

The potential of the African Green Minerals Strategy in facilitating regional cooperation to develop electrical vehicles and battery value chains in Southern and East Africa

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Abstract: *This chapter situates Africa within global value chains for transition minerals and highlights the shift toward energy systems powered by zero-carbon technologies. The chapter draws on political economy and regional integration perspectives to assess how green industrialisation strategies can reshape Africa's role in these value chains. The main analysis explores the African Green Minerals Strategy (AGMS) as a vehicle for driving economic diversification and regional cooperation, illustrated through initiatives such as the Democratic Republic of the Congo-Zambia Memorandum of Understanding on developing battery value chains. This discussion is linked to the growing adoption of electric vehicles (EVs) in Southern and East Africa, where decarbonising transport systems aligns with opportunities for value addition in battery and EV manufacturing. Based on this analysis, the recommendations highlight the need for coherent policy alignment, infrastructure investment, and regional collaboration*

frameworks to enhance competitiveness and capture greater value within Africa.

1 Introduction

To meet its targets for reducing greenhouse gas emissions (GHG), the transport sector requires transformational change. According to the Paris Agreement, 195 countries agreed to limit global warming to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1,5°C.¹ Globally, the transport sector, including aviation and shipping, accounts for approximately 7,5 Gt of CO₂ emissions, about 28 per cent of global final energy demand, 14 per cent of economy-wide global anthropogenic GHG emissions, and an estimated 23 per cent of emissions due to fuel combustion.² Furthermore, the transport sector emissions continue to increase compared to other sectors due to demographic, behavioural and economy-driven transformations, which lead to large increases in the demand for transport, especially in the Global South.³ Since law and policy in the transport sector influence the demand and type of transport being used, public policy in the next

1 United Nations Framework Convention on Climate Change Paris Agreement, 2015, http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf (accessed 12 September 2025).

2 International Energy Agency *Energy technology perspectives 2017: Catalysing energy technology transformations*, (2017), https://iea.blob.core.windows.net/assets/a6587f9f-e56c-4b1d-96e4-5a4da78f12fa/Energy_Technology_Perspectives_2017-PDF.pdf (accessed 12 September 2025).

3 F Creutzig and others 'Transport: A roadblock to climate change mitigation?' (2015) 350 *Science* 911-912.

five to ten years will determine whether we are set on a course for a high or low-carbon transport future,⁴ especially in the Global South.

In Africa, electrification of the vehicle fleet presents an opportunity to reduce the carbon footprint from the transport sector. From a functional perspective, electric vehicles (EVs) can be used to improve a country's energy security, achieve sustainable development, and meet the requirements of various national and regional development goals.⁵ This is because EVs are approximately three times more efficient than internal combustion engines and also provide benefits such as improving air quality and noise pollution.⁶ Most importantly, the justification for the uptake of EVs is also pertinent for the African continent due to the fact that some of the base components of EVs, such as lithium-ion batteries, are produced from metals that are abundant in the continent and have been deemed 'critical' in the global decarbonisation agenda. Therefore, these natural resources present an opportunity for Africa to develop its value chains and make a significant contribution in decarbonising transport sectors.

Against this background, this chapter considers the notion of regionalism in facilitating economic and social development for Africa within the transition minerals discourse. The chapter spotlights the African Green Minerals Strategy (AGMS) to analyse how far it facilitates regional cooperation to develop EV and battery

4 S Gota and others 'Decarbonising transport to achieve Paris Agreement targets' (2019) 12 *Energy Efficiency* 363-386.

5 B Xu and others 'Have electric vehicles effectively addressed CO2 emissions? Analysis of eight leading countries using quantile-on-quantile regression approach' (2021) 27 *Sustainable Production and Consumption* 1206.

6 K Glitman and others 'The role of electric vehicles in a decarbonised economy: Supporting a reliable, affordable and efficient electric system' (2019) 32 *Electricity Journal* 106.

value chains to decarbonise the transport sectors in South Africa and Kenya. The central argument is that if successfully implemented, the AGMS presents immense opportunities for intra-Africa trade and economic development within the mining and transport sectors in Africa, thereby promoting a transformative pathway for Africa to move beyond export-driven models toward sustainable industrialisation.

