older imported vehicles over low-cost aftermarket imports, which are often perceived as less durable and poorly suited to Nigeria's ageing vehicle fleet, particularly dominant brands such as Toyota and Honda. Consequently, ELVs are rarely regarded as waste in the conventional sense; instead, they function as repositories of recoverable economic assets within a deeply embedded informal circular economy.

The dependency loop is reinforced by broader structural realities within Nigeria's automotive market. Due to:

- High costs of new vehicles
- Heavy dependence on imported used vehicles

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[23]Numfor, S. A., Omosa, G. B., Zhang, Z., & Matsubae, K. (2021). A review of challenges and opportunities for end-of-life vehicle recycling in developing countries and emerging economies: A SWOT analysis. Sustainability, 13(9), 4918. https://doi.org/10.3390/su13094918

[24]Onyema, J. (2026, March 14). Nigeria's $5bn spare parts market opens opportunity for investors. Businessday NG. https://businessday.ng/transport/article/nigerias-5bn-spare-parts-market-opens-opportunity-for-investors/

- Currency instability and import pressures
- Limited access to affordable original manufacturer parts

Many vehicle owners rely heavily on second-hand or refurbished components sourced from dismantled ELVs. For low- and middle-income households, these informal spare-parts markets are often the only economically viable means of maintaining mobility.[25]

This dynamic has created a highly adaptive and economically resilient informal ecosystem. Mechanics, dismantlers, traders, and transport operators are interconnected within a circular value chain that maximises material use and extends vehicle lifespans far beyond original manufacturer expectations. In effect, Nigeria's informal ELV economy already performs many core circular economy functions including reuse, remanufacturing, and material recovery without formally being recognised as such.

However, this dependency loop also creates significant policy complexity. Any attempt to rapidly formalise or restrict ELV dismantling activities without providing affordable alternatives could disrupt the supply of low-cost spare parts, increase vehicle maintenance costs, and indirectly affect transportation affordability across the economy. At the same time, the system presents environmental and safety concerns. Many recovered components are processed without quality control standards, environmental safeguards, or proper handling procedures for hazardous materials. Studies conducted in Nigerian spare-parts markets and mechanic clusters have identified environmental risks including soil contamination from automotive waste, open burning of vehicle materials, and unsafe disposal of oils and hazardous substances.[26]

The policy challenge, therefore, is not to eliminate the spare-parts dependency loop, but to upgrade it. A successful ELV framework should aim to:

- Improve standards for recovered parts

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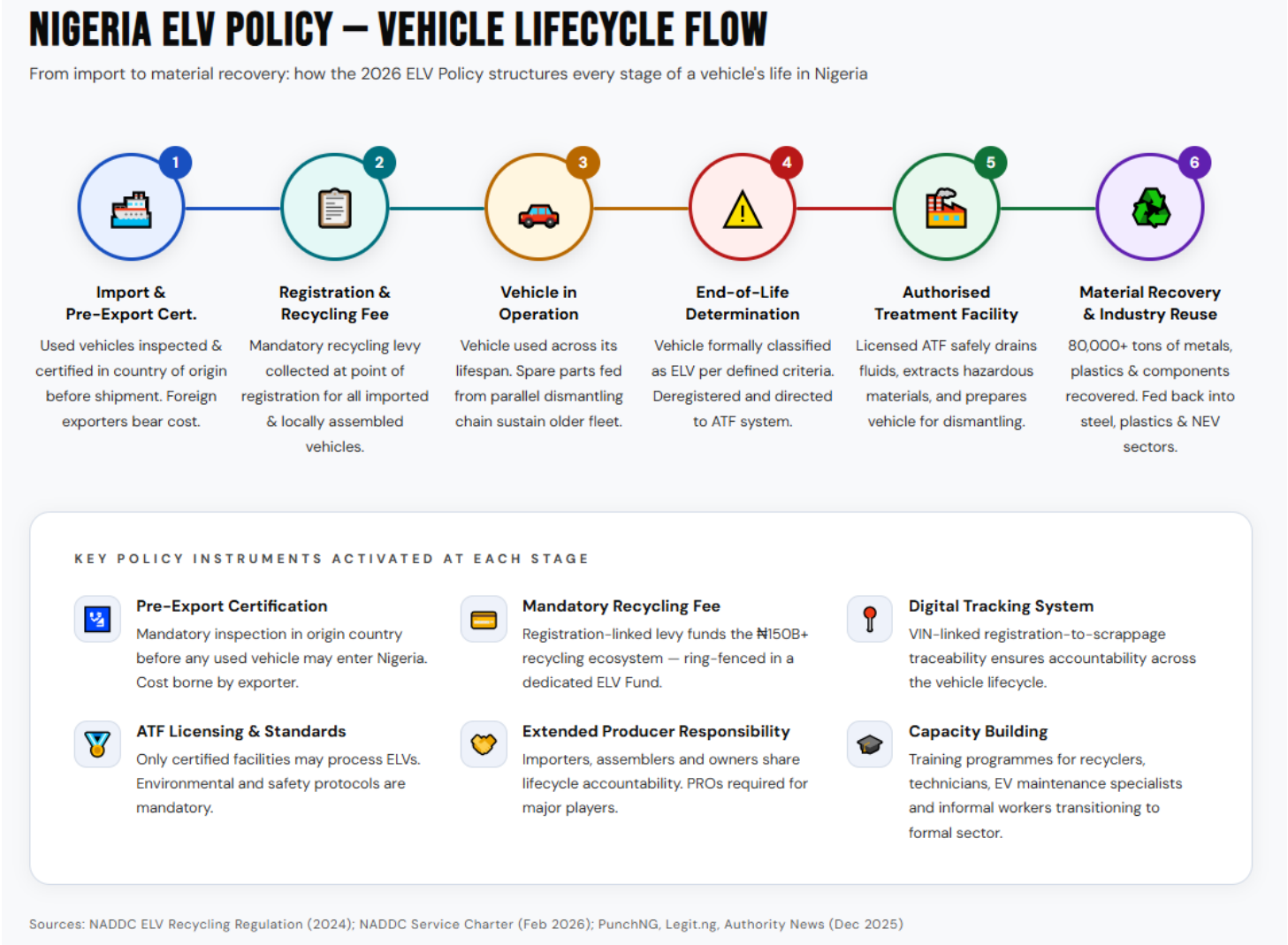
[25]KATARIA, M. (2022, October 31). 20 amazing facts about scrap car recycling. MKP Kataria. https://mkpkataria.com/20-amazing-facts-about-scrap-car-recycling/

[26]Moses, O., & Archibong, U. D. (2022). Assessment of Spare part Sourcing and Recycling Activities Impact on the Availability of Lead, Cadmium and Total Petroleum Hydrocarbon in Evbareke Spare Parts Market Soil in Benin City, Nigeria. Ethiopian Journal of Science and Sustainable Development, 9(2), 37–45. https://doi.org/10.20372/ejssdastu:v9.i2.2022.434

- Introduce certification pathways for dismantlers and traders
- Encourage safer dismantling practices
- Integrate informal spare-parts markets into formal circular economy structures

SECTION 3: OVERVIEW OF NIGERIA'S 2026 ELV POLICY

The 2026 End-of-Life Vehicle (ELV) Policy, driven by the National Automotive Design and Development Council (NADDC), represents a bold and structured response by the Nigerian government to address the long-standing challenges of automotive waste, road safety, environmental pollution, and economic leakage. The policy shifts the sector from a largely unregulated, informal system toward a structured, circular economy.



3.1 Historical Background and Policy Evolution.

The journey toward a formal ELV framework began several years ago under the leadership of NADDC. The Council, in collaboration with the Recycling and Economic Development Initiative (REDIN) and the Federal Ministry of Justice, drafted the ELV Recycling Regulation.[27] A key milestone was achieved in February 2024 when the regulation received formal validation and approval from the Federal Ministry of Justice, laying the legal foundation for Nigeria's vehicle recycling industry.

The regulation was officially unveiled and launched in March 2025 by the Honourable Minister of State for Industry, Senator John Owan Enoh, during a stakeholders' engagement and ministerial press conference in Lagos. Sensitisation programmes followed in major cities, including Abuja in July 2025 and Kano in August 2025, to build stakeholder awareness and collaboration.[28]

NADDC, under Director-General Mr. Oluwemimo Joseph Osanipin, has consistently positioned the ELV policy as a critical enabler of the broader National Automotive Industry Development Plan (NAIDP). The policy draws inspiration from successful models in the European Union, Japan, and select African countries, while being adapted to Nigeria's unique context of high used-vehicle imports and a large informal recycling sector. By late 2025, the focus shifted toward full nationwide activation, with 2026 designated as the year of implementation.[29]

3.2 Core Objectives

The 2026 ELV Policy is designed with multifaceted and ambitious objectives:

a. Improve automotive waste management by shifting from unregulated informal practices to structured, environmentally sound dismantling and recycling processes.

