



International Economic Law Practicum

**AN ANALYSIS OF THE LEGAL VIABILITY OF ESTABLISHMENT OF A
LITHIUM-ION BATTERY RECYCLING PLANT IN KENYA**

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Table of Contents

Introduction.....	3
1. Environmental and Social Sustainability in the Sector.	4
1.1 Local Legal and Policy Considerations.....	4
A. Local Legal Framework.....	4
B. Local Opportunities	7
C. Local Risks.....	8
1.2 Regional Legal and Policy Considerations	11
A. Regional Legal Framework	11
B. Regional Opportunities	12
C. Regional Risks	13
1.3 International Aspects.....	13
A. International Legal Framework	13
B. International Opportunities	14
C. International Risks	15
Recommendations	16
2. Financial and Legal Considerations.....	16
2.1 Local Taxation and Financial Obligations	17
A. Income Tax	17
B. Investment Deductions.....	17
C. Registration and Compliance.....	18
D. Value Added Tax (VAT).....	18
E. Special Economic Zone (SEZ) Benefits	19
F. The Eco Levy and Its Impact on Recycling Operations.....	20
2.2 East African Community (EAC) Considerations	21
3. Trade and Investment Considerations.....	21
3.1 East African Community Framework	22
A. Adherence to the EAC Rules of Origin (2015).....	22
B. Meeting the required product quality.....	23
3.2 EAC Risks	23
3.3 Opportunities within the African Continental Free Trade Area.....	24
3.3 COMESA-EAC-SADC Tripartite Free Trade Area (TFTA).....	25
3.4 General Investment Opportunities and Risks.....	26

b. Bilateral and Multilateral Investment Treaties	26
4. Comparative Study of International Battery Recycling Regulations.....	28
4.1 Large market, Low development Industries.....	28
4.2 Large market, High Development Industries	30
4.3 Findings.....	32
Finding 1: Leverage Early Regulatory Incentives	32
Finding 2: Mitigate the Complexity of Recycling Processes	32
Finding 3: Prepare for a Multifaceted Regulatory Environment.....	32
Conclusion	33
List of References	34

Introduction

The establishment of a lithium-ion battery recycling facility in Kenya presents a valuable opportunity to advance environmental sustainability, foster circular economy initiatives, and expand e-mobility. However, realizing these benefits is not automatic and requires careful integration into the local economy. This includes creating robust local and regional supply chains, promoting employment and skills development, and reducing reliance on imported raw materials.

Consequently, effective regulatory frameworks are essential to ensure sustainability and proper alignment with the broader economy. This memorandum provides a comprehensive analysis of the legal considerations and regulatory compliance requirements for setting up a lithium-ion battery recycling plant in Kenya. It also examines the necessary policy interventions to support the growth of this emerging sector while addressing environmental and economic goals.

The discussion is structured into four key sections, each addressing a critical aspect of the project's legal feasibility and sustainability. The first section examines local, regional, and international legal environmental and social sustainability frameworks for a lithium-ion battery recycling facility in Kenya. It examines Kenya's legal frameworks, including environmental impact assessments, hazardous waste licensing, and occupational health laws, and contextualizes them within recent jurisprudence such as the *Owino Uhuru Residents v Metal Refinery (EPZ) Ltd* (2024) and *Save Lamu and 5 Others v NEMA & Another* (2019) decisions. It also considers regional environmental policies under the EAC, and human rights standards from the African Charter, and Kenya's obligations under the Basel Convention.

The second section examines the fiscal and regulatory incentives available to the investor, including investment deductions, VAT, and corporate income tax obligations under Kenya's tax laws. It highlights the advantages of locating the facility within a Special Economic Zone (SEZ) such as Naivasha, while also addressing compliance with Extended Producer Responsibility (EPR) regulations. Although the proposed Eco Levy under the Finance Bill 2024 was not enacted, the section reflects ongoing discussions about its potential future reintroduction. In addition, the section addresses cross-border trade benefits under the EAC Customs Union-such as the Common External Tariff and Rules of Origin.

The third section focuses on Kenya's regional and international trade obligations and opportunities under the East African Community (EAC), the African Continental Free Trade Area (AfCFTA), the Tripartite Free Trade Area (TFTA) and the WTO Agreement on Trade Investment Related Measures (TRIMS). It evaluates how these agreements support regional trade in recycled battery products and materials, while also exploring investment protections under bilateral and multilateral instruments. It further addresses political economic risks such as non-tariff barriers, weak regulatory enforcement, and the absence of a BIT with Australia-the investor's country of origin.

The final section provides insights from countries with advanced lithium-ion battery recycling frameworks, such as Australia and the United States. It examines policy incentives, regulatory

models, and industry best practices, drawing lessons that could inform Kenya's approach to hazardous waste management and circular economy policies.

Through this structured approach, the memorandum seeks to provide a clear roadmap for legal compliance, investment strategies, and sustainability considerations for stakeholders interested in establishing and operating a lithium-ion battery recycling facility in Kenya

1. Environmental and Social Sustainability in the Sector.

A lithium-ion battery recycling plant presents both a crucial opportunity and a significant challenge for Kenya's environmental and social sustainability efforts. On one hand, it supports clean energy transitions, reduces e-waste pollution, and creates economic opportunities such as local jobs, skills development, and reduced reliance on imported raw materials. On the other hand, improper waste handling poses severe environmental risks, occupational hazards, and potential legal liabilities. Without strict regulatory compliance and proactive community engagement, such a facility could contribute to toxic emissions, soil and water contamination, and worker safety violations. This section examines the regulatory landscape, risks, and opportunities in ensuring that the plant operates sustainably to avoid public opposition, lawsuits and financial penalties by adhering to environmental and socio-legal standards.

1.1 Local Legal and Policy Considerations

Kenya's regulatory framework is structured to ensure hazardous waste management including in lithium-ion battery recycling supports environmental and social sustainability. The Environmental Management and Co-ordination Act, 1999 and related regulations require a thorough evaluation of potential impacts, with public engagement being a key component. The following section will explore the Environmental Impact Assessment process, licensing requirements, and relevant case studies.

A. Local Legal Framework

a. Environmental Impact Assessment (EIA) and Approval Process

The requirement for an **Environmental Impact Assessment (EIA)** is highlighted in the **EMCA** and expanded upon in the **Revised Environmental (Impact Assessment and Audit) Regulations, 2003**. Any project with a potential significant impact on the environment, such as a battery recycling plant, must undergo a full EIA process before implementation. The assessment must detail the project's environmental, social, and health implications while proposing mitigation strategies.¹

The EIA process involves multiple steps to ensure sustainable development, with additional requirements introduced by the Sustainable Waste Management Act, 2022, for facilities handling hazardous waste. It begins with the submission of a project report, where the

¹ Environment Management and Co-ordination Act (EMCA), 1999, Section 58

proponent outlines the potential environmental effects of the proposed project. The Constitution of Kenya and the EMCA entrench Public participation as a critical component in project conceptualization, requiring engagement with stakeholders, including local communities, to gather diverse inputs and address concerns. The significance of this step was underscored in *Save Lamu and 5 others v. National Environmental Management Authority & another* (2019), where the tribunal nullified an EIA license due to inadequate public engagement, highlighting the necessity of meaningful consultation under the Environmental Impact Assessment & Audit Regulations.² For project proponents, effective public participation requires early and proactive engagement with stakeholders. This means initiating consultations at the earliest stages of project planning to identify and address community concerns before critical decisions are made. It also demands inclusivity, ensuring that all affected parties, including local communities, civil society organizations, and relevant government agencies, have an opportunity to voice their perspectives.³

Transparency is equally important, requiring clear, accessible, and timely communication about the project's potential impacts and benefits. This openness builds trust and fosters informed dialogue, reducing the likelihood of future conflict. Responsiveness further strengthens this relationship, as it demonstrates that stakeholder input has genuinely influenced project decisions, with feedback reflected in both project design and mitigation measures.⁴

In practice, this approach involves publicizing the project through posters in strategic locations, placing notices in widely circulated newspapers, and making announcements on local radio stations in both official and local languages to reach a diverse audience. Project proponents should also hold at least three public meetings with affected communities to discuss potential impacts and gather feedback. These meetings should be scheduled at convenient times and locations, with notices issued at least one week in advance to allow for adequate preparation.⁵

Additionally, appointing a qualified coordinator to document both oral and written comments during public consultations is essential, as these records form a critical part of the submission to the National Environment Management Authority (NEMA). Adhering to these practices not only fulfills legal requirements under the EIA and Audit Regulations but also builds long-term community trust, reducing the risk of opposition, legal disputes, and project delays.⁶

Following public participation, the National Environment Management Authority (NEMA) reviews the project report alongside public feedback to determine whether to grant an EIA license. For facilities handling hazardous waste, the Sustainable Waste Management Act, 2022, imposes an additional obligation to develop an integrated waste management plan as part of the EIA process. Moreover, the EIA and Audit regulations require periodic environmental

² [Save Lamu & 5 others v National Environmental Management Authority \(Nema\) & another \[2019\] KEELC 4739 \(KLR\)](#)

³ Natural Justice, *A Guide on Public Participation in the Environmental Impact Assessment Study Process in Kenya* (2022) https://naturaljustice.org/wp-content/uploads/2022/10/Guide-to-Participation-in-EIA-Process_2022-1.pdf

⁴ Ibid

⁵ Ibid

⁶ Ibid

audits to ensure ongoing compliance with approved environmental standards, reinforcing accountability and sustainability in project implementation.

