THE PRACTICAL POLITICS OF

Lead recycling and pollution in Nigeria

Nigeria's lead battery economy is a backbone of electricity access, transport and jobs, but unsafe recycling poisons workers and communities. Laws exist but enforcement is weakened by the interests that benefit from cheap recycling operations. A shift to safe recycling requires a politically attractive bargain that protects livelihoods, rewards compliant firms and gives influential actors reasons to sustain enforcement. International buyers must also take responsibility for conditions under which their lead is produced.

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Product 7 • November 2026

Summary insights

- **Unsafe recycling reflects how costs and benefits are distributed.** Factory owners earn profits, governments gain investment and revenue, and international buyers obtain cheaper lead. Workers and residents bear health costs but have limited influence. Children face lasting damage to their learning and development.
- **Enforcement is a political problem as well as a capacity problem.** Regulators lack resources and enforcement responsibilities overlap. But closures followed by rapid reopenings show that authorities can act under pressure. Sustained action is harder when powerful interests favour continued production.
- **The market currently supports a scrap-price mechanism that rewards unsafe operators.** Recyclers who avoid spending on pollution controls and worker protection can pay collectors more for used batteries. Cleaner plants struggle to obtain supplies. Investing in better equipment will achieve little unless compliant firms can compete commercially.
- **Dependence on factory jobs weakens the demand for change.** Workers and residents want safer operations but without losing their livelihoods. A reform strategy that connects health protection with cleaner investment and employment could unite communities, compliant businesses and political leaders.
- **International supply chains dilute responsibility but offer potential leverage.** Traders and manufacturers rely on audits and assurances while leaving enforcement to Nigeria. Making purchases conditional on independently verified standards would give buyers a commercial reason to support compliance.
- **Lasting reform needs sustained Nigerian political backing.** Investigations and sporadic international attention can prompt sudden action, but effects quickly fade. Reformers need a coalition with enough influence – and enough to be gained from safer recycling – to keep enforcement working and so shift the way the incentives work.

Summary propositions

1. Consolidate collection to break the scrap-price mechanism that favours unsafe operators.
2. Pair enforcement with the clean jobs residents want.
3. Extend the burden of proof to buyers and traders.
4. Replace pre-announced audits with unannounced independent inspections.
5. Decouple enforcement from outcry by pre-committing to measurable, transparent triggers.

I. THE PROBLEM

The world's attention on batteries is fixed on lithium, but for much of the global 'poor' the more consequential battery is lead-acid.[1] Across sub-Saharan Africa, hundreds of millions of people are closing the electricity gap with off-grid solar systems that depend on battery storage to provide power beyond daylight hours. This storage overwhelmingly means lead-acid, which is far cheaper up front than lithium and almost entirely recyclable. Roughly 70% of the off-grid solar market runs on it, and in the unregulated segment that most poor households buy from, the share approaches 95%.[2] With the World Bank and African Development Bank's Mission 300 initiative to connect 300m people to electricity in Africa by 2030, including by deploying mini-grids and standalone solar solutions, lead-acid batteries and the recycling they require will be part of African life for a long time to come.[3]

That creates a paradox at the centre of the green transition. The expansion of off-grid solar, rightly celebrated as a route to cleaner and more available electricity, is also creating a river of lead waste. One recent estimate suggests off-grid solar in sub-Saharan Africa generates between 250,000 and 1.5m tonnes of lead-acid battery waste each year, equivalent to somewhere between 13–47% of the region's total.[4] Recycling all that waste can be done safely – but doing so is expensive.

Off-grid solar is only part of the story. Lead is essential to car batteries, and most of it now comes from recycling old ones. The auto industry presents this as an infinitely sustainable, green process. Done cleanly, it can be: lead can be melted and reused repeatedly with minimal pollution, and some European recyclers are reportedly spotless. But clean recycling requires expensive technology. Where that investment is absent, recycling is an incredibly dangerous industrial activity.[5] Additionally, in contexts where environmental regulation is weak and margins are tight (eg Ogijo, Nigeria), the market rewards cheaper forms of recycling that expose workers and nearby communities to lead.