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[27] NADDC. (2019, November). National automotive design and development council - NADDC. *Facebook*. https://www.facebook.com/naddcouncil/posts/two-day-retreat-for-naddc-harmonisation-committee-on-the-regulation-of-end-of-li/2498140083617371/

[28] Motoring World International. (2025, August 25). NADDC sensitizes nigerians on end-of-life vehicle regulations, pushes automotive recycling agenda -. https://motoringworldng.com/naddc-sensitizes-nigerians-on-end-of-life-vehicle-regulations-pushes-automotive-recycling-agenda/

[29] News, L. (2025, December 24). Nigeria to fully implement end-of-life vehicle policy in 2026. LEADERSHIP Newspapers. https://leadership.ng/nigeria-to-fully-implement-end-of-life-vehicle-policy-in-2026/

b. Curb unsafe vehicle imports, particularly "tokunbo" vehicles that often arrive near or at the end of their useful life, thereby enhancing road safety.
c. Reduce environmental pollution arising from leaking fluids, open burning of tyres and plastics, and improper disposal of heavy metals and hazardous automotive waste.
d. Create green jobs with projections of up to 40,000 direct and indirect jobs in dismantling, refurbishing, logistics, component recovery, and skills training.[30]
e. Boost local industry and the circular economy by recovering valuable materials (steel, aluminium, copper, plastics, and rubber) to serve as feedstock for local manufacturing, spare parts production, and emerging new energy vehicle (NEV) component industries.

3.3 Key instruments

The policy rests on several powerful instruments scheduled for full activation in 2026 (with some reports targeting intensified action from Q2 2026):

a. **Mandatory Vehicle Recycling Fee:** A modest levy will be collected at the point of vehicle registration for both newly imported and locally assembled vehicles.[31] This fee will fund the future environmentally responsible dismantling, recycling, and disposal of the vehicle at end-of-life. NADDC projects that the recycling ecosystem enabled by this mechanism could unlock over ₦150 billion annually into the Nigerian economy through revenue from recycling activities, parts recovery, and associated value chains.[32]
b. **Mandatory Pre-Export Certification for Used Vehicles:** All imported used vehicles ("tokunbo") must undergo inspection and certification in the country of origin to confirm they meet Nigerian safety, environmental, and roadworthiness standards before shipment from 2026. The cost of

[30]Nwafor, A. (2025, March 5). NADDC targets 40,000 jobs with vehicle regulation. Punch Newspapers. https://punchng.com/naddc-targets-40000-jobs-with-vehicle-regulation/
[31]Aina, D. (2025, December 22). Nigeria to introduce mandatory vehicle recycling fee in 2026. Punch Newspapers. https://punchng.com/fg-to-introduce-mandatory-vehicle-recycling-fee-from-2026/
[32]Khanoba, F. (2025, December 22). End-of-life vehicle policy to unlock N150bn yearly into Nigeria's economy — NADDC. THE AUTHORITY NEWS. https://authorityngr.com/2025/12/22/end-of-life-vehicle-policy-to-unlock-n150bn-yearly-into-nigerias-economy-naddc/

certification will be borne by foreign exporters, not Nigerian importers.[33] This measure aims to prevent the dumping of substandard and end-of-life vehicles into the Nigerian market.

c. **Standards for Dismantling and Recycling:** The regulation establishes clear technical standards and environmental guidelines for vehicle dismantling and material recovery, targeting to recycle over 80,000 tons of ferrous and non-ferrous metals and reintroduce them into our automotive manufacturing sector and the industrial sector.[34] Industry research shows that over 85% of components from end-of-life vehicles, including engines, metals, plastics, and electronic parts, can be recovered for reuse or recycling.[35]
d. **Authorised Treatment Facilities (ATFs):** Only licensed and certified facilities will be permitted to handle ELVs, ensuring compliance with environmental and safety protocols.
e. **Extended Producer Responsibility (EPR):** Importers, manufacturers, and, to some extent, vehicle owners will share accountability across the vehicle lifecycle.
f. **Capacity-building Initiatives:** including training for regulators, recycling plant operators, and auto technicians in safe ELV handling, as well as parallel programmes in EV maintenance and CNG retrofitting are already underway.[36]

3.4 Policy Scope and linkages

The policy applies comprehensively to key stakeholders: vehicle importers, manufacturers, owners, dismantlers, recyclers, and authorised treatment facilities. It covers both passenger and commercial vehicles and addresses the full lifecycle, from importation/registration through usage to final decommissioning.

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[33]Oamen, S. (2025, December 22). Things to know about mandatory Vehicle Recycling Fee starting 2026. The Nation Newspaper. https://thenationonlineng.net/things-to-know-about-mandatory-vehicle-recycling-fee-starting-2026/

[34] Ibrahim, L. (2025, July 3). Nigeria set to implement end-of-life vehicle regulations. Voice of Nigeria. https://von.gov.ng/nigeria-set-to-implement-end-of-life-vehicle-regulations/

[35]Enengedi, V. (2025b, December 29). 12 key things to know as Nigeria's vehicle recycling fee takes effect in 2026. Legit.ng - Nigeria News. https://www.legit.ng/business-economy/industry/1690085-explained-12-crucial-facts-nigerias-mandatory-vehicle-recycling-fee-starting-2026/

[36]Enengedi, V. (2025c, December 29). *12 key things to know as Nigeria's vehicle recycling fee takes effect in 2026*. Legit.ng - Nigeria News. https://www.legit.ng/business-economy/industry/1690085-explained-12-crucial-facts-nigerias-mandatory-vehicle-recycling-fee-starting-2026/

It is closely aligned with the National Automotive Industry Development Plan (NAIDP), which NADDC is pushing for full enactment into law by the second quarter of 2026. The ELV framework supports backward integration, local content development, and the creation of a robust automotive value chain. It also creates important synergies with Nigeria's National Energy Transition Plan, the push toward electric and CNG mobility, and broader circular economy goals under the African Continental Free Trade Area (AfCFTA).[37]

3.5 Current status as of early 2026.

In February 2026, NADDC launched its Service Charter, signalling improved institutional readiness for policy execution.[38] While public awareness of the recycling fee remains a work in progress, the Council is emphasising the long-term benefits of cleaner roads, job creation, and economic value recovery. Full operationalisation including collection of the recycling fee and enforcement of pre-export certification is scheduled to commence progressively throughout 2026.

As of April 2026, Nigeria is in the final preparatory phase ahead of full nationwide rollout.[39] Sensitisation campaigns continue, and NADDC has intensified stakeholder engagement. Training programmes for technicians in EV maintenance, CNG conversion, and modern recycling techniques are active, with new automotive training centres commissioned in locations such as Potiskum.[40]

3.6 The Age-Limit Threshold and the Spare-Parts Continuity Problem

While the policy's age-limit provision (set at 12 years for imported used vehicles, with discussions of tightening it further toward a 10-year ceiling) is environmentally defensible, it carries a structural consequence that has so far

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[37] Obafemee80. (2025, December 19). *NADDC wants auto policy passed into law by 2nd 2026 as FG moves to curb importation of used vehicles*. https://autojosh.com/naddc-wants-auto-policy-passed-into-law-by-2nd-2026-as-fg-moves-to-curb-importation-of-used-vehicles/

[38] NADDC. (2026c, February 6). NADDC launches service charter – NADDC. https://naddc.gov.ng/naddc-launches-service-charter/

[39] NADDC. (2026b, April 23). National automotive design and development council - NADDC. *Facebook*. https://www.facebook.com/naddcouncil/posts/naddc-hosts-african-development-bank-delegation-chart-ways-to-advance-the-develo/1267855482187285/

[40] NADDC. (2026b, February). *NADDC commissions automotive training centre in potiskum, concludes mechatronics training on PMS/CNG vehicles – NADDC*. NADDC. https://naddc.gov.ng/naddc-commissions-automotive-training-centre-in-potiskum-concludes-mechatronics-training-on-pms-cng-vehicles/

received little attention in the policy debate: the supply of affordable spare parts for vehicles already in circulation depends almost entirely on the very import stream the policy seeks to restrict.

Nigeria's aftermarket ecosystem, clustered around hubs such as Ladipo (Lagos), Owode-Onirin, Nkpor (Anambra), and Panteka (Kaduna), is not primarily fed by OEM parts distributors. It is fed by cannibalisation: salvageable engines, gearboxes, ECUs, body panels, alternators, and suspension components harvested from accidented, written-off, or end-of-life vehicles imported alongside roadworthy units. A restriction that admits only vehicles under 10 (or 12) years old will, within a 3–5 year horizon, create a parts vacuum for the legacy fleet, i.e., the millions of vehicles already in Nigeria that are 10 years and older. These vehicles will not disappear simply because imports are restricted; they will continue to operate, but without a viable supply of compatible replacement components.