The chapter is based on a desktop literature review related to Africa's participation in the global transition minerals value chains and the implementation of the AGMS. The research draws on a wide range of sources, including academic articles, government reports, international policy frameworks, industry analyses and publications from regional institutions such as the African Union (AU). Comparative case studies of Kenya and South Africa are used to illustrate the potential growth of the EV sector, while the Democratic Republic of the Congo (DRC)-Zambia Memorandum of Understanding on battery value chain development is discussed to show how such regional cooperation is unfolding in practice to ensure that Africa potentially participates beyond extraction in the transport sector. Furthermore, the chapter employs a qualitative political economy approach to identify key themes, policy patterns and governance challenges that shape the prospects for green industrialisation and regional integration in Africa's transition minerals sector. Following this introduction, the chapter discusses the AGMS and its approach to regional natural resource governance. Thereafter, the chapter discusses the EV market, policies and prospects and will rely on the case studies of South Africa and Kenya to highlight the different trajectories, similarities and gaps identified in the market. As a proposal to address some of the gaps, the chapter will turn to critically analyse the DRC-Zambia Battery Initiative and

its implications for the regional EV value chains. Finally, the chapter provides recommendations and a conclusion.

2 The African Mining Vision and the African Green Minerals Strategy

Africa houses approximately 30 per cent of the world's transition mineral reserves and currently is a major producer of several of these minerals, including cobalt, lithium, copper, manganese and rare earth elements.⁷ For example, the DRC, Madagascar and Morocco have over 50 per cent of global deposits and produce approximately 70 per cent of cobalt, a vital component in the development of battery storage technologies and EVs.⁸ Guinea has abundant bauxite resources, which account for approximately 24 per cent of global deposits and produce approximately 23 per cent of global production of the mineral.⁹ Bauxite is an important component in the production of solar PVs. South Africa and Zimbabwe together account for approximately 92 per cent of global platinum group metals reserves, with both countries generating approximately 82 per cent of platinum globally in 2022.¹⁰ Madagascar, Mozambique and Tanzania, which account for more than one-fifth of the world's graphite reserves, will play a critical role in the development of lithium-ion batteries.

In this context, the priorities of the African Mining Vision (AMV) are a product of the longstanding aspirations of African

7 NS Ouedraogo & JMM Kilolo 'Africa's critical minerals can power the global low-carbon transition' (2024) 6 *Progress in Energy* 4.

8 United States Geological Survey (USGS) *Mineral Commodity Summaries* 2023.

9 As above.

10 Platinum group metals are critical for reducing carbon intensive and root sectors, as well as generating green hydrogen.

governments to pursue an alternative development path that prioritises the development needs and future of the continent.¹¹ The AMV is a ‘pathway, formulated by African nations themselves, that puts the continent’s long-term and broad development objectives at the heart of all policy making concerned with mineral extraction’,¹² intended to facilitate economic transformation in the resource-rich region. To operationalise the AMV, the AMV Action Plan prioritises nine clusters, which include mining revenues and mineral rents management; geological and mining information systems; building human and institutional capacities; artisanal and small-scale mining; mineral sector governance; research and development; environmental and social issues; linkages and diversification and mobilising mining; and infrastructure investment.¹³ However, the implementation of the AMV has fallen short mainly due to the slow domestication process of the member states.¹⁴ Moreover, operationalising the AMV’s nine programme clusters and assuring their lasting effectiveness would require governments to abandon rent-seeking practices linked to mining and resource extraction more generally, a practice that persists to date.¹⁵

11 African Union ‘Africa Mining Vision (2009)’, https://au.int/sites/default/files/documents/30995-doc-africa_mining_vision_english_1.pdf (accessed 5 September 2025).

12 As above.

13 As above.

14 Africa Centre for Energy Policy ‘Reviving the sleepy vision: An evaluation of the implementation status of the Africa Mining Vision’ (2017) 1,0 <https://acep.africa/wp-content/uploads/2023/03/AMVPaper.pdf> (accessed 6 January 2026).

15 G Hilson ‘The Africa Mining Vision: A manifesto for more inclusive extractive industry-led development?’ (2020) 41 *Canadian Journal of Development Studies/Revue canadienne d’études du développement* 419.