The World Health Organization is clear that no level of lead in the body is safe. Lead poisoning worldwide is estimated to cause more deaths each year than malaria and HIV/AIDS combined; it causes seizures, strokes, blindness and lifelong intellectual disabilities. It is a major contributor to cardiovascular death in adults. Children are especially vulnerable, because even low levels impair learning, behaviour and development.[6]

Research confirms that battery recycling is a documented exposure pathway. Across a 17-country study of low- and middle-income countries, informal lead-acid-battery recycling was the single largest documented source of lead-contaminated sites, and roughly one in ten schools sat within five kilometres of a documented contaminated site.[7] A 2026 systematic review of lead exposure across Nigeria found blood-lead levels at or above international thresholds in 70–100% of tested battery technicians, auto mechanics and other artisans, with mean levels ranging from 9 to 65 µg/dL. The same review traced extreme lead contamination in cow liver in Enugu State to the indiscriminate disposal of lead-acid batteries, evidence that the harm from informal recycling reaches beyond the smelter fence into the food chain.[8]

Ogijo, a town on the Lagos–Ogun border, has more lead recycling factories than anywhere else in Africa, a cluster of eight smelters that anchors the town's small economy.[9] Ogun markets itself as Nigeria's industrial gateway, and these industrial plants – among them True Metals and Everest Metal – sit on the main road near homes, schools and farms. More than 20,000 people live within 1.6km of the factories, and residents 100–500 metres from the gates have tested positive for lead poisoning. The recycling itself remains crude. Workers known as 'breakers' split open used batteries with machetes and axes, drain the acid, and feed the lead into furnaces, often handling molten metal in torn gloves while fumes drift over the neighbourhood.[10]

Residents have complained for years of headaches, stomach pain, fatigue, memory loss, seizures and developmental delays in children – all consistent with lead poisoning. Of 70 volunteers in Ogijo who gave blood for testing, seven in ten had harmful blood-lead levels. Every tested factory worker was poisoned. Eight of 14 tested children were above the WHO action threshold, some far above it. Soil and dust readings reached up to 186 times hazardous levels, with one school at more than

1,900ppm. That is roughly 20 times the level recorded at the notorious site in Vernon, California.[11] Volunteers who did not live near the factories had practically no lead in their blood, which points the finger at the smelters rather than at background sources such as old paint or pipes.[12]

Ogijo fits a wider Nigerian pattern of severe lead exposure. Some of the worst recorded cases include the 2010 Zamfara outbreak, where lead contamination from artisanal gold processing killed hundreds of children and produced extraordinarily high soil and blood-lead levels.[13] Even though this case of lead poisoning was driven by gold mining rather than battery recycling, it established the toxicological stakes and a precedent showing that Nigerian authorities can mount a large-scale enforcement operation when a crisis becomes too visible to ignore.[14]

The question is: why does unsafe lead-acid battery recycling persist in Nigeria despite formal regulation, and what would it take to make enforcement stick?

There is, of course, the standard state-capacity argument for why this happens: a poor state saddled with laws it struggles to enforce, too few inspectors, too little lab capacity, too little money. This would suggest lead poisoning persists because enforcement efforts are simply too weak to bite. However, recent history shows that Nigeria can shut down plants when it chooses to. It closed nine in September 2025 after receiving test results, only to let them reopen days later after the plants' owners met regulators in Abuja. This suggests the will to act is as important a factor as the capacity to act, and that political will is concerned with other factors beyond the harm itself.[15]

Looking closely at the key players, their power, and what they stand to gain sheds further light on the situation.[16] It shows that enforcement remains weak because the status quo suits the actors with the most power. Ogijo's smelters sit within a complex global system that ties together foreign-owned firms looking to lower costs, a state government competing for investment and jobs, local authorities in search of revenue and employment, and federal regulators trying to keep industry running. Despite the well-documented hazards, each of these actors gains something from keeping the factories open. The costs of the poisoning, meanwhile, fall almost entirely on workers and nearby residents, who hold little bargaining power.

The distribution of power in this system determines when the law is applied and when it is set aside. On this reading, the September closures and swift reopenings are a story of a state acting as the underlying system dictates – enforcing under the glare of global attention and relenting once owners push back. Most closure campaigns are temporary. Even so, a plant that is shut for a month loses money, as do the investors behind it. Repeated closures therefore put real pressure on owners and show them that polluting comes with a business risk.

Under-enforcement in the Nigerian context is best understood as the product of both state-capacity constraints and the political reality in which regulators operate. Nigeria does face genuine capacity limitations. Regulation is split across several ministries and agencies while inspection and laboratory capacity is uneven. Used batteries are collected through an informal network that stretches across the country and is hard to police, although the recycling takes place in a small number of formal plants that regulators know. Exposure is closely tied to poverty and economic vulnerability.

But capacity alone does not explain why enforcement is so inconsistent. The deeper problem lies in a political and economic arrangement that gives powerful actors little reason to use the capacity that does exist. In some countries where lead battery recycling has been a problem, regulators are not the only source of discipline – residents have sued plants and won compensation.[17] The cost of such awards gives operators a strong reason to clean up. Liability of this kind works because it places the cost of harm on the polluter, and leaves the decision to act with the people who were harmed.