The downstream risks are threefold:

- **Premature abandonment**: Owners unable to source parts for older vehicles may abandon them, paradoxically *worsening* the very ELV dumping problem the policy aims to solve.
- **Counterfeit surge**: Historical evidence from Ghana and Kenya shows that age-based import restrictions, when not paired with a domestic parts strategy, trigger a sharp rise in substandard counterfeit parts entering through unregulated channels.
- **Regressive cost burden**: Vehicle owners in the lower- and middle-income brackets, who depend most heavily on the second-hand parts market, will face the steepest price escalations, undermining the policy's social legitimacy.

3.7 Implication for policy design

The age limit must be sequenced with a parallel framework that secures parts continuity for the existing fleet. This requires:

1. A transitional licensing window for certified domestic dismantlers to harvest parts from existing ELVs under controlled conditions;
2. The recognition of remanufactured components (rebuilt engines, refurbished alternators) as a legitimate market category subject to quality standards under SON; and

3. A 5-year phase-in window during which imports of essential spare parts (not whole vehicles) remain liberalised, giving local Authorised Treatment Facilities time to scale supply.

Without these accompanying measures, the age-limit rule risks becoming a point of failure rather than a point of progress, restricting inflows without organising the value already locked inside the existing fleet.

3.8 Unintended Consequences of Vehicle Age-Limit Thresholds in Nigeria

As Nigeria considers stricter vehicle import controls and ELV regulations, vehicle age-limit thresholds may appear attractive for improving environmental standards and road safety. However, in Nigeria's context, such policies could produce significant unintended economic and social consequences if implemented without supporting systems in place.

One major risk is disruption to the country's informal spare-parts economy. Older imported vehicles do not only provide transportation; they also supply affordable reusable components that sustain millions of ageing vehicles already operating across the country. Restricting older vehicle imports could therefore reduce the availability of low-cost spare parts, increasing maintenance costs for vehicle owners and transport operators.

This is particularly important because Nigeria's automotive ecosystem is built around repair, reuse, and long vehicle lifecycles rather than frequent vehicle replacement. Many households and small businesses rely on used vehicles because of high vehicle prices, limited financing options, and economic constraints. Stricter age limits could therefore reduce access to affordable mobility.

There is also a risk that rigid restrictions may encourage informal circumvention practices such as smuggling, falsification of import records, and expansion of black-market spare-parts trading, especially where enforcement systems remain weak. Furthermore, vehicle age alone does not always reflect roadworthiness or environmental performance. Poorly maintained newer vehicles may still perform worse than properly maintained older vehicles. This suggests that Nigeria should focus not only on age restrictions, but also on:

- Vehicle inspection systems

- Emissions standards
- Maintenance quality
- Recycling infrastructure

For this reason, any future age-limit policy should be gradual and supported by stronger local remanufacturing, recycling systems, and affordable mobility alternatives.

SECTION 4: GLOBAL BENCHMARKS AND COMPARATIVE ANALYSIS

Understanding global End-of-Life Vehicle (ELV) systems is essential for designing an effective policy framework for Nigeria. However, comparative analysis must be approached with caution. ELV systems are deeply shaped by institutional capacity, industrial development, consumer behavior, and regulatory culture. What works in highly industrialised economies cannot be directly transplanted into developing contexts without adjustment.

This section examines leading global models, particularly the European Union and Japan, alongside emerging economy experiences, to extract practical, context-sensitive lessons for Nigeria.

COUNTRY	REGULATORY FRAMEWORK	RECOVERY RATE	INFORMAL SECTOR ROLE	PRODUCER RESPONSIBILITY	INFRASTRUCTURE MATURITY	KEY FEATURE / LESSON
EU **European Union** DEVELOPED — BENCHMARK	Comprehensive	95%	Minimal	Full EPR	Advanced	Digital vehicle passport; recycled content mandates; design-for-circularity. Decades of policy stability.
JP **Japan** DEVELOPED — PRECISION MODEL	Comprehensive	~98%	Minimal	Prepaid Fee	Advanced	Prepaid recycling fee at purchase; centralised electronic tracking; near-zero illegal dumping.
ZA **South Africa** AFRICAN — TRANSITIONAL	Partial	~60%	Significant	Emerging	Moderate	Most advanced on continent but formal/informal coexistence limits full integration. Uneven EPR uptake.
IN **India** EMERGING — FORMALISING	Developing	~45%	Dominant	Incentive-Based	Limited	RVSFs underutilised; informal networks persist. Dual-system risk — formalisation without inclusion fails.
KE **Kenya** AFRICAN — INFORMAL-LED	Weak	~25%	Dominant	Absent	Minimal	8-yr age limit created parts shortage. KEBS strengthened inspection. Parts supply must be decoupled from age cap.
NG **Nigeria** TARGET STATE — 2026 ELV POLICY	Activating 2026	Target: 80%+	Dominant	Phase-in EPR	Nascent ATFs	Largest used-vehicle importer in Africa. Informal sector is the system. Strategy: upgrade, not replace. ₦150B opportunity.

WHAT NIGERIA CAN ADOPT NOW

Japan's **prepaid recycling fee model** and the EU's **lifecycle traceability concept** are immediately adaptable — starting simple, with registration-linked fees and basic VIN tracking.

WHAT REQUIRES CAREFUL LOCALISATION

Recycled content mandates, strict EPR, and aggressive enforcement need **infrastructure to exist first**. Kenya's experience shows that import restrictions without supply alternatives create harm.

NIGERIA'S UNIQUE ADVANTAGE

Unlike most peers, Nigeria has a **$5–6B informal circular economy already operating**. The policy task is formalisation, not creation — a far more tractable starting point.

A. DEVELOPED ECONOMIES

4.1 European Union: A Fully Integrated Circular Economy Model

The European Union (EU) represents the global benchmark for ELV management, having evolved over two decades from basic waste regulation into a comprehensive circular economy framework. Its updated ELV Regulation (finalised through Council and Parliament negotiations in late 2025) reflects a major shift: vehicles are no longer treated as waste at end-of-life, but as resource reservoirs within a closed-loop industrial system.[41] Key features include:

1. **Recycled Content Targets and Market Creation:** Automakers are required to ensure that new vehicles contain at least 15% recycled plastic within approximately 6 years, rising to 25% within about 10 years.[42] At least 20% of this must come from closed-loop recycling systems (i.e., from ELVs themselves)[43] Targets for steel and aluminium are also under development.
2. **Extended Producer Responsibility (EPR) and Lifecycle Accountability:** Producers are required to cover the costs of collecting, transporting, dismantling, and recycling vehicles, including those that are abandoned or whose manufacturers are no longer identifiable.
3. **Design-for-Circularity:** Another critical feature of the EU framework is its emphasis on design-for-circularity. [44]Manufacturers are required to design vehicles in ways that facilitate:easy disassembly,material separation, and component reuse and remanufacturing.
4. **Digital Vehicle Passport and Traceability Systems:** The EU has introduced a digital circularity passport for vehicles. As of April 2026, the

[41]IPOINT. (2026, February). *ELV regulation update 2026: Compromise text published*. IPOINT. https://www.ipoint-systems.com/news/details/elv-regulation-enters-final-phase-compromise-text-published/

[42]European Parliament. (2025, December). *Circular economy: Deal on new EU rules for the automotive sector*. European Parliament. https://www.europarl.europa.eu/news/en/press-room/20251209IPR32114/circular-economy-deal-on-new-eu-rules-for-the-automotive-sector

[43]Tan, C., & Trifkovic, V. (2025, April 10). Creating a circular economy for end-of-life vehicle plastics. World Economic Forum. https://www.weforum.org/stories/2025/04/plastics-end-of-life-vehicles-recycling-circular-economy/

[44]Council of the EU. (2025, December). *Circular economy: Council and Parliament strike deal on rules for vehicle circularity and management of end-of-life vehicles*. European Council. https://www.consilium.europa.eu/en/press/press-releases/2025/12/12/circular-economy-council-and-parliament-strike-deal-on-rules-for-vehicle-circularity-and-management-of-end-of-life-vehicles/pdf/

framework has entered the implementation phase.[45] While the foundational structure is already established, the initial set of sector-specific requirements is scheduled to take effect in 2027.[46] The Digital Product Passport (DPP) tracks:

a. Material composition
b. Ownership history
c. Repair and maintenance records
d. End-of-life processing

This system addresses a major challenge: millions of vehicles in Europe exit the formal system annually through illegal exports or unregulated dismantling.[47] By improving traceability, the EU enhances regulatory oversight, reduces leakage, and ensures compliance with environmental standards.

5. **Recycling and Recovery Targets:** The EU maintains high benchmarks for ELV standards globally, requiring member states to achieve approximately 85% reuse and recycling rates, alongside 95% total recovery rates, which include both material recycling and energy recovery processes.[48] These benchmarks are designed to ensure that only a minimal fraction of vehicle materials end up as waste, thereby maximising resource efficiency and reducing environmental harm.