Failure to comply with EIA regulations can result in legal penalties, including revocation of licenses, substantial fines, and possible criminal prosecution.⁷

b. Licensing Requirements for Hazardous Waste Management

A lithium-ion battery recycling facility would be classified as a hazardous waste management operation and must therefore obtain various licenses to ensure compliance with national and international environmental standards. The **Sustainable Waste Management Act, 2022**, and the **Waste Management Regulations, 2006**, outline these requirements. The key licenses required include:

1. **Hazardous Waste Management License** – Issued by NEMA under the Sustainable Waste Management Act, this license authorizes the facility to collect, transport, store, and process hazardous waste. The law mandates that recycling plants implement strict tracking mechanisms for hazardous waste disposal to prevent environmental contamination.
2. **Air Emissions License** – Under EMCA, any industrial plant emitting pollutants into the air must secure an air emissions permit, ensuring compliance with prescribed air quality standards. Given the toxic fumes involved in lithium-ion battery processing, this requirement is critical for environmental protection.⁸
3. **The Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024** require companies that manufacture, import, or distribute lithium-ion batteries to establish take-back schemes and end-of-life management programs. Producers must either operate their own recycling initiatives or join a Producer Responsibility Organization (PRO) to manage waste collection and disposal. The rationale for this is that manufacturers remain accountable for the entire lifecycle of their products.
4. **E-Waste Management Compliance** – The **E-Waste Management Guidelines, 2010**, provide additional directives specific to electronic waste recycling. Lithium-ion battery recyclers must adhere to these guidelines, which mandate safe handling procedures, worker protection measures, and environmentally sound disposal techniques.

Violations of these licensing provisions attract significant penalties, including fines, facility shutdowns, and potential criminal liability under the Sustainable Waste Management Act, 2022. However, locating the facility within a Special Economic Zone (SEZ) or Export Processing Zone (EPZ) can reduce the financial burden of compliance by offering tax holidays, import duty exemptions, and expedited regulatory approvals. This not only lowers the operational costs associated with waste management but also provides a supportive

⁷ EMCA, Section 138

⁸ EMCA, Section 80

infrastructure for efficient resource use, aligning the facility's economic goals with its environmental responsibilities.

B. Local Opportunities

The **Draft National E-Mobility Policy (March 2024)** offers crucial opportunities for developing a lithium-ion battery recycling industry in Kenya. By promoting a transition from fossil-fuel-powered transport to electric mobility (e-mobility), the policy supports sustainable waste management and a circular economy.

A key opportunity arises from the increasing demand for lithium-ion batteries, driven by Kenya's goal to have at least 5% of registered vehicles electric by 2025 and a long-term shift to zero-emission vehicles. This transition ensures a steady supply of end-of-life batteries, necessitating a robust recycling system. Additionally, the government encourages local manufacturing, assembly, and recycling of EV components, providing incentives such as fast-tracked approvals, regulatory support, and public-private partnerships.⁹

The policy further strengthens the Sustainable Waste Management (Extended Producer Responsibility) Regulations, 2024, requiring EV manufacturers and battery importers to implement battery take-back programs. This ensures that battery recyclers become central players in the e-mobility ecosystem. Additionally, recognizing the insufficient recycling infrastructure, the government plans to establish localized battery recycling plants, offering incentives such as land in Special Economic Zones (SEZs), import duty waivers, and climate finance opportunities.¹⁰ Kenya's 90% renewable energy mix presents a sustainability advantage, allowing recycling plants to operate using clean energy and benefit from carbon credit incentives. The policy also calls for a clear regulatory framework for end-of-life battery management, providing an opportunity for recycling firms to help shape national hazardous waste policies.

The Draft National E-Mobility Policy (2024) provides a regulatory and market foundation for battery recycling in Kenya. It fosters sustainable waste management, local recycling infrastructure, and producer accountability, ensuring that battery waste does not become an environmental hazard. While it provides a framework for promoting sustainable practices, including battery recycling, it is important to note that, as a draft, it does not yet have the force of law.

As already discussed, the current legal landscape is defined by the Environmental Management and Coordination (Waste Management) Regulations, 2006, and the Sustainable Waste Management Act, 2022. However, as the Draft National E-Mobility Policy (2024) progresses towards formal adoption, it is likely to drive further regulatory changes. This may involve the development of specific rules and standards tailored to the unique challenges and opportunities presented by electric mobility, such as the safe disposal and recycling of lithium-ion batteries.

⁹ Draft National E-Mobility Policy, March 2024 Pg 6-7

¹⁰ Ibid, Pg 8-9

By aligning with the policy's objectives, a lithium-ion battery recycling facility can play a key role in Kenya's green energy transition, benefiting from regulatory support and other incentives.

C. Local Risks

The local landscape presents certain risks particularly in environmental management, public health, and regulatory compliance. Improper handling of lithium-ion batteries poses significant environmental and public health risks, as seen in the *Owino Uhuru Residents v Metal Refinery (EPZ) Ltd & Others* (2024) case.¹¹ In this case, Metal Refinery (EPZ) Limited operated a lead-acid battery recycling plant near Owino Uhuru village, releasing toxic waste into the air, soil, and water sources. The unchecked pollution led to severe lead poisoning, resulting in over 20 deaths and widespread health complications, particularly among children and pregnant women. The Environment and Land Court found both the company and government regulatory agencies liable for failing to prevent environmental contamination, ordering a Ksh 1.3 billion compensation for the affected community. This landmark decision was later upheld by the Supreme Court of Kenya, reinforcing the legal principle of corporate liability in environmental pollution cases. However, it should also be noted that the polluter is to pay for only 25% of the damages and the rest is to be paid by the various state agencies.

The Owino Uhuru ruling underscores critical legal obligations that a lithium-ion battery recycling facility must observe to avoid similar liabilities. The court specifically held that the government and the company had failed in their duty of care by allowing hazardous waste exposure without adequate monitoring, intervention, or enforcement of environmental laws. Moreover, the case exposed deficiencies in public participation, with the court noting that affected communities were not adequately consulted before the establishment of the plant, violating Section 59 of the Environmental Management and Coordination Act (EMCA), 1999. This failure to engage the local population exacerbated community harm, leading to legal redress under Article 42 of the Constitution of Kenya, which guarantees the right to a clean and healthy environment. Furthermore, proactive community engagement is essential, not just as a legal requirement but as a safeguard against opposition and litigation.

The *Save Lamu and 5 Others v. National Environmental Management Authority & Another* (2019) case highlighted the necessity of meaningful consultation under the Environmental (Impact Assessment and Audit) Regulations. For project proponents, effective public participation requires early and proactive engagement with stakeholders. This means initiating consultations at the earliest stages of project planning to identify and address community concerns before critical decisions are made. It also demands inclusivity, ensuring that all affected parties, including local communities, civil society organizations, and relevant government agencies, have an opportunity to voice their perspectives.

Transparency is equally important, requiring clear, accessible, and timely communication about the project's potential impacts and benefits. This openness builds trust and fosters

¹¹ *Owino Uhuru Residents v Metal Refinery (EPZ) Ltd & Others* [2024] KESC 75 (KLR)

informed dialogue, reducing the likelihood of future conflict. Responsiveness further strengthens this relationship, as it demonstrates that stakeholder input has genuinely influenced project decisions, with feedback reflected in both project design and mitigation measures.

In practice, this approach involves publicizing the project through posters in strategic locations, placing notices in widely circulated newspapers, and making announcements on local radio stations in both official and local languages to reach a diverse audience. Project proponents should also hold at least three public meetings with affected communities to discuss potential impacts and gather feedback. These meetings should be scheduled at convenient times and locations, with notices issued at least one week in advance to allow for adequate preparation.

Additionally, appointing a qualified coordinator to document both oral and written comments during public consultations is essential, as these records form a critical part of the submission to the National Environment Management Authority (NEMA). Adhering to these practices not only fulfills legal requirements under Kenya's Environmental (Impact Assessment and Audit) Regulations but also builds long-term community trust, reducing the risk of opposition, legal disputes, and project delays.

For a lithium-ion battery recycling plant, this case serves as a legal standard on the consequences of environmental negligence in Kenya. Any failure to implement proper hazardous waste controls could result in corporate liability, financial penalties, and long-term reputational damage. The Supreme Court anchored and recognized the polluter pays principle as a key legal doctrine in Kenya, meaning that companies responsible for environmental degradation must bear the costs of remediation and compensation. To mitigate such risks, continuous environmental audits, as required under Section 68 of EMCA, must be strictly conducted to ensure compliance with waste management and emissions control standards.

Occupational safety is another critical concern, given the hazardous nature of recycling operations. The Occupational Safety and Health Act (OSHA), 2007, establishes key provisions to protect workers. The Act mandates safety measures for handling, transporting, and disposing of hazardous substances, requiring employers to develop safe collection and recycling systems. It also compels manufacturers and suppliers to provide Material Safety Data Sheets (MSDS) detailing essential information on hazardous materials, ensuring workplace accessibility and employee awareness. Additionally, it requires that all containers of hazardous substances carry clear warning labels. Failure to comply with these provisions carries severe legal consequences, including fines and imprisonment.¹²

Lithium-ion battery recycling poses significant occupational hazards that must be addressed through stringent workplace safety measures. One of the most pressing risks is fire hazards caused by the combustion of lithium-ion cells, which can ignite if mishandled or exposed to excessive heat. Without proper storage and disposal protocols, these batteries pose a serious fire risk in recycling facilities. Additionally, workers face exposure to toxic fumes during the dismantling process.