Effective reform needs strong standards and enforcement, alongside a credible threat that polluters will pay for the damage they cause. It also requires lead poisoning and its elimination to become politically and electorally salient, so that the status quo shifts away from tolerating lead pollution.[18]

II. THE PLAYERS

The key players are part of a system that has both domestic and transnational dimensions.

The domestic system: recyclers are dominated by a small number of large, low-standard factories. Many have ties to India, China and Lebanon alongside domestic owners.[19] For state and local authorities, these plants mean investment, export earnings and jobs in areas with few alternatives. That dependence is not hidden. For example, when Ogun's environment commissioner finally issued a relocation ultimatum, he framed it as a line the state had previously declined to cross, acting 'no matter their contribution to the state's economy'.[20]

The transnational system: buyers went abroad as the US and Canada tightened lead rules over three decades, and Nigeria became a fast-growing source. One chain has been documented as running from Ogijo smelters (True Metals and others), through the commodities trader Trafigura to the Port of Baltimore, on to battery makers such as East Penn, and into batteries for Ford, General Motors and Tesla.[21] No single actor owns responsibility for smelter conditions: manufacturers rely on traders' assurances; traders rely on audits; auditors issue recommendations rather than demands; and all can point to the government as the party responsible for enforcing Nigerian law.[22]

The key players and their interests include:

Federal political authorities (the presidency, finance and budget, health)

These are the players who set the macro conditions that frame the Ogijo problem. They include President Tinubu, who announced the removal of Nigeria's fuel subsidy in May 2023, a national fiscal decision that raised generator-running costs and pushed households toward solar-plus-battery systems (feeding lead-acid demand).[23] They also choose how to spend the health budget. Nigeria has never run systematic blood-lead testing in Ogijo, in part because this competes for money with more politically salient priorities such as tertiary hospitals and vertical programmes for specific diseases such as malaria.[24] This level of the state responds to nationwide electoral and fiscal pressure, not to the specific fate of a cluster of factories. As a result, subsidy reform and health spending might move on a different logic, and a different timescale, than lead enforcement.

Federal and state sector regulators

The National Environmental Standards and Regulations Enforcement Agency (NESREA), the Ogun State Environmental Protection Agency (OGEPA), and federal and state ministries of health, labour, and environment govern recyclers directly. NESREA sets and enforces national battery regulations, and OGEPA generally acts alongside it. OGEPA has led inspection teams into the Ogijo plants, and issued 72-hour shutdown orders in coordination with NESREA and other state ministries. Nine plants were closed in September 2025 and reopened within days after a 'very, very, very fruitful' meeting with regulators in Abuja. They were sealed again after a media exposé attracted wider attention.[25]

This situation reflects the procedures regulators must follow. Like regulators in most countries, NESREA and OGEPA are underfunded and bound by fixed steps. They must document problems, agree improvement plans and issue warnings before they can impose fines or close a plant. Plants that carry out upgrades are usually allowed to restart.[26] Political pressure from outside the agencies also appears to have shaped the reopenings, as lobbying does in regulatory systems everywhere. Ogun State later suspended three environmental consultancy firms over failures that had allowed pollution to continue. The regulators had the authority and knowledge to act, and they used it. How far they could push depended on the political pressure around them.[27]

State and local political authorities

The Ogun State government and local councils carry the jobs-and-revenue dependence most directly. In Nigeria's federal system, that dependence concentrates in one office: the state governor. Governors are directly elected executives who control their state's environmental agencies (in Ogun, OGEPA and the state environment ministry answer to the governor, not to Abuja), preside over the

State Executive Council, and hold strong sway over both the State House of Assembly and the local government councils, whose funds pass through the state.[28] They also depend on internally generated revenue and compete openly to attract and keep industry. This makes the governor both the actor most able to order a hard closure, and the official who would lose the most from it.