4.1.1 Key Insight

The EU model demonstrates what is achievable under conditions of strong institutions, highly industrialised economies, and consistently high compliance levels across the value chain. It is the product of long-term policy stability and

[45] World Economic Forum. (2024, January). Enabling automotive circularity through digital vehicle passports. https://www3.weforum.org/docs/WEF_Enabling%20Automotive_Circularity_through_Digital_Vehicle_Passports_2024.pdf

[46] Anderson, K. (2026, April). The EU digital product passport (DPP): What you need to know. Greenly. https://greenly.earth/en-gb/blog/company-guide/the-eu-digital-product-passport-dpp-what-you-need-to-know

[47] Dunem, A. V. (2020, December 14). *An analysis of used car exports to developing countries*. Vision of Humanity. https://www.visionofhumanity.org/second-hand-cars-out-of-sight-out-of-mind/

[48] ERTRAC. (2026). ELV Recycling in the EU. *Status Quo Vs. Future* https://www.ertrac.org/wp-content/uploads/2026/03/ERTRAC-CC-Deep-Dive-ELV-Recycling-2026.pdf#:~:text=*%20Reuse%20&%20Recycling:%2085%25%20*%20Reuse,95%25%20*%20Maximum%20Disposal%20(e.g.%2C%20landfill):%205%25

coordinated industrial development rather than short-term regulatory action. However, the same complexity that enables its high performance also limits its transferability. The system depends on advanced technology, strong administrative capacity, and high consumer and producer compliance, conditions that are not yet fully present in Nigeria. As a result, while the EU framework provides valuable strategic guidance, it must be carefully adapted rather than directly replicated, with emphasis on gradual institutional development, infrastructure scaling, and inclusion of existing informal systems.

4.2 Japan: Precision, Efficiency, and Industry Coordination

Japan's ELV system is widely regarded as one of the most efficient globally, characterised by exceptionally high material recovery rates, strict regulatory compliance, and strong coordination between government, manufacturers, and recycling operators.[49] Unlike the EU's broad regulatory approach, Japan's system is highly centralised, precision-driven, and deeply embedded within its industrial governance structure. [50] The effectiveness of the Japanese model lies not only in regulation, but in its ability to integrate financial planning, industrial processes, and environmental standards into a single coordinated system that ensures predictability and accountability across the entire vehicle lifecycle.

4.2.1 System Design and Financing

A defining feature of Japan's ELV framework is its prepaid recycling fee system, introduced through national legislation.[51] Under this arrangement, vehicle owners are required to pay a recycling fee at the point of vehicle purchase or registration. These funds are collected and securely held within a centralised system until the vehicle reaches the end of its usable life. This financing structure is particularly significant because it ensures that end-of-life vehicle management

[49] ScrapCarNetwork. (2025, December 19). What the UK can learn from Japan's scrap car model. Scrap Car Network. https://www.scrapcarnetwork.org/news/what-the-uk-can-learn-from-japans-scrap-car-model/

[50] VRW. (2025, July 30). *Japan's evolving ELV recycling strategy: Toward material recovery and circularity*. Auto Recycling World. https://autorecyclingworld.com/japans-evolving-elv-recycling-strategy-toward-material-recovery-and-circularity-2/

[51] *Confirmation of recycling fee deposit*. (n.d.). Retrieved May 13, 2026, from https://www.meti.go.jp/policy/mono_info_service/mono/automobile/automobile_recycle/other/pdf/pamphlet/foreigner.pdf

is fully funded in advance, eliminating the risk of financial shortfalls when vehicles are eventually scrapped. It also reduces the likelihood of illegal dumping or abandonment, since recycling costs are not deferred to the point of disposal.

The system is reinforced by several institutional mechanisms:

a. A centralised electronic tracking system that monitors vehicles from registration through to dismantling, ensuring traceability and accountability across the lifecycle.
b. A network of licensed dismantlers and certified recyclers, who are strictly regulated and required to meet environmental and operational standards.
c. Comprehensive environmental compliance requirements, which govern the safe handling of hazardous materials such as oils, fluids, and batteries during dismantling and recycling processes.

4.2.2 Operational Efficiency and Environmental Outcomes

Japan's ELV system is widely regarded as achieving near-complete recovery of valuable materials, particularly metals such as steel and aluminium, which are efficiently extracted and reintroduced into industrial supply chains.[52] High-value components are also systematically recovered for reuse or remanufacturing, contributing to resource efficiency and industrial sustainability. Strict compliance mechanisms and high levels of public and industry discipline have resulted in very low rates of illegal dumping or informal dismantling activities. Unlike many developing economies, where ELVs often circulate through unregulated informal markets, Japan's system ensures that end-of-life vehicles remain within formal, monitored channels throughout their disposal process. This efficiency is supported not only by regulation but also by strong institutional trust, advanced recycling technologies, and a culture of compliance that reinforces system integrity at every stage.

4.2.3 Limitations for Nigeria

[52]Hiratsuka, J., Sato, N., & Yoshida, H. (2013). Current status and future perspectives in end-of-life vehicle recycling in Japan. *Journal of Material Cycles and Waste Management*, *16*(1), 21–30. https://doi.org/10.1007/s10163-013-0168-z

Despite its effectiveness, Japan's ELV model is not directly transferable to Nigeria due to several structural and contextual constraints.

1. The system depends heavily on advanced technological infrastructure, including integrated digital tracking systems, highly specialised recycling facilities, and automated material recovery technologies. These require significant capital investment and technical expertise that are still developing in Nigeria's context.
2. The model assumes strong institutional enforcement capacity, with regulatory bodies capable of consistently monitoring compliance and enforcing penalties. In Nigeria, regulatory fragmentation and capacity limitations present significant challenges to achieving this level of oversight.
3. The system is underpinned by deeply embedded cultural norms of compliance and institutional trust, where both individuals and corporations are highly likely to adhere to regulations. In contrast, Nigeria's regulatory environment is characterised by mixed compliance behavior, particularly in sectors with strong informal market presence.

As a result, direct adoption of the Japanese model would be impractical and potentially ineffective in the Nigerian context. Notwithstanding, this does not diminish its value as a reference point. Certain elements of the system, particularly the upfront recycling fee mechanism and structured vehicle tracking systems offer highly relevant lessons. These components can be adapted incrementally to strengthen Nigeria's ELV policy framework without requiring full systemic replication.

4.2.4 Key Insight

The Japanese ELV model demonstrates that high-performance recycling systems are not solely dependent on regulation, but on the tight integration of financial design, institutional coordination, and industrial discipline. Its success is also rooted in conditions that are difficult to replicate: advanced technological capacity, strong governance institutions, and a deeply embedded compliance culture. For Nigeria, the strategic lesson is not imitation, but selective adaptation, extracting operational principles while redesigning implementation mechanisms to fit local institutional and economic realities.

B. EMERGING ECONOMY MODELS

End-of-Life Vehicle (ELV) systems in emerging economies provide the most relevant comparative lens for Nigeria, as they operate under similar conditions of high informality, limited enforcement capacity, and strong dependence on vehicle reuse economies. Unlike advanced economies where ELV systems are highly formalised and technology-driven, developing countries must grapple with the reality that informal markets already perform much of the recycling and material recovery functions.

4.3 India: Formalisation in a Highly Informal System

India offers one of the most instructive comparative cases for Nigeria due to the structural similarity of its automotive and recycling ecosystems. Like Nigeria, India's ELV sector is characterised by a large, deeply embedded informal economy that dominates vehicle dismantling, parts recovery, and scrap trading.[53] These informal actors are often highly efficient in extracting value from end-of-life vehicles, despite operating outside formal regulatory frameworks.

In response to growing environmental and industrial concerns, India has introduced policy reforms aimed at formalising the sector, most notably through the establishment of Registered Vehicle Scrapping Facilities (RVSFs).[54] These facilities are designed to bring dismantling activities under regulated conditions, improve environmental compliance, and create structured pathways for material recovery. The policy framework also includes financial incentives intended to encourage vehicle owners to retire older vehicles and channel them into certified scrapping systems.[55]

Implementation has revealed significant structural limitations such as informal operators struggling to meet the technical, financial, and administrative requirements necessary for licensing under the formal system. As a result, formal

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[53]Khan, Z. (2024, December 19). *Beyond the scrapyard: Accelerating the formal End-of-Life Vehicles recycling ecosystem in India*. Xynteo. https://xynteo.com/beyond-the-scrapyard-accelerating-the-formal-end-of-life-vehicles-recycling-ecosystem-in-india/

[54]SIAM. *Accelerating india's transition to an automotive circular economy*. SIAM. Retrieved May 13, 2026, from https://www.siam.in/uploads/Know/AnnualReport/10998file_Accelerating-India-Transition-Automotive-Circular-Economy.pdf

[55]Rajput, R. (2025, February 15). India's vehicle scrap policy: A growth driver of a sustainable auto industry. *LinkedIn*. https://www.linkedin.com/pulse/indias-vehicle-scrap-policy-growth-driver-sustainable-ravi-rajput-7vbyc

facilities often remain underutilised, while informal dismantling networks continue to dominate the actual flow of end-of-life vehicles.[56] This has led to a critical policy outcome: instead of full system transformation, India is experiencing the emergence of dual ELV systems, a formal sector operating in parallel with a persistent and often more active informal market.