¹² Occupational Safety and Health Act (OSHA), 2007, Section 83-85

The chemical composition of lithium-ion batteries includes hazardous substances that, if released into the air, can cause respiratory complications and long-term health issues. Improper ventilation or lack of personal protective equipment (PPE) increases the risk of inhalation, making occupational health regulations a critical component of workplace safety. Another significant danger stems from the risk of explosions if spent lithium-ion batteries are not fully discharged before processing. The presence of residual electrical energy in end-of-life batteries can trigger thermal runaway reactions, leading to sudden explosions that endanger workers and infrastructure. To mitigate these risks, battery recycling facilities must implement strict safety protocols, including controlled discharge procedures, appropriate storage conditions, and employee training programs to enhance awareness of hazardous material handling.¹³

A recent tragedy at the Mr. Green Africa plastics recycling plant in Nairobi's Industrial Area underscores the severe consequences of inadequate safety measures. In this incident, two workers suffocated to death after entering a pit used for mixing chemicals, reportedly due to a lack of oxygen. The bereaved families are now demanding answers about the circumstances leading to the deaths and whether proper workplace safety protocols were followed.¹⁴ This incident emphasizes the necessity for strict adherence to safety regulations to protect workers' lives.¹⁵

The Owino Uhuru case underscores the consequences of neglecting community welfare, demonstrating how legal battles and financial liabilities can arise from inadequate engagement.¹⁶ Proactive communication and involvement in community development initiatives can help build trust and prevent disputes especially through the EIA.

Additionally, establishing a recycling facility presents economic and social opportunities by creating local employment and enhancing expertise in sustainable waste management. Kenya has a foundational base of technical skills relevant to waste management and recycling, cultivated through its network of Technical and Vocational Education and Training (TVET) institutions. Nonetheless, the specialized skills specific to lithium-ion battery recycling, such as battery dismantling, chemical handling, and advanced safety protocols, are still emerging within the local workforce. To bridge this gap, initiatives like the National Industrial Training Authority (NITA)-approved curriculum in e-waste management and processing have been implemented at several training institutions, training 400 young people and creating employment opportunities in safer, healthier processing facilities.¹⁷

¹³ Sushovan Bej and Toni Zhimomi, *International Review on Recycling Ecosystem of Electric Vehicle Batteries* (GIZ, Agora Verkehrswende, Indian Institute of Technology Bombay, 2023)

¹⁴ Tuko News, 'Nairobi: Pain as 2 Workers Suffocate to Death at Plastic Recycling Company' (Tuko News, 6 January 2025) <https://www.tuko.co.ke/kenya/counties/574303-nairobi-pain-2-workers-suffocate-death-plastic-recycling-company/> [Accessed 02 February 2025].

¹⁵ Sushovan Bej and Toni Zhimomi, *International Review on Recycling Ecosystem of Electric Vehicle Batteries* (GIZ, Agora Verkehrswende, Indian Institute of Technology Bombay, 2023) pg. 65-70

¹⁶ Mwanza, R. (2020). Toxic Spaces, Community Voices, and the Promise of Environmental Human Rights: Lessons on the Owino Uhuru Pollution Incident in Kenya. *Nordic Journal of Human Rights*, 38(4), 279–304.

¹⁷ European Training Foundation, 'Green Skills Award 2023 Finalist: Kenya – E-waste Management' (ETF, 7 June 2023) <https://www.etf.europa.eu/en/news-and-events/news/green-skills-award-2023-finalist-kenya-e-waste->

Given the specialized nature of lithium-ion battery recycling, potential investors can collaborate with local TVET institutions to develop targeted training programs. Such partnerships can ensure the availability of a skilled workforce tailored to the facility's needs, while also contributing to Kenya's broader goals of industrial growth and environmental conservation. This process involves multiple steps, including business registration and obtaining the necessary permits. Investors must first register their business entity with the Registrar of Companies, with foreign investors required to invest a minimum of USD 100,000 to secure an Investment Certificate from the Kenya Investment Authority (KenInvest). This certificate facilitates processes like tax registration, work permits, and access to incentives.

For facilities located within Export Processing Zones (EPZs), investors must also secure the relevant licenses from the Export Processing Zones Authority (EPZA). These zones offer substantial incentives, including reduced corporate tax rates, exemptions on import duties, and VAT relief, which can significantly reduce operational costs.

KenInvest further supports investors through its One-Stop Centre, which streamlines processes such as investment certification, work permits for expatriate staff, and coordination with other government agencies for utilities and infrastructure, facilitating a smoother market entry and operational setup.

Additionally, Kenya's domestic laws, specifically the Investment Promotion Act 2004, does not prohibit foreign ownership of industrial or manufacturing facilities such as recycling plants. However, certain sectors-such as land ownership and telecommunications-are subject to nationality-based limitations or require local partnership arrangements.¹⁸ Importantly, the Act does not include any local content requirements or performance obligations for manufacturing operations, in compliance with multilateral trade obligations.

1.2 Regional Legal and Policy Considerations

A. Regional Legal Framework

Establishing a lithium-ion battery recycling industry in Kenya necessitates alignment with regional environmental protocols, particularly those of the East African Community (EAC). Article 40 of the EAC Common Market Protocol emphasizes the commitment of Partner States to ensure sound environmental and natural resource management, mandating the prevention of activities detrimental to the environment. This necessitates the harmonization of environmental standards and laws among member states. For Kenya, aligning battery recycling operations with these regional environmental management principles is essential to ensure compliance and facilitate seamless integration within the EAC framework.

[management](https://vettoolbox.eu/wp-content/uploads/2024/05/VET_Toolbox_Kenya_Factsheet-1.pdf) & VET Toolbox, 'Managing E-Waste in Kenya' (VET Toolbox, October 2023)
https://vettoolbox.eu/wp-content/uploads/2024/05/VET_Toolbox_Kenya_Factsheet-1.pdf

¹⁸ Land Control Act (Cap 302, Laws of Kenya), s 9(1); see also Constitution of Kenya 2010, Art 65.

n the landmark case *African Network for Animal Welfare (ANAW) v. Attorney General of the United Republic of Tanzania* (Reference No. 9 of 2010), the East African Court of Justice (EACJ) addressed the Tanzanian government's proposal to construct a bitumen-standard highway through the Serengeti National Park. The court found that this proposal violated several key provisions of the Treaty for the Establishment of the East African Community (EAC Treaty), including **Article 5(3)(c)**, which mandates Partner States to promote sustainable utilization of natural resources and take measures to protect the natural environment, and **Article 8(1)(c)**, which requires Partner States to abstain from any measures likely to jeopardize the achievement of the objectives of the Community or the implementation of the provisions of the Treaty.

Additionally, the court cited **Article 111(2)**, which emphasizes the need for Partner States to cooperate in the management of natural resources, and **Article 114(1)**, which obliges Partner States to develop and adopt common policies and strategies for the conservation and management of natural resources. The EACJ concluded that the construction of the highway would cause irreversible damage to the Serengeti ecosystem, disrupt the annual migration of wildlife, and negatively impact biodiversity. As a result, it issued a permanent injunction restraining the Tanzanian government from proceeding with the proposed road construction through the Serengeti National Park, reinforcing the EAC's commitment to environmental protection within the region.

The judgment serves as a significant precedent for ensuring that any projects within the East African Community comply with regional environmental obligations and do not undermine conservation efforts.

Additionally, Kenya is a signatory to the African Charter on Human and Peoples' Rights, which enshrines the right of all peoples to a general satisfactory environment favorable to their development. This provision underscores the state's obligation to ensure that industrial activities, such as battery recycling, do not compromise environmental integrity and public health.¹⁹ The landmark case of *Social and Economic Rights Action Center (SERAC) v. Nigeria* highlights the consequences of neglecting this duty. In this case, the African Commission on Human and Peoples' Rights found Nigeria in violation of Article 24 of the African Charter due to environmental degradation and health issues arising from oil exploration activities. The Commission emphasized that governments must take reasonable measures to prevent pollution and ecological degradation, promote conservation, and ensure ecologically sustainable development.²⁰

B. Regional Opportunities

Despite these challenges, there are strategic opportunities for Kenya. The absence of a well-established lithium-ion battery recycling industry in East Africa positions Kenya to lead in this

¹⁹ African Charter on Human and Peoples' Rights (adopted 27 June 1981, entered into force 21 October 1986) 1520 UNTS 217, Article 24

²⁰ *Social and Economic Rights Action Center (SERAC) and Another v Nigeria* (2001) AHRLR 60 (ACHPR 2001).

sector. By initiating collaborative efforts with EAC member states, Kenya can advocate for the development of a regional recycling hub. This initiative would involve harmonizing policies, sharing technological advancements, and pooling investments to create sustainable infrastructure that benefits the entire region. Such collaboration could also enhance the supply chain for battery materials, reducing dependence on external sources.²¹

Moreover, Kenya can play a pivotal role in promoting policies that support a just transition towards sustainable energy solutions within the EAC. This includes advocating for regulations that facilitate the safe and legal movement of used batteries across borders for recycling purposes. By doing so, Kenya would not only secure a steady supply of recyclable materials but also contribute to the region's environmental sustainability goals and economic development through green job creation.

C. Regional Risks

It is imperative to note that there exists certain risks which must be considered. These include; the lack of harmonized environmental laws across EAC countries can pose operational challenges. Discrepancies in regulations may lead to legal uncertainties and hinder the establishment of a unified recycling framework. To mitigate this risk, it is essential to engage in continuous dialogue with regional partners to align policies and establish clear guidelines that govern the recycling industry uniformly across the region.

In conclusion, while establishing a lithium-ion battery recycling industry in Kenya presents notable challenges due to existing regional regulations and international conventions, it also offers significant opportunities. Proactive engagement with EAC member states to harmonize environmental policies, coupled with strategic advocacy for adaptable waste management protocols, can position Kenya as a leader in sustainable battery recycling in East Africa.

1.3 International Aspects

A. International Legal Framework

The establishment of a lithium-ion battery recycling industry in Kenya must align with international hazardous waste management treaties, particularly the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal. As a signatory, Kenya is obligated to ensure that lithium-ion battery waste is handled in accordance with the Convention's provisions, which aim to prevent environmental harm and protect public health by regulating the movement and disposal of hazardous waste. The Convention classifies

²¹ Volta Foundation, 'Challenges Facing the Battery Industry in Africa & Solutions' (*Battery Bits*, 10 October 2023) <https://volta.foundation/battery-bits/challenges-facing-the-battery-industry-in-africa-solutions> accessed 4 February, 2025

used lithium-ion batteries as hazardous due to their chemical composition, requiring stringent controls on their transboundary movement, disposal, and tracking.²²

Under the Basel framework, Kenya must implement prior informed consent procedures, ensuring that any import or export of waste lithium-ion batteries occurs only with the explicit approval of both the exporting and receiving country. This measure prevents illegal waste trafficking and ensures that batteries are processed in an environmentally sound manner. Furthermore, the Convention mandates the establishment of national inventories to monitor the generation, disposal, and movement of lithium-ion battery waste, reinforcing the need for a structured tracking mechanism within Kenya's regulatory framework.