Ogun markets itself as Nigeria's industrial gateway,[29] and the recyclers represent investment, export earnings and local employment. The state was correspondingly the slowest tier to move to hard closure, defaulting to softer measures such as audits, threats to suspend lead exports, and relocation deadlines (that can slip later on).[30] When the state's environment commissioner, a gubernatorial appointee, finally issued a relocation ultimatum, he framed it as acting 'no matter their contribution to the state's economy'. His phrasing concedes the plants' economic contribution had until then been preventing action.[31] Much of the state's response has taken the form of announcements: shutdown orders, export-suspension calls, a promised health and environmental audit, with the delivered follow-through consistently weaker than the initial headline.[32]

The traditional ruler of Ogijo wants the factories gone and has said so, but holds largely ceremonial power; real authority sits in Abuja and Abeokuta. The gap between local legitimacy and actual power is part of why community pressure has always struggled to translate into action.[33]

Plant owners

Plant owners want to operate at the lowest cost and have shown they can outlast enforcement by promising upgrades, gaming audits and waiting for attention to fade. Their revealed strategy is delay more than comply.[34] The Ogijo recyclers are dominated by a small number of large, low-standard firms, many foreign-owned, with reported ownership ties to India, China, and Lebanon alongside some domestic owners.[35]

The most prominent are True Metals and Everest Metal. Other named operators targeted in the 2025 enforcement include Phoenix Steel Mills, African Non-Ferrous Industries, Metalworld Recycling, Metal Manufacturing Nigeria, and BPL Nigeria. True Metals is an established exporter. It has shipped recycled lead to Spain, South Korea, India and the US, with buyers including the trader Trafigura.[36] Beyond corporate names and trade records, the individual beneficial owners, their wider business interests, and their political and civic networks do not seem to be documented in public reporting. Enforcement in Ogijo is a power struggle between regulators, plant owners and the workers. Even a temporary shutdown is expensive for the plant owners and the workers, who earn nothing.[37]

Battery collectors

Battery collectors move used batteries from households, mechanics and repair shops and sell them on to the recyclers. The smallest buyers are door-to-door scrap dealers and battery retailers who exchange old batteries for new ones. Larger collectors buy from both, drain the acid and deliver 7–20 tonnes at a time to the plants. Some recyclers lend collectors money to buy stock.

Starich, a subsidiary of the Chinese firm RSIN group,[38] runs collection sites across Nigeria, shipping what it buys to its plant in Aba. It takes in around 40 tonnes a day when it is buying, and collectors in Lagos say scrap prices rise by ₦30–50 per kilo while Starich is in the market.[39] Collectors usually sell to the highest bidder, which tends to be the plant spending least on pollution control. Many of them drain battery acid into the ground or sell it as a cleaning agent. Breaking batteries open also exposes them to lead dust. And because there are so many, collectors are hard to regulate. They will sell to whichever plants are open and paying.

Traders, downstream manufacturers and battery makers

Traders, downstream manufacturers and battery makers want a steady supply at market prices. They expect it to meet the London Metal Exchange (LME) grade of at least 99.97% purity.[40] Trading houses such as Trafigura make money by getting such lead to buyers at the right time and place.[41] East Penn, the second-largest car battery maker in the US, has said that lead shortages sometimes push it to rely on brokers, and when that happens it must take their word that the lead is clean.[42]

Since buyers pay market prices regardless of the source, they gain little from dirty smelting. Yet they are also the most responsive pressure point: East Penn dropped Nigerian lead after a few questions.[43] The cost advantage sits further up the chain, where crude smelters can pay more for dead batteries than clean ones can. Green Recycling, which visiting experts judged the best-equipped recycler in Nigeria, had to offer less for scrap batteries to cover its equipment costs. It shut in 2025.

Workers, residents and other businesses

Residents and workers are not one bloc. Workers depend on the wages and face the highest exposure, nearby residents suffer the pollution without the income, and in a low-opportunity economy both are wary of factory closure. Their dominant demand has been 'make it safe,' not 'shut it down.' That split weakens the coalition that might otherwise force change.[44]

Parents, school owners and other businesses in the town occupy an ambiguous position, neither clearly inside the political equilibrium described nor able to break it. Parents and children carry the exposure that matters most, since the harm falls hardest on children and the developmental damage is irreversible. Eight of 14 tested children in Ogijo were above the WHO action threshold, and one school playground registered more than 1,900ppm of lead.[45] Schools surround the factories alongside homes and farms, placing children in the highest-exposure zone for hours each day.[46] The proximity of schools to contaminated sites is a pattern across low- and middle-income countries, with lead exposure near such sites linked to measurably worse learning outcomes.

Yet parents are also the least organised of the affected groups. They are dispersed across the community rather than concentrated in a workplace. Many depend directly or indirectly on the plants for income. And, crucially, most had no way of knowing their children were being poisoned, because no systematic blood-lead testing existed in Ogijo until a media exposé catalysed a response. Invisible harm to a dispersed group produces little collective pressure, which is part of why years of complaint translated so slowly into action.