The key lesson for Nigeria is therefore clear: formalisation without inclusion does not eliminate informality; it often institutionalises fragmentation. For policy to be effective, it must actively integrate informal actors into the formal value chain rather than attempt to replace them entirely.

4.4 Kenya and Cameroon: Informal Efficiency, Environmental Risk

In countries such as Kenya and Cameroon, ELV systems remain almost entirely informal, with minimal state regulation or structured recycling infrastructure.[57] Within these contexts, end-of-life vehicles are typically dismantled in open-air yards and informal workshops, where reusable parts are extracted and resold, while remaining materials are either discarded or sold as scrap into local markets. Despite the absence of formal regulation, these systems are economically significant. They provide affordable spare parts, sustain large numbers of informal workers, and ensure that vehicles continue to generate economic value well beyond their intended lifespan.

However, these systems also generate substantial environmental and public health risks. These include:

a. **Soil contamination**, resulting from uncontrolled leakage of oil, fuel, and other hazardous fluids into the ground
b. **Air pollution**, particularly from the burning of plastic components and non-recyclable materials

[56] SIAM. *Accelerating india's transition to an automotive circular economy*. SIAM. Retrieved May 13, 2026, from https://www.siam.in/uploads/Know/AnnualReport/10998file_Accelerating-India-Transition-Automotive-Circular-Economy.pdf

[57] Numfor, S., Zhang, Z., & Omosa, G. (2021, June 18). ELVs recycling in developing countries. *Solange Numfor*. https://encyclopedia.pub/entry/10992

c. **Unsafe handling of hazardous materials**, including batteries, fuel systems, and electronic waste, often without protective equipment or environmental safeguards

Attempts to regulate these systems in both Kenya and Cameroon have had limited success, primarily due to weak enforcement capacity, limited institutional reach, and the economic importance of informal ELV activities.[58] In many cases, regulatory interventions have remained largely on paper, with informal markets continuing to operate as the dominant system in practice.

4.4.1 Kenya's 8-Year Vehicle Import Rule: Unintended Spare-Parts Pressure and Policy Adjustment

Kenya's vehicle import policy provides an important example of how automotive regulation can create unintended pressures within the spare-parts ecosystem. The country enforced an 8-year age limit on imported used vehicles. The policy was introduced primarily to reduce the inflow of older, high-emission vehicles and improve road safety and environmental standards.[59]

However, the restriction also contributed to significant pressure within Kenya's informal automotive aftermarket. Older vehicles served as major sources of affordable spare parts through dismantling and cannibalisation. As import restrictions tightened, supply constraints emerged in the spare-parts market, particularly for lower-income vehicle owners who depended on inexpensive second-hand components to maintain aging vehicles already in circulation. To address quality and supply concerns, the Kenya Bureau of Standards (KEBS) strengthened its pre-shipment inspection regime, requiring imported vehicles and certain automotive components to meet specified roadworthiness and quality standards before entering the country.[60] This helped reduce the inflow of

[58]Numfor, S., Zhang, Z., & Omosa, G. (2021, June 18). ELVs recycling in developing countries. *Solange Numfor*. https://encyclopedia.pub/entry/10992

[59]Wanjohi, W. (2025, November). Kenya must rethink vehicle age restrictions: A call for affordable mobility. *Facebook*. https://web.facebook.com/Hn.Weston/posts/kenya-must-rethink-vehicle-age-restrictions-a-call-for-affordable-mobilitykenyas/1365817271660226/?_rdc=1&_rdr#

[60]Kenya Bureau of Standards (KEBS). (n.d.). Import inspection – kenya bureau of standards. Kenya Bureau of Standards (KEBS). Retrieved May 13, 2026, from https://www.kebs.org/import-inspection/

substandard vehicles and parts while improving traceability within the supply chain.

At the same time, Kenya gradually expanded support for local remanufacturing and licensed automotive repair activities, creating more structured pathways for refurbishment and reuse of components within the domestic market.[61] This shift helped ease pressure on spare-parts shortages while supporting local industrial participation in the automotive value chain.

The Kenyan experience highlights an important lesson for Nigeria: restrictive vehicle or ELV regulations can unintentionally destabilise spare-parts markets if alternative supply systems are not developed simultaneously. Effective policy must therefore balance environmental objectives with the realities of affordability, maintenance demand, and informal aftermarket dependence.

4.4.2 Key Insight

The experiences of India, Kenya, and Cameroon collectively highlight a fundamental truth about ELV policy in emerging economies: informality is not a marginal issue, it is the system itself. Efforts to formalise ELV sectors without integrating existing informal structures often result in:

a. Parallel systems (formal vs informal)
b. Underutilised infrastructure
c. Weak compliance
d. Persistent environmental risks

For Nigeria, the policy implication is critical. Successful ELV reform will depend not on eliminating informality, but on gradually transforming it into a regulated, supported, and economically viable component of the formal circular economy.

4.5 South Africa: A Transitional Hybrid Model

[61] National Assembly. (2022, February). *National automative policy*. https://www.parliament.go.ke/sites/default/files/2022-05/Sessional%20paper%20no%201%20of%202022%20on%20National%20Automotive%20policy%20Feb%202022.pdf

South Africa represents one of the most advanced End-of-Life Vehicle (ELV) governance systems on the African continent, offering a transitional hybrid model between informal dominance and fully formalised circular economy systems.[62] Unlike many African countries where ELV activities are almost entirely informal, South Africa has made measurable progress in establishing structured regulatory frameworks, partial formalisation of recycling activities, and comparatively better-developed industrial infrastructure for vehicle dismantling and material recovery.[63]

The country's ELV landscape includes a growing number of licensed recyclers and dismantlers, as well as evolving environmental compliance standards that govern the handling of hazardous automotive waste.[64] These developments indicate a gradual shift toward a more regulated system, supported by broader industrial capacity and relatively stronger institutional frameworks compared to many peer economies on the continent.

A major constraint faced in the South Africa ELV ecosystem is the continued competition between formal recycling operators and entrenched informal dismantling networks, which often operate at lower cost and with fewer regulatory obligations. This creates an uneven playing field, where formal operators struggle to scale sustainably while informal actors continue to capture a substantial share of the ELV value chain. In addition, regulatory agencies face limitations in monitoring compliance across dispersed dismantling sites, which reduces the effectiveness of existing environmental and safety standards. Furthermore, producer responsibility mechanisms remain relatively underdeveloped, limiting the extent to which manufacturers contribute financially or operationally to end-of-life vehicle management.

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[62]Numfor, S. A., Omosa, G. B., Zhang, Z., & Matsubae, K. (2021b). A review of challenges and opportunities for end-of-life vehicle recycling in developing countries and emerging economies: A SWOT analysis. Sustainability, 13(9). https://doi.org/10.3390/su13094918

[63]The Department of Trade, Industry and Competition (the dtic). (2018, December). Geared for growth south africa's automotive industry master plan to 2035. www.lhedtic.gov.za. https://www.thedtic.gov.za/wp-content/uploads/Masterplan-Automotive_Industry.pdf

[64]Numfor, S. A., Omosa, G. B., Zhang, Z., & Matsubae, K. (2021c). A review of challenges and opportunities for end-of-life vehicle recycling in developing countries and emerging economies: A SWOT analysis. Sustainability, 13(9). https://doi.org/10.3390/su13094918

Overall, South Africa illustrates a transition pathway rather than a fully mature ELV system. It demonstrates that partial formalisation is possible within an African context, but also highlights the difficulty of achieving full system integration in environments where informality remains economically entrenched and institutionally resilient.

4.6.1 Key Insight

South Africa highlights the complexities of managing transition in a context where informal and formal systems coexist, for Nigeria, ELV reform must be designed as both an economic transition and a social contract, not merely an environmental regulation.

C. KEY COMPARATIVE CONTRASTS

A cross-country comparison of End-of-Life Vehicle (ELV) systems reveals four fundamental dimensions that determine the effectiveness of policy design and implementation. These dimensions: enforcement capacity, infrastructure maturity, consumer economics, and producer responsibility, highlight why ELV systems perform differently across developed and developing economies, and why policy transfer must be carefully adapted to local realities.

1. **Enforcement Capacity:** In developed economies, enforcement is supported by well-resourced environmental agencies, clearly defined legal frameworks, and advanced digital monitoring systems that enable real-time tracking of vehicles, recyclers, and compliance activities. In contrast, many developing countries face fragmented regulatory authority, overlapping institutional mandates, and limited technical and financial capacity, which significantly weakens enforcement effectiveness.
2. **Infrastructure Maturity:** Advanced economies rely on a well-developed ecosystem that includes specialised dismantling facilities, high-capacity recycling plants, and efficient logistics and reverse supply chains. These infrastructures ensure that vehicles can be processed safely, efficiently, and at scale, enabling high material recovery rates and minimal environmental leakage. In many developing countries, including Nigeria, such infrastructure remains limited, unevenly distributed, and largely underdeveloped. Most vehicle dismantling and recycling activities occur

within informal or semi-formal settings that lack standardised equipment, environmental safeguards, and industrial integration.