Kenya's lack of a formalized system for tracking the cross-border movement of used lithium-ion batteries presents both a challenge and an opportunity. To meet Basel compliance, it must integrate Extended Producer Responsibility (EPR) mechanisms that place waste management obligations on battery manufacturers and importers. Proper classification of lithium-ion battery waste under Annex I and VIII of the Convention would further ensure compliance, preventing illegal dumping and unsafe disposal practices.

Given that lithium-ion batteries contain toxic compounds such as hexafluorophosphate, failure to implement stringent disposal strategies could lead to severe environmental contamination. Non-compliance with Article 13, paragraph 3, which requires annual reporting on hazardous waste management, may expose Kenya to international sanctions or restrictions on its ability to engage in cross-border battery waste trade. Therefore, the establishment of a lithium-ion battery recycling plant in Kenya must prioritize full alignment with Basel Convention obligations, integrating waste tracking, environmental audits, and producer responsibility frameworks to mitigate risks and enhance sustainability.²³

In addition to the Basel Convention, Kenya is yet to align its operations with global environmental standards for exporting recycled battery materials. This includes adhering to guidelines set by international bodies such as the International Organization for Standardization (ISO) and the United Nations Environment Programme (UNEP), which provide frameworks for environmental management systems and best practices for recycling processes.

B. International Opportunities

By pushing for Kenya to commit to these international standards and treaties, the country can be a leader in sustainable lithium-ion battery recycling. This commitment can attract foreign investments from entities seeking environmentally responsible partners in the recycling sector. The global shift towards green energy solutions has heightened the demand for recycled battery materials, and Kenya's proactive alignment with international protocols can make it a preferred

²² Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (adopted 22 March 1989, entered into force 5 May 1992) 1673 UNTS 126.

²³ Open-ended Working Group of the Basel Convention, *Draft Practical Guidance on the Development of Inventories of Waste Batteries Containing Lithium* (Twelfth Meeting, Geneva, 1–3 September 2020 and Nairobi, 4–6 April 2022) accessed 10 February, 2025

destination for such investments. Furthermore, establishing a robust recycling industry can stimulate economic growth, create job opportunities, and promote technological advancements within the country.

C. International Risks

Given the nascent domestic market for end-of-life LIBs, it may be necessary to import additional volumes of used batteries to ensure steady processing capacity. However, as discussed above international imports of battery waste are strictly regulated under the Basel Convention. Used LIBs are classified as hazardous waste, triggering the prior informed consent (PIC) procedure. This requires Kenya to secure approval from the exporting state, demonstrating its technical and institutional capacity to handle such waste responsibly. Failure to comply may result in rejected shipments or legal action under international law, disrupting the supply chain and threatening reputational harm to the business.²⁴

Transportation of used LIBs across international borders further compounds the risk profile. Spent batteries retain residual energy, making them prone to thermal runaway events—fires or explosions triggered by internal chemical reactions. If mishandled or improperly packaged during shipping, these batteries can ignite, as evidenced in multiple incidents globally.²⁵ The UN Manual of Tests and Criteria provides specific packaging, labeling, and handling requirements for the cross-border transport of such materials. Non-compliance with these standards may result in shipment delays, seizure by customs authorities, and higher insurance premiums.²⁶

Beyond international scrutiny, domestic governance risks present a more immediate challenge. In Kenya, concerns about regulatory enforcement and corruption are well documented.²⁷ Without strict import limits and real-time tracking systems, there is a credible risk that local actors may exploit regulatory loopholes to import battery volumes that exceed national recycling capacity. This over-importation could result in illegal stockpiling or dumping, with significant environmental and public health consequences—undermining community trust and potentially triggering civil litigation or criminal enforcement actions. For a private recycling operator, these risks translate into long-term liabilities, remediation costs, and reputational damage.

²⁴ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (adopted 22 March 1989, entered into force 5 May 1992) 1673 UNTS 57, art 6 (PIC procedure); see also <https://www.basel.int> accessed 21 March 2025

²⁵ Ouyang L and others, 'A Review of Lithium-Ion Battery Safety Concerns: The Issues, Strategies, and Testing Standards' (2019) 13 Journal of Energy Chemistry 20, 29

²⁶ United Nations, *Recommendations on the Transport of Dangerous Goods: Manual of Tests and Criteria* (7th rev edn, UN 2019) <https://unece.org> accessed 22 March 2025

²⁷ Transparency International Kenya, 'The East African Bribery Index 2023' (TI-Kenya, 2023) <https://tikenya.org> accessed 22 March 2025 & Kumar A and others, 'Hazardous Waste Management in Developing Countries: A Review of Issues, Challenges, and Opportunities' (2021) 38 Environmental Science and Pollution Research 11439

Recommendations

1. **Ensure Full Compliance with Environmental Regulations.** The facility must undergo a rigorous EIA process, meeting the requirements of NEMA, and other regulations to prevent environmental liabilities. Continuous environmental audits will be critical to ensuring adherence to air emissions and hazardous waste disposal standards.
2. **Implement Strong Occupational Safety Measures** Lithium-ion battery recycling poses fire, toxic fume, and explosion risks. Compliance with employee protection rights is essential, requiring worker protection programs, proper waste handling protocols, and emergency response systems to prevent accidents.
3. **Prioritize Community Engagement and Transparency** Public participation is a legal and ethical necessity to gain local support and prevent opposition. The plant must engage communities early, addressing concerns about pollution, health risks, and economic benefits, as required under law.
4. **Align with Regional and International Waste Management Standards.** The company must push for Kenya to harmonize EAC waste regulations and ensure compliance with the Basel Convention to regulate the transboundary movement of hazardous lithium-ion battery waste. Adherence to these frameworks will prevent regulatory conflicts and enhance sustainability efforts.
5. **Leverage Policy Support for Sustainability and Growth.** The Draft National E-Mobility Policy, 2024, offers opportunities for battery recycling facilities, including incentives for green energy integration, circular economy initiatives, and extended producer responsibility (EPR) schemes. Aligning with this policy will support sustainable operations and market competitiveness.
6. **Building a Circular Battery Value Chain:** To ensure the long-term sustainability and profitability of your lithium-ion battery recycling facility in Kenya, it is essential to develop a circular battery value chain. The facility should prioritize battery repurposing and reuse before full recycling, working with EV manufacturers, energy storage providers, and industrial users to create second-life applications. Implementing a zero-waste framework will optimize resource recovery and align with Extended Producer Responsibility (EPR) requirements. By integrating circular economy principles into operations, it leads to sustainable battery management while minimizing environmental risks and aligning with global best practices.

2. Financial and Legal Considerations

Establishing a lithium-ion battery recycling facility in Kenya, necessitates a comprehensive understanding of the financial and legal landscape, both regionally and locally. This includes adherence to taxation laws, capital investment incentives, and regional trade agreements. Notably, Naivasha's designation as a Special Economic Zone (SEZ) offers unique benefits that can be leveraged to optimize operational efficiency and profitability. However, recent developments such as the introduction of the Eco Levy in the Finance Bill 2024 could also present certain challenges.

2.1 Local Taxation and Financial Obligations

A. Income Tax

Kenya operates under a source-based taxation system, as delineated in the Income Tax Act. Section 3(1) stipulates that income accrued or derived from Kenya is subject to tax. Specifically:

“Subject to, and in accordance with, this Act, a tax to be known as income tax shall be charged for each year of income upon all the income of a person, whether resident or non-resident, which accrued in or was derived from Kenya.”²⁸

For resident companies, the corporate income tax rate is set at 30%. This rate applies to profits realized within a given fiscal year, calculated by deducting allowable expenses from the total revenue. Section 15(1) of the Income Tax Act provides clarity on deductible expenses:

“For the purpose of ascertaining the total income of any person for a year of income there shall, subject to section 16 of this Act, be deducted all expenditure incurred in such year of income which is expenditure wholly and exclusively incurred by him in the production of that income.”²⁹

Allowable deductions encompass expenses directly tied to income generation, such as salaries, wages, license fees, and administrative costs. Conversely, expenses not directly related to income production, including fines and depreciation, are non-deductible for tax purposes.

In instances where the company incurs a loss within a fiscal year, it is exempt from income tax for that period. Moreover, such tax losses can be carried forward to offset taxable income in subsequent years without requiring prior approval from the Commissioner.

B. Investment Deductions

Kenya’s tax regime provides a range of incentives to encourage capital-intensive investments, particularly in manufacturing and industrial infrastructure. Among these is the Investment Deduction outlined under the Second Schedule of the Income Tax Act (Cap 470), which allows deductions on qualifying capital expenditures, such as the construction of industrial buildings or the acquisition of new machinery.³⁰

Significantly, the Finance Act, 2022 reintroduced an enhanced investment deduction of 150% for projects located outside Nairobi and Mombasa counties, a provision designed to stimulate industrial development in underrepresented regions. To qualify, an investor must commit at least KES 2 billion in capital, with the investment occurring within either:

²⁸ Income Tax Act, Cap 470, Laws of Kenya.

²⁹ Income Tax Act, Cap 470, Laws of Kenya.