Other businesses in the town, from farms with soil and produce absorbing lead fallout, to traders and shops dependent on local spending, bear diffuse costs without the concentrated stake that would make them natural opponents of the plants. Some benefit indirectly from the wages the factories inject into the local economy; all quietly lose from the increasing contamination. Because these costs and benefits are spread thinly and pull in different directions, this group has not coalesced into either a pro- or anti-plant bloc. The net effect across parents, schools and other businesses is the same fragmentation that weakens the residents-and-workers coalition: the people with the most to gain from clean operation are precisely those least able to organise around it.

III. THE RULES OF THE GAME

Formal rules

The National Environmental (Battery Control) Regulations 2024, issued under the NESREA Act of 2007, require the safe handling and recycling of used lead-acid batteries, twice-yearly blood testing for workers, protective equipment, emissions and fume controls, wastewater and acid treatment, environmentally sound disposal of slag and other waste, and periodic environmental audits of recycling facilities.[47] They also require recyclers to register with the regulator, maintain pollution-control systems and records, and comply with detailed rules governing the storage, breaking and processing of used batteries. NESREA, in turn, has the power to inspect, issue enforcement notices and seal non-compliant facilities.

Formally, Ogijo is tightly governed. In practice, an informal set of rules has prevailed.

Informal rules

Rule 1. Naming and shaming works in the face of public outcry

Investigations in Ogijo show that contamination was present for years while nothing happened. It was only after a media exposé and public outcry that the Ministry of Labour sealed True Metals, NESREA and Ogun State closed several plants, and the state called for a halt to lead-ingot exports.[48]

Carmakers and battery makers were warned as far back as 2005, when a certification scheme called Green Lead proposed rewarding factories that recycled cleanly. It collapsed after manufacturers declined to sign on. A later, Honda-backed pilot in India and an attempt to set an industry standard through ASTM International in 2012 failed the same way. The ASTM measure was voted down at a meeting where the largest battery maker reportedly sent 50 of its own representatives to ensure it failed. Without visibility, the actors who benefit from the status quo face little pressure to change it. Enforcement arrives only when attention makes inaction more costly than action.[49]

Rule 2. Announcements substitute for follow-through

Closures, export suspensions and testing plans are declared with force, but the delivered outcomes are consistently weaker than the headlines. Nine plants were sealed in September 2025; within days they were running again.[50] True Metals was given a two-to-three-year window to adopt cleaner technology, rather than forced to make immediate fixes as the regulator had described in public.

Rule 3. Audits are a type of theatre

Inspections are pre-announced, so plants prepare for them. Workers are sent home, fresh protective gear appears for the day, and those present are coached on what to say. Consultants issue recommendations rather than demands, and firms carry out the cheap fixes while skipping the costly ones. Ogun State's suspension of three environmental consultancy firms for their role in regulatory failures is a measure of how compromised this check has become.[51] The same dynamic is visible in other certified-but-unsafe industries: in Bangladesh's ship-recycling sector, yards holding 'green' Hong Kong Convention certificates continue to record fatal accidents, and the consultants who advised them have reportedly sat on the committees investigating those same failures.[52]

Rule 4. The clean operator loses

Beneath all this sits a single economic rule: because clean and dirty recyclers compete for the same scrap batteries, and clean recycling costs more, the dirty operator can always pay more for feedstock. A recycler that invested in clean technology (Green Recycling) was outbid until it had nothing to process and shut down; its manager described operating cleanly as a bad investment.[53] Any reform that leaves feedstock economics untouched also leaves the incentive to pollute untouched.

IV. THE STATE OF PLAY

NESREA has a dedicated battery regulation, and recent enforcement actions show that authorities have the capacity to inspect, sanction and close facilities.[54] The problem is weak implementation and poor incentives for compliance. This increasingly matters because demand for lead-acid batteries is rising. The removal of the fuel subsidy in 2023 pushed households and businesses towards solar power, which uses lead-acid storage. More batteries in use today means more scrap tomorrow, and more feedstock flowing into the same collection networks that reward the dirtiest operators.