3. **Consumer Economics and Vehicle Lifecycles:** In high-income economies, vehicles are typically replaced more frequently due to higher disposable incomes, access to financing, and rapid technological upgrading cycles. In Nigeria, however, the situation is fundamentally different. Vehicles are often used for significantly longer periods due to income constraints, high import costs, and limited access to vehicle financing. As a result, vehicles frequently undergo multiple cycles of repair, resale, and repurposing before they are finally retired.
4. **Producer Responsibility Models:** Producer responsibility is a defining feature of advanced ELV systems, particularly in the European Union, where Extended Producer Responsibility (EPR) frameworks place significant financial and operational obligations on manufacturers throughout the vehicle lifecycle. Under such systems, producers are responsible for financing collection, recycling, and environmentally safe disposal of end-of-life vehicles. Unlike most developing countries, there is either limited, emerging, or entirely absent EPR frameworks, largely due to institutional constraints and the dominance of imported vehicles rather than domestic manufacturing.

D. OPINIONATED INSIGHTS: STRATEGIC ADAPTATION FOR NIGERIA

Nigeria's ELV policy does not need to replicate global systems to be effective. In fact, the most important design principle is sequencing, that is, building regulatory ambition in line with institutional and market capacity. A successful ELV framework in Nigeria will depend on pragmatic adaptation rather than regulatory sophistication for its own sake.

1. **What Nigeria Can Realistically Adopt:** A practical starting point for Nigeria is a simplified and phased Extended Producer Responsibility (EPR) model, rather than a full-scale producer obligation system from the outset. Instead of immediately assigning full lifecycle responsibility to manufacturers and importers, as seen in advanced economies, Nigeria can begin with registration-linked recycling fees. This approach embeds ELV financing within existing vehicle registration and licensing systems, ensuring that funds are gradually accumulated for end-of-life

management without placing excessive upfront pressure on industry actors or consumers. Over time, this can evolve into a more comprehensive EPR framework as institutional capacity strengthens. In parallel, Nigeria can begin establishing Authorised Treatment Facilities (ATFs) as the backbone of formal ELV processing. However, rather than attempting nationwide rollout, implementation should start with pilot hubs in high-activity automotive and industrial clusters such as Lagos, Abuja, Kano, and Aba. These cities already host dense automotive repair and spare parts ecosystems, making them natural transition points from informal to formal recycling systems. Lessons from these pilots can then inform gradual expansion to other regions, ensuring that infrastructure growth is evidence-based and context-specific.

Another feasible early-stage intervention is the introduction of basic traceability systems, built on existing vehicle registration and licensing databases. Instead of investing immediately in complex digital vehicle passports, Nigeria can begin by improving the quality, integration, and completeness of current administrative records. This includes linking vehicle registration data to deregistration, scrappage, and dismantling records. Such a system would significantly improve visibility into vehicle lifecycles while remaining cost-effective and institutionally manageable. Most importantly, any formalisation strategy must be explicitly inclusive. Nigeria's ELV ecosystem is heavily dependent on informal workers, mechanics, dismantlers, scrap dealers, and parts traders, who already perform core recycling functions. A successful transition must therefore create structured pathways for these actors to enter the formal system through skills training, micro-financing, cooperative models, and simplified licensing regimes. Without this, formalisation risks exclusion rather than transformation.

2. **What Requires Careful Localisation:** While global benchmarks provide useful guidance, several policy instruments must be carefully adapted to Nigeria's realities to avoid unintended consequences.
    a. Recycled content mandates, such as those used in the European Union, are not immediately suitable for Nigeria. These requirements depend on a mature recycling industry capable of consistently producing high-quality secondary materials at scale. In Nigeria's

current context, recycling capacity remains limited and unevenly distributed. Introducing strict content mandates too early could create compliance pressure without supply-side capacity, leading to inefficiencies or market distortion. The more appropriate initial focus is therefore on building reliable collection, dismantling, and material recovery systems before considering binding recycled content requirements.

b. While EPR is a powerful tool for financing ELV systems, rapid or poorly sequenced implementation could unintentionally increase the cost of vehicle ownership. In a price-sensitive market like Nigeria, this could reduce access to mobility, particularly for low- and middle-income households who rely heavily on used imported vehicles. A phased approach that begins with modest levies and gradually expands producer obligations is therefore more sustainable.
c. Strict enforcement without corresponding infrastructure development carries significant risks. In contexts where formal recycling facilities and collection systems are insufficient, aggressive enforcement can push ELV activities further into informality rather than integrating them. This often results in the emergence of black markets for vehicle parts and unregulated dismantling activities, undermining both environmental and fiscal objectives. Effective enforcement must therefore be introduced in tandem with infrastructure expansion and inclusion strategies, rather than as a standalone instrument.

E. STRATEGIC POSITIONING

Nigeria's End-of-Life Vehicle (ELV) policy occupies a uniquely strategic position at the convergence of three major national and global development agendas: industrial development, circular economy transition, and energy transition, particularly the emerging EVs and battery recycling ecosystem.

From an industrial development perspective, ELVs represent a largely untapped source of secondary raw materials like steel, aluminium, plastics, and electronic components, that can support domestic manufacturing and reduce dependence on imports. If properly structured, the ELV value chain can function as a low-cost entry point into industrialisation, particularly in recycling, remanufacturing, and

light manufacturing industries that require steady material inputs rather than heavy primary extraction. At the same time, ELV systems sit at the core of the circular economy transition, where value is continuously extracted from products beyond their primary use cycle. In this context, vehicles are not simply discarded assets but material banks that retain economic value through reuse, refurbishment, and recycling.

More importantly, ELVs are increasingly linked to the energy transition agenda, particularly as global mobility shifts toward EVs. The future ELV system will not only deal with conventional automotive waste but also with EV batteries, electronic components, and critical minerals recovery. This positions Nigeria's ELV framework as a foundational infrastructure for future energy systems, especially in managing battery waste and enabling material recovery for clean technologies.

Nigeria's informal circular economy is already functioning at scale, performing many of the core functions that formal ELV systems are designed to achieve, although outside regulatory oversight. The challenge is not whether a circular system exists, but how to transform it into a formal, safe, and scalable industrial structure without disrupting its economic efficiency or livelihoods. This leads to the core strategic dilemma facing Nigeria's ELV policy: How to formalise without destroying value, regulate without excluding people, and industrialise without undermining affordability. Resolving this tension will determine whether Nigeria's ELV framework becomes a catalyst for inclusive industrial transformation or a regulatory system that fragments an already functioning informal economy.

SECTION 5: CRITICAL ANALYSIS: STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT)

The 2026 ELV policy is a bold and timely intervention, but its success hinges on navigating complex implementation realities in the Nigeria context. The SWOT analysis below synthesises key dimensions.

5.1 SWOT ANALYSIS

5.2 Critical Insights

1. **Strengths**: The policy demonstrates strategic foresight by linking waste management with economic and industrial goals. The mandatory recycling fee creates a dedicated funding source, while pre-export certification offers a practical tool to improve the quality of imported vehicles.
2. **Weaknesses:** The most critical gap remains the huge mismatch between policy ambition and current implementation capacity. With very few ATFs and weak vehicle registration systems, there is a real danger of collecting fees without delivering corresponding services. Equity concerns are also significant in a market dominated by older vehicles.
3. **Opportunities:** The greatest potential lies in transforming Nigeria's informal auto sector. Strategic integration of the Spare-Parts Dependency Loop through cooperatives, certification, and remanufacturing incentives could create thousands of green jobs while supplying secondary raw materials to local industries. The policy also positions Nigeria to prepare proactively for the electric vehicle transition.
4. **Threats:** Implementation resistance remains a major concern, particularly if early infrastructure delivery lags behind fee collection. A particularly nuanced threat is the potential parts-supply shock for the legacy fleet. With the majority of vehicles in Nigeria being pre-2016 models, aggressive removal or restriction of end-of-life vehicles without adequate formal remanufacturing capacity could disrupt the informal spare parts market. This may lead to premature abandonment of still-functional vehicles, increased reliance on low-quality counterfeit parts, higher maintenance costs, and reduced mobility for millions of Nigerians. Other external threats include tightening global used-vehicle export rules and the accelerating shift to EVs, which could rapidly change import dynamics. Combined with competing national priorities, these risks could undermine the policy if not carefully managed.