³⁰ Income Tax Act (Cap 470), Second Schedule, Laws of Kenya

- The four years immediately preceding 1 July 2022, or
- The three years immediately following this date.³¹

Given that **Naivasha** is located outside the specified urban centers, an investment in a battery recycling facility in this region could potentially qualify for the enhanced 150% deduction—*provided the capital expenditure meets or exceeds the KES 2 billion threshold*. However, whether the proposed lithium-ion battery recycling facility would surpass this threshold remains uncertain at the feasibility stage and would depend on the scale of operations, technology adopted, and site development costs.

While such incentives are beneficial for large-scale investors, they raise important equity concerns. The current tax framework disproportionately favors large capital investments, often leaving small and medium enterprises (SMEs)—which may form the backbone of green and circular economy initiatives—without similar fiscal relief. As a result, SME investors in recycling or clean-tech sectors may find themselves subject to standard corporate taxation rates, which can be financially burdensome and potentially discourage participation in emerging green industries.

For a truly inclusive green transition, future policy reform should consider tiered investment deduction structures or graduated incentives that lower the entry barrier for SME participants while still maintaining competitiveness for large-scale investments.³²

C. Registration and Compliance

All companies are mandated to register for Corporate Income Tax (CIT) in Kenya. Upon registration, the Kenya Revenue Authority (KRA) issues a unique Personal Identification Number (PIN) for tax filing purposes. CIT returns must be filed via the iTax platform within six months following the end of the fiscal year, typically by the end of June of the subsequent year.

Non-compliance with tax obligations attracts penalties. Specifically, late payment of CIT incurs a penalty of 20% on the outstanding tax amount.

D. Value Added Tax (VAT)

Value Added Tax (VAT) in Kenya is governed by the VAT Act and is levied on the supply of taxable goods and services. The standard VAT rate is 16%. Businesses with an annual turnover exceeding KES 5 million are required to register for VAT. The tax payable is the difference

³¹ Finance Act 2022, s 8; Kenya Revenue Authority, 'Investment Deduction' (KRA) <https://www.kra.go.ke/en/individual/capital-allowances/investment-deduction> accessed 23 March 2025

³² Institute of Economic Affairs, *Policy Options for Tax Reforms in Kenya: Balancing Equity and Efficiency* (IEA 2021) <https://ieakenya.or.ke> accessed 23 March 2025.

between output tax (charged on sales) and input tax (paid on purchases). Section 17(1) of the VAT Act states:

“Subject to the provisions of this section and the regulations, input tax on a taxable supply to, or importation made by, a registered person may, at the end of the tax period in which the supply or importation occurred, be deducted by the registered person... from the tax payable by the person on supplies by him in that tax period.”³³

E. Special Economic Zone (SEZ) Benefits

Kenya’s SEZ’s regime provides a framework for promoting export-oriented industrial development through targeted fiscal and non-fiscal incentives. The legal foundation for SEZs is established under the Special Economic Zones Act, 2015, which aims to boost manufacturing, increase foreign direct investment, and promote technology transfer by offering a more favorable business environment.³⁴ Under section 29 of the Act, enterprises operating within designated SEZs enjoy a suite of benefits, including:

- 100% investment deduction on capital expenditure,³⁵
- 10-year corporate tax holidays (followed by a reduced 15% rate for another 10 years),
- Exemptions from import duties, VAT, and other levies on raw materials and machinery, and
- Simplified licensing and regulatory procedures.

These benefits apply regardless of investment size, making SEZs a particularly attractive option for both large and medium-sized investors seeking capital efficiency and regulatory certainty.

While Kenya has established several SEZs across the country-including in Dongo Kundu, Tatu City, and Athi River- this analysis focuses specifically on the Naivasha SEZ, which has been identified by the prospective project proponent as the intended site for establishing the battery recycling facility. Naivasha presents a strategic advantage, not only because it qualifies for the above incentives, but also due to its proximity to Olkaria’s geothermal energy hub. This location ensures access to clean, reliable, and cost-effective energy, aligning with the environmental objectives of the lithium-ion battery recycling sector and enhancing overall project sustainability.

Furthermore, the Naivasha SEZ benefits from existing infrastructure investments under Kenya’s Vision 2030, including a standard gauge railway terminal and proximity to the inland container depot, facilitating efficient logistics and export connectivity.

³³ Value Added Tax Act, 2013, Laws of Kenya

³⁴ Special Economic Zones Act 2015 (No 16 of 2015)

³⁵ Special Economic Zones Act 2015, s 29; see also Kenya Revenue Authority, ‘Special Economic Zones’ (KRA) <https://www.kra.go.ke/en/business/partner-with-us/special-economic-zones> accessed 23 March 2025.

Thus, while multiple SEZs offer similar fiscal frameworks, Naivasha SEZ emerges as a particularly strategic option for the proposed recycling facility due to its geographical, infrastructural, and energy-related advantages.

In Summary, Kenya's tax framework provides substantial incentives to promote industrial investment, notably the 150% investment deduction for qualifying projects outside Nairobi and Mombasa under the Income Tax Act, and the 100% capital deduction under the Special Economic Zones (SEZ) Act. However, these incentives cannot be combined cumulatively to claim 250% on the same capital expenditure. Tax policy principles and precedent limit deductions to avoid double counting of the same investment for multiple incentives, and the Kenya Revenue Authority (KRA) has not issued guidance permitting such a combination.³⁶

F. The Eco Levy and Its Impact on Recycling Operations

The Kenyan Eco Levy, initially proposed as part of the Finance Bill 2024, sought to impose an environmental tax on select products to support sustainable waste management initiatives. While its primary focus was on items such as plastic packaging and electronic waste, the levy had broad implications for industries dealing with hazardous waste and recycling, including lithium-ion battery recycling. The stated objective of the levy was to create a dedicated revenue stream for environmental conservation, waste disposal infrastructure, and pollution control. However, for a lithium-ion battery recycling facility, the Eco Levy presents both financial and regulatory challenges.

A lithium-ion battery recycling plant operates through a complex process that involves the collection, transportation, processing, and safe disposal of hazardous materials. The introduction of the Eco Levy on the importation or local handling of used batteries-should such a provision be reintroduced in future Finance Bills-could add significant operational costs by imposing new tax obligations.

If the levy were applied to imported end-of-life batteries, the cost of acquiring recyclable material would rise, potentially making it less economically viable to sustain operations. Additionally, companies would need to implement new tracking, reporting, and disposal mechanisms to ensure compliance, leading to increased administrative expenses. Furthermore, if the tax burden were transferred to customers or manufacturers who depend on recycled lithium materials, it could impact demand, ultimately reducing market competitiveness³⁷

While the proposed Eco Levy has not been implemented, Kenya's Extended Producer Responsibility (EPR) regulations are already in force, placing clear obligations on producers and importers to manage end-of-life electronic waste. EPR schemes mandate that battery producers fund waste management and recycling programs. Should the Eco Levy be

³⁶ Income Tax Act (Cap 470), Second Schedule; Special Economic Zones Act 2015 (No 16 of 2015) s 29; Kenya Revenue Authority, 'Capital Allowances and Deductions' <https://www.kra.go.ke> accessed 23 March 2025.

³⁷ Business Daily Africa, 'Proposed taxes in new Finance Bill will stagnate growth of e-mobility' (Business Daily, 2024) <https://www.businessdailyafrica.com/bd/opinion-analysis/columnists/proposed-taxes-in-new-finance-bill-will-stagnate-e-mobility-4637664> accessed 15 February 2025.

reintroduced in future Finance Bills, it will be important to ensure that its design complements existing EPR obligations. Moreover, the Finance Bill lacks explicit clarification on whether lithium-ion batteries fall within the taxable categories, creating uncertainty for investors looking to establish recycling facilities.³⁸

2.2 East African Community (EAC) Considerations

a. Customs Union

Kenya is a member of the East African Community (EAC), which operates a Customs Union. This union implements a Common External Tariff (CET) on goods imported from non-member countries and allows free trade on goods among member states, provided they meet the EAC Rules of Origin criteria. Article 12 of the EAC Customs Union Protocol establishes a three-band CET with rates of 0%, 10%, and 25%.³⁹

b. Common Market

The EAC also maintains a Common Market, facilitating the free movement of goods, services, and persons. Article 104(1) of the EAC Treaty underscores this commitment:

“The Partner States agree to adopt measures to achieve the free movement of persons, labour and services and to ensure the enjoyment of the right of establishment and residence of their citizens within the Community.”⁴⁰

For the recycling facility in Naivasha, this integration means that products meeting the Rules of Origin can access markets in other EAC member states without incurring additional customs duties, thereby expanding market reach. This issue is further expounded in the next section on trade and investment.

3. Trade and Investment Considerations

This section focuses on Kenya’s regional and international trade obligations and opportunities under the East African Community (EAC), the African Continental Free Trade Area (AfCFTA), the Tripartite Free Trade Area (TFTA) and the WTO Agreement on Trade Investment Related Measures (TRIMS). It evaluates how these agreements support regional trade in recycled battery products and materials, while also exploring investment protections under bilateral and multilateral instruments.

³⁸ Ibid

³⁹ East African Community Customs Union Protocol, 2004.

⁴⁰ Treaty for the Establishment of the East African Community, 1999

3.1 East African Community Framework

The East African Community is made up of eight countries, an estimated population of 302 million people, and a GDP of approximately US\$345 billion.⁴¹ The customs union therefore offers an opportunity for battery recycling factory access to this market as well as a duty-free-Intra-EAC trade and a Common External tariff. Furthermore, a lithium-ion battery recycling factory would contribute to the EAC policy objectives to promote the development and enhancement of strategic regional industries and value chains⁴². For example, Kenya saw an increase by 295.9 percent in the uptake of electric vehicles in the year 2024.⁴³ Lithium-ion batteries are major components in electric vehicles. When such batteries reach the end of their lifecycle it will lead to an increase in battery waste in the country as observed in countries such as China⁴⁴. A lithium-ion recycling plant would tap into the electric vehicle value chain by recycling such batteries. This section looks at the requirements to be met by a trader to trade under the East African Customs Union.