The economics explain why enforcement keeps slipping. Batteries are collected largely through informal networks and then sold to industrial recyclers. These networks function effectively, but they prioritise price over environmental concerns. Low-standard recyclers can afford to pay more for batteries because they pay less for pollution control, worker protection and waste treatment. A clean plant is likely to lose access to feedstock unless regulation either raises the cost of unsafe recycling, or better rewards safer operators. Although many facilities are formally registered, unsafe practices

remain common, including manual or semi-mechanical battery breaking, uncontrolled disposal of electrolytes, inadequate dust and fume controls, and poor handling of contaminated slag.[55]

In September 2025, NESREA reported sealing nine recycling facilities in Ogijo for violations including manual battery breaking, inadequate fume treatment, poor slag management, missing worker blood testing and non-compliance with extended producer responsibility requirements.[56] In November 2025, the agency and Ogun State reported further violations, including untreated acid discharge, uncontrolled lead dust, open slag heaps and inadequate worker health monitoring.[57]

The response has moved beyond plant-level enforcement. In August 2026, Ogun State began evacuating large quantities of illegally dumped slag from communities surrounding the recycling facilities. The state said the programme would include contaminated-land restoration and bioremediation, not merely the removal of visible waste.[58] Public reporting documents the beginning of this process, but not its completion. This is important because closing or upgrading a plant does not remove contamination already deposited in soil, dust, drainage channels, farms and residential areas. Historical Nigerian studies and recent worker biomonitoring show that battery-related operations can generate substantial exposure risks.[59] The material-flow evidence also indicates that Nigeria has accumulated very large stocks of used batteries over time, although national quantities remain uncertain because estimates are modelled rather than directly measured.[60]

There are signs that a different path is at least being discussed. A higher-standard, UK-backed recycler has entered the Ogun market, and the Senate has floated relocating the Ogijo facilities away from residential areas.[61] Neither has yet shifted the underlying settlement, but both suggest that an approach that maintains jobs while raising standards is politically imaginable rather than purely aspirational. There is not yet a political vision for turning this possibility into a strategy with compelling 'win-wins' for elites (politicians, factory owners), workers and citizens alike.

The current policy settlement is therefore unstable. Regulators are attempting to move the industry towards automatic battery breakers, cleaner furnaces, improved slag management, worker blood testing and stronger audits. But the state remains reluctant to hurt an industry that provides employment, export revenue and an important source of lead for domestic and international buyers. The result is conditional enforcement: plants are closed when pollution becomes politically visible, but operators are also offered opportunities to upgrade, negotiate and resume production.

Making enforcement stick will require:

- Penalties large enough to eliminate the price advantage of unsafe operators
- Publicly available results for soil, air, water and blood-lead testing
- Independent and unannounced monitoring

Over the longer term and as political conditions allow, it would be important to have:

- A reliable national inventory of batteries, facilities, workers and contaminated sites
- An extended producer responsibility system that finances safe collection and recycling
- Traceability requirements extending from Nigerian recyclers to foreign traders and battery manufacturers. Similar work is already done by institutions like Coalition for Clean Lead[62]
- Ring-fenced funding for remediation and community health surveillance
- Protection for workers and collectors whose livelihoods depend on the existing system

The strategic choice is broader than either allowing the sector to continue as it is or closing it entirely. Abrupt shutdowns without alternative systems for battery collection and employment could drive more activity into informal channels. A more sustainable approach is to keep raising the costs of unsafe recycling while creating the conditions for clean recycling to be profitable. To do this, reformers need a strategy that is not only politically feasible but politically attractive – one which harnesses technical improvement in the service of a more prosperous and healthier state. This could help build and sustain a coalition of interests that can keep up the pressure for lead elimination.

V. OUR PROPOSITIONS

Simply calling for stronger enforcement is unlikely to change the system. Under-enforcement persists because existing incentives make weak implementation rational for many of the actors involved. More promising reforms would alter those incentives by changing the economics of scrap supply, shifting oversight to institutions with the capacity to sustain it, or embedding compliance in routine systems rather than relying on periodic enforcement drives and public pressure.

Enforcement in Ogijo depends too much on outside pressure. When international organisations, journalists or regulators are paying attention, inspections increase. When that attention fades, so does enforcement. The reason is simple: few powerful actors in Nigeria lose anything when the rules are ignored. If enforcement is going to last, someone with political influence has to have a reason to keep it going. That means reformers need to think about what politicians gain from acting. Cleaner lead recycling has to become an issue that can win support from people who matter politically.[63]

There is already something to work with in Ogijo. Residents want factories to pollute less. Firms that follow the rules are hurt by competitors who cut costs by ignoring them. Parents want their children protected from lead exposure. A politician who can respond to those concerns may find that stronger enforcement brings rewards rather than opposition.

There is precedent for this in Nigeria. Between 2010 and 2016, the UK-funded FOSTER programme worked in the oil sector, where powerful interests had also blocked reform. It found Nigerians inside government, business, the media and civil society who wanted change and helped them pursue it.[64] Reform had a better chance when people inside the system had reasons to push for it themselves. Ogijo needs the same kind of political support. Inspections can deal with individual violations, but they will keep fading in and out unless influential Nigerian actors see value in making the rules hold.