5.3 Overall Critical Assessment

The SWOT reveals a policy with strong strategic intent but fragile execution foundations. Its success will depend on whether opportunities, particularly

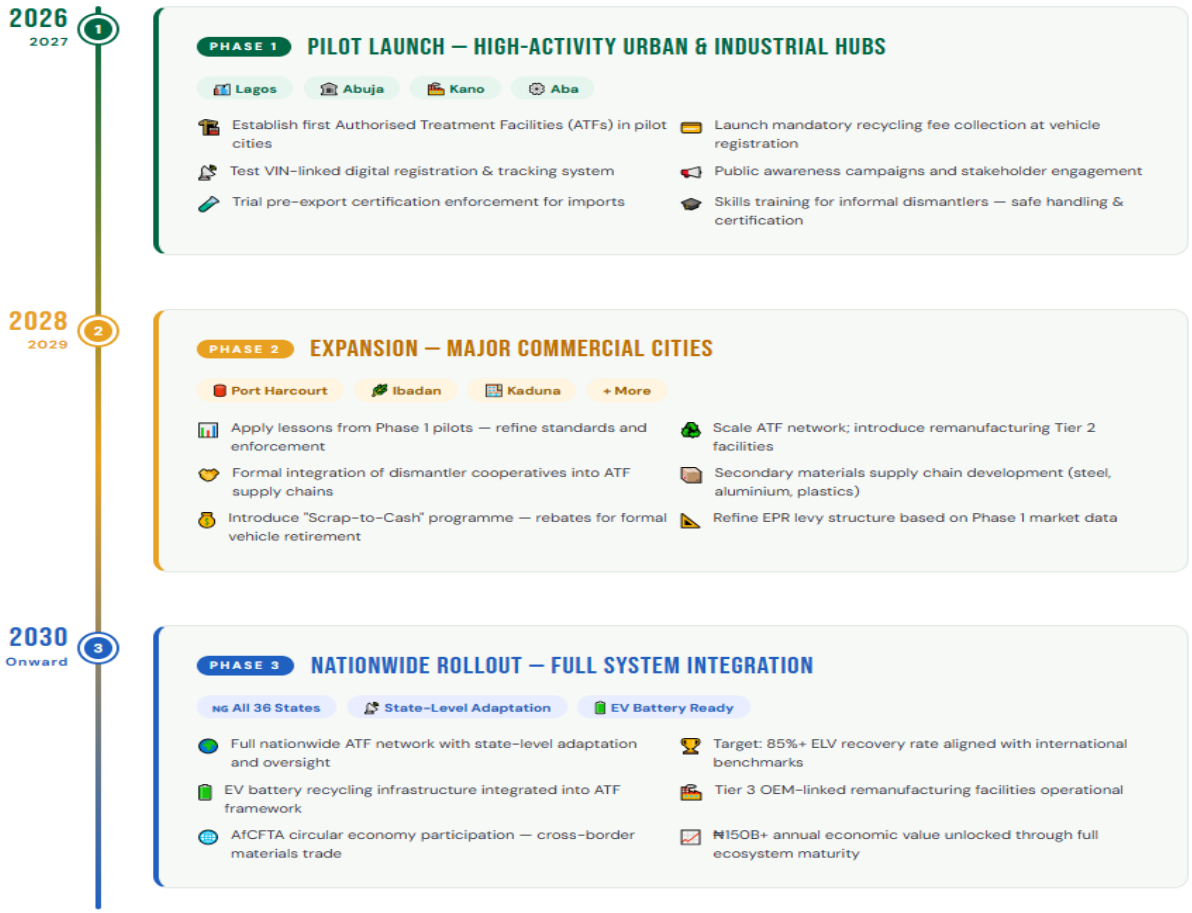
formal-informal sector integration and remanufacturing development can be leveraged to offset weaknesses and mitigate threats such as the legacy fleet parts-supply shock. From a systems perspective, the ELV Policy should be designed with adaptive mechanisms, pilot testing, and continuous stakeholder feedback rather than rigid enforcement.

SECTION 6: RECOMMENDATIONS AND IMPLEMENTATION FRAMEWORK

The success of Nigeria's 2026 ELV policy will depend less on policy ambitions and more on a pragmatic implementation-focused framework that balances ambition with institutional capacity and market realities. The pathways below prioritise feasibility, inclusion, and scalability, ensuring that reform delivers economic, environmental, and social value simultaneously.

1. **Phased Rollout Strategy**

   Adopt a pilot-then-scale approach to build evidence, minimise resistance and demonstrate quick wins.



2. **Incentive Design and Economic Instruments**

- Offer tax breaks, matching grants, import duty waivers and low-interest loans for formal recyclers, remanufacturers and investors in ELV infrastructure.
- **Subsidised training programmes** for informal workers transitioning into formal roles.
- **Micro-financing and equipment support** for small-scale dismantlers.
- Create a "Scrap-to-Cash" programme designed where vehicle owners receive financial compensation for retiring old vehicles through formal channels. Financial compensation can range from rebates to tax credits to encourage participation.

3. **Inclusive Formalization of the Informal Sector**

   The Informal sector must be treated as a partner, and not a problem.

   - Establish dismantler cooperatives with certification pathways, basic safety training, and access to formal markets.
   - Create tiered licensing to allow certified informal operators to become authorised collection points or junior partners in ATFs.
   - Launch skills development programmes (in partnership with technical institutions) focusing on safe dismantling, hazardous waste handling, and remanufacturing.

4. **Capacity Building and Infrastructure Development**
   - Prioritise establishment of regional ATFs through public-private partnerships (local entrepreneurs + international technology providers).
   - Facilitate knowledge and technology transfer from EU/Japan/China recyclers, starting with low-tech, labour-intensive solutions suitable for Nigeria's context.
   - Technical training programmes in dismantling, material recovery, and hazardous waste handling.
   - Strengthening regulatory agencies with monitoring tools and enforcement training.
   - Access to climate and development financing
5. **Monitoring, Digital Tools and Governance system**
   - Implement a digital vehicle registration and tracking system (linked to existing registration platforms) for better traceability and ELV identification. The system should be able to track ownership

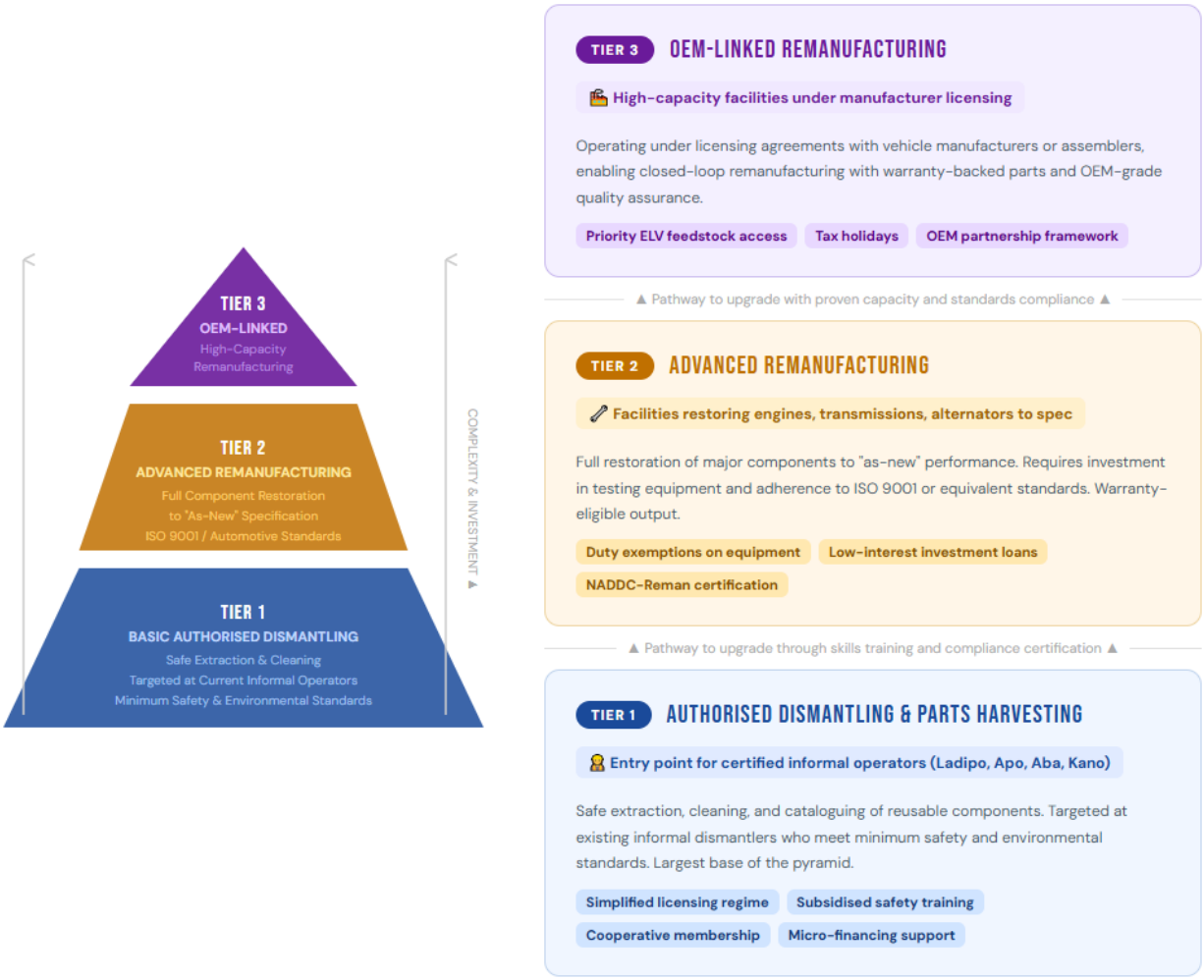
transfers, record vehicle deregistration and scrappage, and link vehicles to authorised dismantlers and recyclers.
- Define clear, practical criteria for when a vehicle becomes “end-of-life.”
- Establish an independent monitoring committee with civil society and private sector representation to ensure transparency in fee utilisation.