To trade under the East African Community, the following conditions must be met for manufactured goods such as recycled lithium-ion batteries.

A. Adherence to the EAC Rules of Origin (2015)

Rules of origin are a set of rules that are used to differentiate between goods that are manufactured in the region and those coming from outside. For goods manufactured in the region, the member states of the EAC abolished customs duties and tariffs. Goods that therefore meet the requirements under the rules of origin will not be charged import duty or tariffs within the EAC.

There are two criteria used to ascertain the origin of manufactured goods in the EAC, as per rule 4 of The East African Community Customs Union (Rules of Origin) Rules 2015⁴⁵. The first is that the goods are wholly produced or obtained from one of the EAC members. The contents used to manufacture the goods should also be wholly sourced from the region under this criteria. As per Rule 5, (1), (m) scrap and waste resulting from manufacturing operations within the partner state shall be regarded as being wholly produced in the partner state.

The second is that there was sufficient or significant processing done in a partner state of the EAC. Raw materials can therefore be sourced from outside the region but have to be processed in the EAC to produce the final product⁴⁶.

To ascertain that significant or sufficient processing has occurred to classify goods as being produced in the EAC, some factors put into consideration include the complexity of the work or the process involved, the time taken in such processing, the physical or chemical change in the material or article as a result of the working or processing operations, skills level required

⁴¹ Somalia and The East African Community, [International Monetary Fund. Middle East and Central Asia Dept](#), 17 Dec 2024

⁴² EAST AFRICAN COMMUNITY INDUSTRIALISATION POLICY 2012 - 2032

⁴³ John Mutua, How new special power tariff has spurred electric vehicle uptake, Business Daily. Dec 26, 2024.

⁴⁴ Yifei Li, China's EV Success faces a battery recycling problem, EastAsiaForum, 18th Jan 2025.

⁴⁵ Rule 4, THE EAST AFRICAN COMMUNITY CUSTOMS UNION (RULES OF ORIGIN) RULES, 2015

⁴⁶ Rule 6, THE EAST AFRICAN COMMUNITY CUSTOMS UNION (RULES OF ORIGIN) RULES, 2015

in the working or processing operations carried out and the level of technology required in the working or processing operations carried out in the partner state.⁴⁷ Batteries recycled in Kenya would require considerable efforts in processing and converting the used lithium ion batteries into new recycled products. Such batteries would therefore meet the required standard and equally the requirement to be certified as being produced in a member state.

If the product meets the requirement to be certified as being produced in a partner state of the EAC community, the product can be issued with a certificate of origin. The authority vested with issuing the certificate of origin in Kenya is the Kenya National Chamber of Commerce and Industry (KNCCI).

B. Meeting the required product quality

EAC partner states recognize the importance of safeguarding the safety and health of their consumers against substandard and harmful products. To this end, a trader is required to obtain an import clearance certificate or a certificate of conformity for product quality standards⁴⁸. The certificate is given by the government agency responsible for product quality, in Kenya the appointed authority is the Kenya Bureau of Standards (KEBS). A trader based in Kenya is thereby required to apply to KEBS to get their products checked to meet the required product quality.

The authority can issue the certificate of conformity for product quality by either recognizing the marks of quality from the country where the trader originates or by conducting an independent investigation where the products are tested at a laboratory to ascertain that they meet the product quality requirement. Once a product has passed the quality check and gets a mark of quality from a Partner State of the EAC, the product can be traded within the community without requiring further checks and tests for minimum quality standards in another state. This is aimed at making trade within the EAC easier.⁴⁹

3.2 EAC Risks

While the EAC customs union was formed to facilitate trade within the region, thereby spurring economic integration and growth, Non-tariff barriers remain a major hindrance to trade within the region. Non-tariff barriers are measures or conditions apart from tariffs that make it more difficult to trade across the EAC by raising the costs and time required to trade, thereby raising the price of the product compared to the price in the country of origin.

A study by the East Africa Law Society (EALS) found the following as persistent Non-tariff barriers within the region; Cumbersome administrative processes that involve many regulatory bodies. Lack of transparency and an appropriate mechanism to notify traders on changes in national laws and regulations as well as a lack of a centralized repository of cross-border trade

⁴⁷ Manual on the Application of the East African Community Customs Union (Rules of Origin) Rules, 2015

⁴⁸ EAC trade rules, regulations and procedures on unprocessed agricultural produce and manufactured goods

⁴⁹ Manual on the Application of the East African Community Customs Union (Rules of Origin) Rules, 2015

regulations. The duplicity of standards and tests across the states makes compliance costs to be high which is further exacerbated by the fact that the test facilities are away from the borders. Poorly maintained transport infrastructure. Nationalistic and discriminatory behavior by border officials leads to improper interpretation of customs classification and assessment of taxes. Finally, high prevalence of unofficial fees and incidences of bribery that result from bottlenecks erected by administrative requirements⁵⁰.

The partner states of the EAC sought to remedy the challenges arising from NTBs through a Time-bound program for the elimination of Identified Non-Tariff barriers. To meet the objective of the time-bound program, the East African Legislative Assembly passed The EAC Elimination of Non-Tariff Barriers Act, 2017. The objectives of the Act include providing a legal framework for the removal of NTBs, providing a mechanism for identifying and monitoring the removal of NTBs, and removing restrictions that make the importation or exportation within the community difficult or costly⁵¹.

The EAC Elimination of Non-tariff Barriers Act, 2017, makes a prohibition against activities that could potentially lead to NTBs⁵². Such activities include measures that would cause additional costs to the business including surcharges and customs bonds, activities that result in wastage of time or loss of market which include delays in clearing of imports and testing and certification procedures that take unnecessarily long, activities that amount to corruption such as bribery, the act also prohibits non-recognition of the East African Rules of Origin and which lead to additional costs of verification of goods or any other impediment to trade within the community.

From the above, it can be noted that there are challenges arising from trade within the East African Community, but there are measures put in place to try and alleviate some of these challenges. Potential buyers would include manufacturers of electric vehicles, energy storage companies, and electronics assemblers operating within EAC Partner States. If these governments view battery recycling as aligned with their national green agendas and are politically inclined to support regional circular economy initiatives, they are more likely to facilitate imports from Kenya, thereby reducing the risk of non-tariff barriers (NTBs) and enabling smoother cross-border trade. While it is an opportunity to access the wider EAC market, trader has to take note of some of these challenges and put in place contingency measures to address the challenges.

3.3 Opportunities within the African Continental Free Trade Area.

Comprising eight regional economic blocs and fifty-four countries, the African Continental Free Trade Area (ACFTA) is the world's largest free trade area. The ACFTA seeks to remove barriers hindering intra-African trade. One of the main objectives is also to spur and encourage

⁵⁰ Hanningtone Amol, *A CRITIQUE OF THE EAST AFRICAN COMMUNITY'S NON-TARIFF BARRIERS REGIME*, African Journal of Commercial Law, Vol 2 No 1

⁵¹ Section 3, THE EAST AFRICAN COMMUNITY ELIMINATION OF NON-TARIFF BARRIERS ACT, 2017

⁵² Section 5, THE EAST AFRICAN COMMUNITY ELIMINATION OF NON-TARIFF BARRIERS ACT, 2017

trade in value-added products by establishing regional value chains and enabling investment and job creation.

Associated Battery Manufacturers Limited in Nairobi, a company that specializes in automotive and solar batteries, made their first shipment of Kenyan-produced batteries to Ghana under the AfCFTA in 2022⁵³. In line with the National AfCFTA Implementation Strategy (2022- 2027) objectives that seek to consolidate, diversify, and expand Kenya's exports to Africa and to ensure that Kenya's manufacturing sector real value-added increases⁵⁴. A lithium-ion battery recycling plant aligns with both the national policy objectives and the objectives of the AfCFTA. This is because such a plant promotes industrial development through diversification and regional value chain development across Africa. Lithium ion batteries are a key component in electric vehicles and many other electronic appliances. The development of such batteries within Africa helps in building intra-African supply chains. The lithium-ion battery plant also helps in creating employment opportunities, it would require employees with the technical knowledge in lithium ion battery recycling which helps foster technology transfer, upskilling and youth employment⁵⁵. Recycled batteries would also contribute to the objectives on sustainable development in green energy technologies especially in the areas of electric vehicles and electric motorbikes..

The AfCFTA Appendix IV to the Annex 2 rules of origin. also requires that goods be produced in a partner state to qualify for the preferential treatment. The requirements are similar to those of the East African community requiring the goods to either be wholly produced in a member state or to undergo substantial or sufficient transformation within the territory of a partner state. For a product to undergo substantial or sufficient transformation the one or more of the following has to occur; the value of the goods has been added, raw materials from non AfCFTA states should not exceed a certain limit, if there is a change in the tariff heading or major manufacturing processing that changes the nature of the raw materials and the final product.⁵⁶ Based on these rules, batteries recycled in Kenya would meet the standard conferring originating status.

3.3 COMESA-EAC-SADC Tripartite Free Trade Area (TFTA)

The TFTA came into force in June 2024. The Agreement establishes a free trade area among the partner states of the three regional blocks. It aims to progressively eliminate tariff and non- tariff barriers to trade, cooperate on customs matters and implementation of trade facilitation measures and establish and promote cooperation in all trade- related areas among the partner states. This is to be achieved by measures such as elimination of import duties, elimination of quotas on trade of goods and facilitation of goods on transit between the partner states. The agreement also includes WTO principles of Most Favoured nation and

⁵³ Mariama Diallo, *Kenya Ships First Batches Of Batteries, Tea under AfCFTA Pact*, Voice of America (VOA)

⁵⁴ KENYA'S NATIONAL AfCFTA IMPLEMENTATION STRATEGY 2022 - 2027

⁵⁵ From Minerals to Manufacturing, Africa's Competitiveness in Global Battery Supply Chains, Ayton Fund, The Faraday Institution.