From this analysis, five propositions follow.

Proposition 1. Consolidate collection to break the scrap-price mechanism that favours unsafe operators

The main market problem is that unsafe recyclers can often pay more for used batteries than firms operating to higher standards. Safer plants bear the costs of enclosed battery breaking, acid treatment, fume control, worker monitoring and proper slag disposal. Operators who avoid these costs can offer higher prices for scrap. Recent research in West Africa shows that this makes it difficult for higher-standard recyclers to obtain enough used batteries to operate competitively.[65]

A better approach would be to use regulation and enforcement to help channel used batteries towards recyclers that meet minimum environmental and occupational standards. Informal collectors could remain part of the system, but as licensed collection agents who are paid to deliver batteries to approved facilities. Manifests, digital records or other tracing systems like battery passports could be used to track where batteries go. This would preserve livelihoods while removing unsafe smelting and processing from the recycling chain. Research from India found that effective reform depended on integrating itinerant collectors into the formal system while excluding informal smelters from downstream recycling.[66] Evidence from Nigeria's extended producer responsibility system also suggests that formalisation is more likely to work when informal workers are included economically and socially.[67] This is a high-leverage intervention because it targets the incentive structure sustaining unsafe recycling. It may also be easier to defend politically because it supports domestic industry while raising standards, rather than framing reform primarily around plant closures or external pressure.

This approach would take time and significant effort. Lagos State alone has more than 20m people and most battery collection there is informal. Luckily, there is no need to register every collector. Collectors are everywhere, but most lead is smelted in a few large plants that are easy to find. Regulators can focus on these plants and on the big scrap dealers who supply them. They can also target firms that replace batteries in bulk, such as telecom companies and vehicle fleets. At first this

may only shift part of the supply, but that would still help if it meant safer plants got enough batteries to run and unsafe plants could no longer pay as much.

Proposition 2. Pair enforcement with the clean jobs residents want

The local coalition against pollution is divided because plant closure threatens income. Workers depend on wages, residents may depend indirectly on factory spending, and local authorities value investment and employment. Residents therefore often demand safe operation rather than closure.

Enforcement should be paired with a clean-industrial transition:

- Concessional finance or grants for compliant recycling equipment
- Producer-financed support for safe collection
- Worker training and medical monitoring
- Compensation and remediation support for affected households
- Local hiring requirements for upgraded facilities
- Public procurement or licensing preferences for recyclers that meet verified standards
- Court cases that raise the costs of unsafe recycling

The Hinckley project in Ogun State shows that cleaner recycling can be presented as an industrial-development and employment strategy rather than only as an environmental constraint. The project has been described as a planned lead-acid and lithium-ion recycling investment supported through UK-backed industrial-development programmes, although its operating performance should be independently verified rather than assumed from investment announcements.[68]

This proposition also requires a clearer division of institutional responsibility. Federal environmental regulation, state environmental enforcement, labour inspection, public-health surveillance and local-government engagement currently overlap. The joint monitoring committee established by Ogun State in February 2026 is a useful starting point, but it needs a clearly accountable lead agency, defined reporting duties and public disclosure of progress.[69] The Senate resolutions documented in December 2025 called for emergency medical intervention, environmental remediation and temporary relief or relocation support for affected families. They do not, on the evidence available, establish a clear proposal to relocate the factories themselves.[70] Clearly these additional measures need to be paid for, which will require negotiation between government and firms.

Proposition 3. Extend the burden of proof to buyers and traders

Nigerian regulators face limited resources, fragmented authority and strong local pressure to keep factories operating. Downstream traders, importers, battery manufacturers and major corporate buyers often possess greater financial and reputational capacity to demand evidence of compliance. Part of the burden of proof should therefore move outward along the supply chain. Buyers and traders dealing in Nigerian lead should be required to demonstrate:

- the identity and location of the recycling facility
- valid Nigerian environmental permits
- independent verification of pollution controls
- worker blood-lead monitoring
- documented management of slag, acid and other residues
- a traceable chain of custody from battery collection to final sale

This would not replace Nigerian regulation. It would make market access conditional on compliance and give downstream firms a commercial reason to monitor what Nigerian agencies may be unable to monitor continuously. Nigeria's Senate response to the Ogijo crisis explicitly linked local

contamination to international supply chains and called for wider traceability of exported lead.[71] The key design principle is that certification must be independent and buyers must share responsibility with the recycler. A paper audit that allows every actor to rely on someone else's assurance would simply reproduce the current system.