6. **Establish Monitoring and Evaluation (M&E) Frameworks defining clear KPIs/Metrics**
    - Collection rate of ELVs (% of estimated quarterly and annual generation)
    - Recycling/recovery rate (% by weight)
    - Number of formal jobs created (direct + indirect)
    - Reduction in abandoned vehicles and illegal dumping
    - Revenue generated and % reinvested in infrastructure
    - Reduction in specific pollutants (e.g., PM2.5, heavy metals) in pilot areas
7. **Establish a Transitional Spare-Parts Continuity Plan (2026–2031)**

    To prevent the age-limit threshold from triggering a parts shortage for Nigeria's legacy fleet, NADDC, in coordination with SON, the Federal Ministry of Industry, and Customs, should:

    - License Tier-1 ATFs specifically for parts harvesting and remanufacturing, with technical standards aligned to ISO/IEC 17025 testing protocols.
    - Maintain a 5-year liberalised window for spare parts (HS Codes 8708.x) imports, decoupled from the whole-vehicle age cap.
    - Create a certified remanufactured-parts label ("NADDC-Reman") to formalise and dignify the second-life parts market.
    - Integrate VIN-linked parts tracing so that components harvested from ELVs can be tracked back to source vehicles, enabling warranty and quality assurance.
8. **Domestic Remanufacturing Licensing Tier**

    To unlock higher-value circular activities and address the Spare-Parts Dependency Loop, NADDC should introduce a tiered licensing framework for remanufacturing operations:



This tiered system should include graduated incentives: tax holidays, duty exemptions on remanufacturing equipment, and priority access to ELV feedstock for higher tiers. It will encourage technology upgrading, create skilled jobs, and gradually reduce Nigeria's heavy reliance on imported spare parts while maintaining supply continuity for the legacy fleet.

9. Fiscal Architecture & EPR Levy

A robust and transparent fiscal framework is essential to fund infrastructure without creating undue burden. The policy should adopt a hybrid Extended Producer Responsibility (EPR) model tailored to Nigeria's context:

- Introduce a variable EPR Levy collected at the point of vehicle registration/import, differentiated by vehicle age, engine type, and manufacturer/importer responsibility. Newer vehicles and locally assembled units could attract lower rates.
- Establish a dedicated ELV Fund managed with multi-stakeholder oversight (NADDC, NESREA, private sector, and civil society) to ensure collected revenues are ring-fenced and transparently used for ATF development, training, and subsidies.
- Mandate Producer Responsibility Organisations (PROs) for major importers and assemblers, requiring them to meet collection and recovery targets or pay into the ELV Fund.
- Introduce pay-as-you-go incentives such as rebates for vehicles proven to have been responsibly dismantled and recycled, and performance-based refunds for manufacturers/importers who exceed recovery targets.

10.Public Engagement, Equity, and Awareness

- Run sustained, multi-channel sensitisation campaigns targeting vehicle owners, mechanics, transport unions, and the public.
- Introduce equity measures such as subsidies or phased compliance for low-income brackets and commercial operators.
- Engage women and youth groups in green recycling entrepreneurship.
- Protection mechanisms to ensure that cost burdens do not disproportionately affect vulnerable groups.

SECTION 7: CONCLUSION

Nigeria faces a convergence of pressures that have been building quietly for years: a vehicle fleet averaging 16 years, ₦4.31 trillion spent on car imports over three years, mounting environmental costs from informal dismantling, and a widening gap between the economic value locked inside end-of-life vehicles and what is actually captured. Nigeria's 2026 End-of-Life Vehicle (ELV) policy is more than a regulatory reform; it offers a genuine opportunity to transform one of the most visible symbols of environmental degradation and resource inefficiency into a driver of economic value, industrial growth, environmental protection and green employment.

What this analysis has sought to examine is whether that ambition is matched by sufficient realism about the conditions in which it must succeed. Three central conclusions emerge from this critical review:

1. **The informal sector is not a problem to be solved; it is a foundation to be built upon:** Nigeria's automotive recycling economy is already functioning, driven by mechanics, dismantlers, scrap traders, and spare-parts markets that collectively sustain mobility for millions of Nigerians. These actors perform the core circular economy functions of reuse, refurbishment, and material recovery, albeit informally, unsafely, and below their economic potential. The risk in any formalisation effort is not that it moves too boldly against informality, but that it inadvertently destroys the value that informality already creates. The lesson from India, Kenya, and South Africa is unambiguous: parallel systems, one formal and underutilised, the other informal and dominant, are the default outcome when formalisation is imposed rather than negotiated. Nigeria's ELV framework must therefore prioritise inclusive transition, tiered licensing, cooperative formation, certification pathways, and micro-financing, not simply regulatory enforcement. The informal sector's ingenuity is a national asset; the policy's job is to give it structure, protection, and access to better markets.
2. **Sequencing matters as much as ambition:** The EU and Japan offer instructive benchmarks, but they are the product of decades of institutional development, advanced infrastructure, and deeply embedded

compliance cultures. They cannot be transplanted into Nigeria's context without careful adaptation. The more relevant comparative lessons come from emerging economies that have grappled with the same structural constraints: high vehicle import dependency, weak enforcement capacity, price-sensitive consumers, and markets where used original equipment parts are economically more important than formal recycling targets. Nigeria should therefore resist the temptation to design an ELV system that looks sophisticated on paper but lacks the institutional substrate to function in practice. A phased approach, beginning with pilot hubs in Lagos, Abuja, Kano, and Aba, followed by evidence-based expansion, is not a compromise of the policy's vision. It is the most credible path to achieving it. Collecting a recycling fee before the infrastructure exists to justify it is the surest way to erode public trust and hand opponents a legitimate grievance.

3. **The spare-parts continuity problem is the most underappreciated implementation risk:** The majority of vehicles currently operating in Nigeria are pre-2016 models. Their owners depend on a steady supply of affordable second-hand components harvested from dismantled end-of-life vehicles. The 12-year age-limit threshold for vehicle imports, if enforced without a parallel strategy to maintain parts supply, will not reduce the stock of old vehicles on Nigerian roads; it will simply remove the supply chain that keeps them operational. The downstream consequences, including premature vehicle abandonment, a counterfeit parts surge, and regressive cost burdens on lower-income vehicle owners, would directly undermine the policy's road safety and environmental objectives. Addressing this requires a Spare-Parts Continuity Plan that runs alongside the age-limit rule: transitional licensing for domestic dismantlers, a certified remanufactured-parts framework under SON, and a liberalised import window for spare parts decoupled from the whole-vehicle age cap. Without these accompanying measures, the age-limit provision risks becoming a point of failure rather than a point of progress.

Beyond these implementation considerations, the 2026 ELV Policy carries strategic significance that extends well beyond waste management. Nigeria spends an estimated US$7–8 billion annually on vehicle imports, roughly 80 percent of which flows toward used cars. Even a partial shift toward domestic material recovery, remanufacturing, and second-life parts supply chains would

reduce import dependence, create backward linkages into the steel, aluminium, and plastics industries, and generate green employment at scale. The policy's projected ₦150 billion in annual economic value unlocked is achievable, but only if the system is designed with the supply chains, not just the regulations, to support it. Furthermore, as the global automotive sector accelerates toward electrification, Nigeria's ELV framework positions itself as foundation infrastructure for a future it has not yet fully contended with such as battery recovery, critical mineral recycling, and the management of electronic automotive waste. Getting the ELV system right now means getting ahead of a far more complex challenge to come.

Ultimately, the 2026 ELV Policy will be judged not by the elegance of its regulatory design but by three outcomes that are visible and measurable: whether abandoned vehicles decrease, whether informal dismantlers gain safer and more economically viable livelihoods, and whether the materials recovered from Nigeria's end-of-life vehicles begin to flow back into its domestic industries. These are practical tests, and they are harder to pass than policy declarations suggest. But they are the right tests. Nigeria has an opportunity, rare in the lifecycle of any regulatory intervention, to build a system that serves its economy and environment simultaneously, and that does so by working with the structures already in place rather than against them. Whether 2026 becomes a genuine inflection point or simply another well-intentioned policy milestone will depend on the quality of execution, the honesty of stakeholder engagement, and the political will to sequence reform in line with Nigeria's realities rather than other countries' achievements.