⁵⁶ Practical Guide for the Implementation of the AfCFTA Rules of Origin, World Customs Organization, 2023

National treatment meaning a partner state is prohibited from discriminating against products from another partner state or putting measures that give products from a partner state undue advantage over products from other member states.

Similar to the rules of origin under the East African community and the AfCFTA, the TFTA also requires that a product be either wholly produced in a partner state or undergo substantial transformation within the territory of a member state. A lithium ion battery recycling plant can therefore benefit from trading under the TFTA as Kenya is a member state of the East African Community.

It is important to note that the AfCFTA takes precedence over other regional trade agreements in cases where there is any inconsistency between the provisions of such regional agreements and the AfCFTA.⁵⁷

3.4 General Investment Opportunities and Risks

a. WTO Agreement on Trade-Related Investment Measures (TRIMs)

As a WTO Member, Kenya is a signatory to the Agreement on Trade-Related Investment Measures (TRIMs), which prohibits the application of investment measures that distort trade, such as local content requirements or trade-balancing conditions.⁵⁸ The establishment of a recycling facility—particularly if it aims to export recycled materials within the EAC or globally—must comply with these obligations.

This means that Kenya may not impose conditions on the investor that would require the use of locally sourced inputs or restrict access to imported components, unless such measures are justified under WTO exceptions (e.g., for environmental or public health purposes). For the investor, this also limits the ability of Kenya to unilaterally alter regulatory conditions in a way that would violate WTO commitments.

b. Bilateral and Multilateral Investment Treaties

Kenya has entered into several bilateral investment treaties (BITs) and regional or multilateral investment agreements that provide varying levels of protection for foreign investors. These treaties typically guarantee fair and equitable treatment, protection from expropriation without compensation, free repatriation of funds, and access to investor-state dispute settlement (ISDS).

Active BITs include treaties with:

- **Japan** (2017), which includes strong ISDS provisions and protection standards;⁵⁹

⁵⁷ Article 19 (1) of the Agreement Establishing the African Continental Free Trade Area

⁵⁸ WTO, Agreement on Trade-Related Investment Measures (adopted 15 April 1994, entered into force 1 January 1995) Marrakesh Agreement Establishing the WTO, Annex 1A.

⁵⁹ Japan–Kenya BIT (2016) <https://investmentpolicy.unctad.org/international-investment-agreements/treaties/bit/3700/japan---kenya-bit-2016-> accessed 23 March 2025

- **Singapore** (2023), offering fair treatment, full protection and security, and ISDS access;⁶⁰
- **United Arab Emirates** (2017), promoting reciprocal investment protection;⁶¹
- **Kuwait** (2015), facilitating long-term capital security;⁶²
- **Germany** (2000), which remains among Kenya's most longstanding BITs.⁶³

In addition, Kenya has signed multilateral and regional agreements with investment-related provisions:

- The **African Continental Free Trade Area (AfCFTA)**, which Kenya has ratified, includes a Protocol on Investment still under negotiation. Once adopted, it may introduce binding investment standards across Africa;
- The **Common Market for Eastern and Southern Africa (COMESA) Investment Agreement**, signed but not yet in force, aims to enhance cross-border investment protections;
- As a member of the **East African Community (EAC)**, Kenya is bound by its protocols on trade and investment, facilitating regional economic integration.

However, Kenya does not currently have a BIT with Australia.⁶⁴ This means that the Australian proponent of the proposed lithium-ion battery recycling facility would not benefit from treaty-based protections, such as ISDS, in the event of regulatory changes or investment disputes. Instead, the investor must rely on Kenya's domestic legal framework, including constitutional property protections and statutory investment guarantees.

Given this gap, Australian investors are advised to consider safeguards such as:

- Structuring the investment through a third country with an active BIT with Kenya;
- Incorporating arbitration clauses in commercial contracts governed by international law;
- Seeking coverage from the Multilateral Investment Guarantee Agency (MIGA) for political risk insurance.

While Kenya's investment treaties do enhance security for certain foreign investors, the absence of a Kenya-Australia BIT highlights the importance of careful due diligence and supplementary protections in structuring cross-border investments.

⁶⁰ Kenya–Singapore BIT (2018) <https://investmentpolicy.unctad.org/international-investment-agreements/treaties/bits/4927/kenya---singapore-bit-2018-> accessed 23 March 2025.

⁶¹ Kenya–United Arab Emirates BIT (2014) <https://investmentpolicy.unctad.org/international-investment-agreements/treaties/bit/3702/kenya---united-arab-emirates-bit-2014-> accessed 23 March 2025.

⁶² Kuwait–Kenya BIT (2013) <https://investmentpolicy.unctad.org/international-investment-agreements/treaties/bit/3701/kuwait---kenya-bit-2013-> accessed 23 March 2025.

⁶³ Germany–Kenya BIT (1996) <https://investmentpolicy.unctad.org/international-investment-agreements/treaties/bit/2224/germany---kenya-bit-1996-> accessed 23 March 2025.

⁶⁴ UNCTAD, 'International Investment Agreements Navigator: Kenya and Australia' <https://investmentpolicy.unctad.org/international-investment-agreements/countries> accessed 23 May 2025.

4. Comparative Study of International Battery Recycling Regulations

This section presents a case study analysis of various countries and their approaches to lithium-ion recycling regulation. This analysis will provide insights that may inform investor decisions regarding the feasibility of establishing a lithium-ion recycling facility in Kenya by forecasting potential regulatory approaches in the region. The methodology for selecting these case studies is outlined below.

Considering that this research analyses diverse regulatory frameworks addressing lithium-ion battery recycling, it is crucial to examine the various factors that may influence the type of intervention or regulation adopted by states in this domain.

Firstly, among these variables, the study examines the ‘scale of the market’ in a country's lithium-ion industry. The term ‘scale of the market’ refers to the size of the economy and the number of individuals projected to regularly use or rely on lithium-ion batteries. This variable is significant because it provides insight into the broader context in which a state formulates its regulatory framework and offers a perspective on potential regulatory approaches in Kenya.

Secondly, the study considers the ‘state of development’ in lithium-ion battery recycling. In this context, ‘state of development’ refers to the level of industrial progress and technological advancement within the sector. The evidence examined includes the number of industrial players in lithium-ion battery recycling and the sophistication of the technology used in lithium-ion battery manufacturing. This variable is critical for understanding regulatory intent, as it underscores how competitive dynamics, and technological advancements influence the formulation of regulatory policies.

Based on the established methodology, the comparative case studies for this section have been categorised into two distinct groups:

- Countries with a large market and low levels of industrial development;
- Countries with a large market and high levels of industrial development; and,

Jurisdictions with small markets have been intentionally excluded from the scope of this study, as Kenya's market is both large and projected to grow significantly. Consequently, these jurisdictions lack the necessary similarities to serve as effective comparators. The subsequent analysis will be structured accordingly.

4.1 Large market, Low development Industries

An important commonality among the case studies in this section is the presence of a large and promising market for lithium-ion batteries, coupled with limited technical development in the capacity for lithium-ion battery recycling. In this context, the term “large market” refers not merely to population size, but to the volume of demand driven by higher purchasing power and widespread adoption of electric mobility. For example, the first case study is Australia and although Australia's population is smaller than Kenya's, it has a significantly greater

proportion of consumers who can afford electric vehicles and energy storage systems, making it a high-value market for lithium-ion batteries and related technologies. Notably, Australia, similar to many other global regions, is anticipated to experience significant growth in electric vehicle (EV) adoption, with a substantial portion of the batteries being lithium-ion batteries.⁶⁵ Although Australia has a well-established history in battery recycling, with a notable 98% recycling rate for lead-acid batteries, it is important to note that, as of 2022, only 10% of lithium-ion batteries are recycled in the country.⁶⁶

According to Livium, Australia's leading lithium-ion battery recycler, the process of recycling lithium-ion batteries is considerably more complex than that for other battery types.⁶⁷ Moreover, the technology remains relatively nascent, contributing to a limited number of industry participants. Consequently, depleted lithium-ion batteries are often stored in warehouses, potentially exposing them to fire hazards and environmental pollution.⁶⁸

Currently, Kenya does not possess the full technical capacity or industrial infrastructure required to independently manage large-scale lithium-ion battery recycling. Existing waste management systems are largely geared toward less complex forms of e-waste, and there is limited domestic expertise or equipment specifically designed for the chemical and thermal processes involved in lithium recovery. Therefore, any proposed recycling facility would require significant technology transfer, specialized training, and regulatory development - elements that should be explicitly addressed in the investment agreement with the foreign proponent.

This issue has spurred notable interest among government regulators. The government of Australia, represented by its minister in the National Battery Strategy (hereafter NBS), stated that the global transition to renewable energy presents a significant opportunity for Australia to expand its economy, industry, and manufacturing capabilities.⁶⁹ Furthermore, the NBS acknowledged the existence of diverse regional regulations concerning the management of waste lithium-ion batteries, which may affect the transportation of these batteries to recycling facilities.⁷⁰

Furthermore, this initiative has led to the establishment of a battery stewardship program under the Australian Product Stewardship Act of 2011, providing regulatory flexibility to industry pioneers and encouraging investment. Moreover, the government has promoted the

⁶⁵ Australian landscape for lithium-ion battery recycling and reuse in 2020, Future Battery Industries, 2021 <https://publications.csiro.au/publications/publication/PIcsiro:EP208519> accessed on 3rd January 2025.

⁶⁶ The rise of lithium battery recycling in Australia, Off-Grid Energy, <https://www.offgridenergy.com.au/sustainability-environment/the-rise-of-lithium-battery-recycling-in-australia/> accessed on 4th of January 2025.

⁶⁷ <https://liviumcorp.com/battery-recycling/> accessed on 6th January 2025.