Badly designed buyer rules risk pushing responsible buyers out of Nigeria and Africa, so it is important that this proposition does not simply become a box-ticking exercise. The rules should instead reward buyers who keep sourcing from Nigeria and help recyclers upgrade by a set date. Buyers share responsibility for the plants they buy from, but the recycler is still the polluter and stays liable for the harm it causes. Buyer rules only work if Nigeria also enforces its own standards and puts in place the measures in Propositions 1 and 2.

Proposition 4. Replace pre-announced audits with unannounced, independent inspections

Announced inspections allow facilities to prepare temporarily without changing their underlying operations. When a plant knows an inspection is coming, it can tidy up for the day and carry on as before once the inspectors leave. At True Metals, a worker said that visits by auditors working for the trader Trafigura were announced in advance. Most staff were sent home and those who stayed were given new overalls and coached on what to say.[72]

Nigeria should move to a rotating system of unannounced inspections. Inspectors should take random samples of soil, dust, air and effluent inside plants and in the surrounding community, including near schools. They should speak to workers in private. Plants should not choose or pay the inspectors and should not control the results. Samples should go to accredited laboratories with no commercial tie to the plant. And inspection results should be publicly released.

Where private consultants are used, their work should be commissioned, quality-controlled and published by the regulator rather than treated as a confidential service to the plant. These arrangements support NESREA's inspectors, whose findings carry more weight when the plant has no warning and the laboratory has no stake in the outcome. The aim is to break the unwritten rule that inspections can be managed with preparation and paperwork. Regular unannounced visits would also show over time which plants are upgrading their equipment, rather than merely waiting for attention to fade.

Clearly, new illicit mechanisms giving warnings of unannounced inspections and the inspection regime will need to keep adapting and responding. This is the nature of any effective anti-corruption measure. The aim should be to continuously disrupt attempts to cheat inspection, and so raise the cost of non-compliance.

Proposition 5. Decouple enforcement from outcry by pre-committing to measurable, transparent triggers

The Ogijo experience suggests that enforcement becomes strongest when pollution is made visible by investigative reporting, community anger or international scrutiny. The regulatory system should reduce this dependence on attention by establishing automatic consequences tied to measurable and transparent conditions. The World Health Organization's 2026 PREVENT technical package places source prioritisation, exposure measurement, regulatory enforcement and progress tracking at the centre of lead-poisoning prevention.[73] Nigeria could translate this framework into a published enforcement matrix linking specific breaches to specific actions.

For example:

- Elevated worker blood-lead levels should trigger investigation and corrective action
- Excessive soil, dust, air or effluent contamination should trigger restrictions on operations and mandatory remediation

- Repeated failures should trigger automatic suspension or licence cancellation
- Illegal slag dumping should create direct liability for the facility
- Failure to submit monitoring data should itself constitute a sanctionable offence

The precise thresholds should be set by Nigerian health and environmental authorities and reviewed as evidence improves. The aim is to narrow the discretion that lets violations be settled through informal negotiation. Testing should be done by laboratories independent of the facilities and the results published within a fixed period so workers and residents can see them. Clear public results also make it harder for facilities to stall enforcement by disputing the evidence in court.

Liability considerations are another avenue to consider. Where battery recycling meets the highest standards, plant owners know that poisoned workers and neighbours can take them to court and win compensation. Published test results would also give the people bringing a case much of their evidence. Once owners understand that risk, preventing pollution becomes the cheapest option. In Africa, closures of polluting plants in Kenya, Ghana, the DRC and Nigeria have not so far led to compensation for victims.[74] But Kenya's Owino Uhuru case shows that this might be starting to change. A court awarded residents 1.3bn shillings in compensation and 700m shillings for cleanup against a battery smelter and the state bodies that failed to control it. The Supreme Court upheld the award in 2024, although payment is still being pursued.[75] Funders and lead-elimination groups could support public-interest lawyers and the medical evidence an Ogijo case would need. A court case does not need a regulator's or governor's attention or permission, so it keeps working even when public attention moves on.

Taken together, these five propositions move the focus away from repeated calls for stronger enforcement. Instead, they aim to make safe recycling commercially viable, easier to monitor and less dependent on occasional government intervention. The distinction is between short-term enforcement campaigns and reforms that change the incentives and institutions shaping lead recycling over the long term.

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Preferred citation: Akeredolu, F. (2026) 'Lead recycling and pollution in Nigeria', 7, Oxford: Open Political Economy Analysis Programme.

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Acknowledgements

Open PEA would like to thank the following reviewers for their critical feedback during the preparation of this product: Mikey Jarrell at the University of California San Diego, Nathan Lazarus at MIT and Andreas Manhart at Öko-Institut.

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