⁶⁸ Australian landscape for lithium-ion battery recycling and reuse in 2020 – Current status, gap analysis and industry perspectives, Future Batter Industries, 2021, 7-8 <https://publications.csiro.au/publications/publication/PIcsiro:EP208519> accessed on 3rd January 2025.

⁶⁹ Department of Industry, Science and Resources, *National Battery Strategy Australia*, 2024, 42— <https://www.industry.gov.au/publications/national-battery-strategy> on 30 January 2025.

⁷⁰ Department of Industry, Science and Resources, *National Battery Strategy Australia*, 2024, 37— <https://www.industry.gov.au/publications/national-battery-strategy> on 30 January 2025.

standardisation of a B-cycle scheme for managing the lifecycle of lithium-ion batteries. In practical terms, this approach involves creating designated drop-off points for lithium-ion batteries, with the government overseeing their collection and transportation to recycling facilities.⁷¹ For Kenya, this underscores a critical regulatory lesson: replicating such a system without a robust oversight framework would be perilous. The success of lithium-ion battery recycling hinges not only on private sector participation, but on active and clearly defined government regulation to ensure accountability, safety, and sustainability.

Furthermore, the government has implemented consumer awareness programs to bridge the information gap.⁷² This mandate to enhance consumer understanding has also been extended to industry stakeholders engaged in lithium-ion battery recycling under the battery stewardship program.⁷³

4.2 Large market, High Development Industries

According to the International Council on Clean Transportation (ICCT), the current LIB recycling capacity in the United States is approximately 100,000 metric tonnes per annum; however, based on industry estimates, this capacity is expected to increase to 650,000 metric tonnes by the end of the decade.

In industries characterized by large markets and advanced development, a common characteristic is the robust presence of a lithium-ion battery (LIB) industry coupled with competitive participation in the LIB recycling sector. The initial case study examines the United States, where the LIB market is projected to reach a value of USD 600 million by 2025.⁷⁴ Moreover, the United States is home to several prominent market players, including Call2Recycle, Exide Technologies, Aqua Metals, Redwood Materials, and Li-Cycle, among others.⁷⁵ According to the International Council on Clean Transportation (ICCT), the current LIB recycling capacity in the United States is approximately 100,000 metric tonnes per annum; however, based on industry estimates, this capacity is expected to increase to 650,000 metric tonnes by the end of the decade.

It is important to note that while the United States offers a mature and high-capacity recycling environment, investors may be drawn to Kenya due to strategic regional positioning, lower operational costs, growing demand across Africa, and the opportunity to shape an emerging

⁷¹ See generally, Lithium-ion batteries and Consumer Product Safety, ACCC, October 2023, 46, and national battery strategy, 33.

⁷² Fire and Rescue NSW, 'Lithium-ion batteries: Charge safe at home' *Fire and Rescue NSW*, 2025—<https://www.fire.nsw.gov.au/page.php?id=9426> on 30 January 2025.

⁷³ Lithium-ion batteries and Consumer Product Safety, ACCC, October 2023, 47.

⁷⁴ U.S. Battery Recycling Market Size, Share & Trends Analysis Report By Chemistry (Lithium-Ion, Lead Acid, Nickel), By Application (Transportation, Consumer Electronics, Industrial), And Segment Forecasts, 2024 – 2030, <https://www.grandviewresearch.com/industry-analysis/us-battery-recycling-market-report> accessed on 25th of January 2025.

⁷⁵ Lithium-ion battery recycling goes large, Mark Peplow, c&en, 2023, <https://cen.acs.org/environment/recycling/Lithium-ion-battery-recycling-goes/101/i38> accessed on 2nd February 2025.

market. Establishing operations in Kenya allows early entrants to leverage first-mover advantages and contribute to building circular economy infrastructure in a region with increasing electric mobility uptake and limited current recycling capacity.

On the regulatory front, a notable shift in focus is observed in highly developed LIB markets. With the initial phase of development largely complete, regulatory efforts are now concentrated on ensuring the functionality and efficiency of existing systems. This shift compels industry participants in LIB recycling to prioritise cost reduction and production optimisation over further innovation, due to the substantial risks and penalties associated with non-compliance.⁷⁶

United States regulation is differentiated through both federal mandates and state-specific approaches. At the state level, jurisdictions have adopted varied strategies. For instance, California has implemented comprehensive Extended Producer Responsibility (EPR) laws for batteries and electronics, requiring manufacturers to establish take-back programs and fund recycling initiatives.⁷⁷ Similarly, New York mandates that battery retailers provide recycling options, thereby promoting a circular economy through producer responsibility. Additionally, several states—including Washington, Maine, and Louisiana—have instituted stewardship programs. This decentralised regulatory framework is particularly necessary in a highly developed economy, given that not all states have established lithium-ion battery recycling facilities.⁷⁸

The federal framework for lithium-ion battery (LIB) recycling is governed by the Resource Conservation and Recovery Act (RCRA), which serves as the primary statute for hazardous waste management.⁷⁹ Under the RCRA, most lithium-ion batteries are classified as hazardous waste due to their ignitable and reactive properties (specifically, waste codes D001 and D003).⁸⁰ This classification imposes stringent requirements on handling, storage, and disposal, mandating that materials from recycling processes may only be stored if they are part of an approved recycling procedure.

In addition, the Department of Transportation (DOT) regulates the transportation of lithium-ion batteries under its Hazardous Materials Regulations (HMR). These regulations are designed to prevent transit-related incidents, such as fires caused by damaged or improperly packaged

⁷⁶ U.S. Battery Recycling Market Size, Share & Trends Analysis Report By Chemistry (Lithium-Ion, Lead Acid, Nickel), By Application (Transportation, Consumer Electronics, Industrial), And Segment Forecasts, 2024 – 2030, <https://www.grandviewresearch.com/industry-analysis/us-battery-recycling-market-report> accessed on 25th of January 2025.

⁷⁷ <https://eridirect.com/blog/2023/11/government-regulations-and-their-impact-on-lithium-ion-battery-recycling/> accessed on 3rd of February 2025.

⁷⁸ Yes, EV Battery Recycling Plants are Already in the US, ABI Research, <https://www.abiresearch.com/blog/ev-battery-recycling-in-us#:~:text=Cirba%20Solutions%20affiliate%2C%20Heritage%20Battery,paused%20as%20construction%20costs%20climbed>. Accessed on the 5th of February.

⁷⁹ *Resource Conservation and Recovery Act (RCRA)*, 42 U.S.C. § 6901 et seq. (1976).

⁸⁰ US Environmental Protection Agency (EPA), *Lithium Battery Recycling Regulatory Status and Frequently Asked Questions*, 24 May 2023, 1—<https://www.epa.gov/hw/lithium-ion-battery-recycling-frequently-asked-questions> on 30 January 2025.

batteries.⁸¹ Accordingly, transporters are required to package lithium-ion batteries in a manner that prevents short circuits, properly label and document shipments to clearly identify hazardous materials, and restrict the transportation of damaged or defective batteries.

4.3 Findings

Finding 1: Leverage Early Regulatory Incentives

The Australian example illustrates that early market entry can offer strategic regulatory advantages, particularly where legislation is still evolving. In emerging markets like Kenya, this may include incentives, adaptable licensing frameworks, and public-private collaboration on regulatory design. For instance, regulating Kenya's growing fleet of electric boda-bodas and tuk-tuks by establishing designated battery drop-off points, as seen in Australia's B-cycle scheme, could support both market development and environmental safety. However, lithium-ion battery recycling is a hazardous process involving fire, chemical, and heavy metal risks. Thus, while regulatory flexibility can enable innovation, it must be coupled with robust enforcement of occupational safety and environmental protection standards. Early investors must not only shape the regulatory landscape but also uphold high compliance standards to ensure the health of workers and the public.

Finding 2: Mitigate the Complexity of Recycling Processes

The case of Australia highlights that lithium-ion battery recycling is inherently complex, due to both the technical novelty of the process and the stringent handling requirements for hazardous materials. This complexity has contributed to a scarcity of industry players and persistent risks such as the improper storage of depleted batteries, which pose serious safety hazards. For Kenya, addressing these challenges will require not just investment in advanced recycling technologies, but a clear capacity-building strategy-including local workforce training, technology transfer agreements, and partnerships with international institutions. Moreover, the implementation of robust safety protocols must go hand-in-hand with formal regulatory compliance, including strict monitoring, enforcement of occupational health standards, and penalties for environmental breaches. These steps are essential to ensure that safety is not treated as a voluntary commitment but as a legal obligation embedded in Kenya's industrial policy.

Finding 3: Prepare for a Multifaceted Regulatory Environment

Both the Australian and U.S. examples reveal the necessity of navigating a diverse regulatory landscape. In Australia, regulatory measures include initiatives such as the battery stewardship program and B-cycle schemes, while in the U.S., federal mandates like the RCRA and DOT's Hazardous Materials Regulations operate alongside varied state-level policies. This

⁸¹ Pipeline and Hazardous Materials Safety Administration (PHMSA), "Transporting Lithium Batteries" *PHMSA*, 12 October 2023—<https://www.phmsa.dot.gov/lithiumbatteries> on 30 January 2025.

multiplicity underscores the importance of developing comprehensive compliance strategies that address both local and international standards.

Conclusion

For a prospective investor, the international comparisons show that early entry into a developing regulatory environment-like Kenya's-can offer significant strategic advantages, from shaping policy to benefiting from early incentives. However, lithium-ion battery recycling is inherently complex and hazardous, requiring not only advanced technology but also strong compliance systems and skilled local labour. These must be developed in tandem with operations.

Crucially, while Kenya offers potential, governance risks cannot be ignored. Regulatory capture, corruption, and political interference have historically undermined promising sectors. Any investment plan must therefore include robust legal safeguards, active engagement with regulators, and partnerships that insulate operations from political volatility. Success will depend not just on navigating environmental and technical challenges, but on understanding-and mitigating-Kenya's political economy realities.

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