As part of the AMV architecture, in 2025 the AU launched the AGMS. The rationale for the AGMS is to complement existing frameworks for mineral-based development, with a particular emphasis on the opportunities and risks for Africa arising from the broader context of climate change, transitioning to a low carbon future and incorporating the digital economy.¹⁶ The AGMS is directed by the vision for green growth across the continent that is a wholly inclusive economic growth and development path that is low-carbon, climate-resilient, resource-efficient, and maintains and enhances biodiversity and ecosystems.¹⁷ The criteria for defining the scope for minerals to include in the AGMS is minerals that are used in clean energy technologies and green industries; and minerals that are feedstocks into mining supply chains and equitable industrialisation.¹⁸

Anchored on the foundation of the AMV, the AGMS shares the aspirational vision of ensuring that African countries scale up in global value chains especially for the development of battery storage technologies that are pivotal in low-carbon pathways in the transport sector. The expectation is for the continent to take full advantage of its abundant mineral endowment to drive its own industrialisation and structural transformation and decarbonising GHG intensive sectors such as energy and transport.¹⁹ The overall goal of the AGMS is to direct mineral resource actors to boost local content for mining

16 African Minerals Development Centre (AMDC) *Africa's Green Minerals Strategy* 6, https://au.int/sites/default/files/documents/44539-doc-AGMS_Final_doc.pdf (accessed 5 September 2025).

17 AMDC (n 16) 12.

18 AMDC (n16) 13.

19 K Busia & C Akong 'The African Mining Vision: Perspectives on mineral resource development in Africa' (2017) 8 *Journal of Sustainable Development, Law and Policy* 163.

inputs and use the continent's minerals as feedstock to develop green industries that optimise opportunities created by climate change, the energy transition, the digital economy, and Africa's renewable energy potential to power the continent for productive and consumptive purposes.²⁰ This calls for mutually supportive actions from a wide range of mineral industry stakeholders, notably, but not limited to, policy makers, government officials, training institutions, development partners, civil society, firms and investors. Pertinent to achieving these objectives will be steps that include:

- (1) increasing the local manufacture of inputs (capital goods, consumables) into mining and the processing of green minerals and providing more opportunities for local stakeholders to be part of the value chains, including through business and employment opportunities;
- (2) channelling an expanding portion of mineral feedstocks into manufacturing industries that add value to raw materials and to strengthen the value-chains and intra-industry linkages;
- (3) growing the number of STEM graduates and technicians for green industries;
- (4) increasing budgets for research, development and innovation applied to green minerals extraction and their use in green industries;
- (5) expanding local manufacture of modules and components for batteries, EVs and renewable energy equipment and increasing local content over time;

20 AMDC (n 16) 16.

- (6) encouraging support for a common African external tariff on green mineral extraction inputs and mineral processing into manufactured products; and
- (7) addressing the energy deficit and transport challenges by enhancing access to affordable and reliable energy and mobility.²¹

In terms of advancing regionalism in Africa in the context of transition minerals, the AGMS advocates increasing intra-African trade within a single market for goods and services, facilitated by movement of persons to deepen the economic integration of the African continent. For the AGMS, the African Continental Free Trade Area (AfCFTA) could underpin the development of a truly African AGMS that can access the huge African markets for green mineral value-chain products defined by comprehensive rules of origin (currently under discussion) to protect African value addition with a common external tariff.²² This will be especially important in the development of battery components for EVs and other renewable energy storage technologies needed to decarbonise sectors such as transport in Africa.

Furthermore, public higher education and research institutions are viewed as key enablers of economic growth by preparing graduates for careers in technical fields needed by industry. Work is underway at the African Centre of Excellence for Advanced Battery Research/Centre African d' Excellence pour les Batteries en RD Congo at the University of Lubumbashi, as a model for investing in the human capital needed for an African battery industry. The mandate of the Centre is to create skills and competencies needed

²¹ AMDC (n 16) 17.

²² AMDC (n 16) 18.

by the battery industry as well as to support the emergence of a competitive battery, EV and renewable energy value-chain in Africa. The Centre is working on curriculum development for Master's and PhD programmes with the Ministry of Higher Education. The Centre is mandated to support the cross-border special economic zone that will be established under the bilateral Republic of Zambia-DRC Battery Council and is determined to ensure both countries benefit more from their green minerals industries by manufacturing products rather than exporting raw materials.²³

As with the AMV, the AGMS is not immune from common challenges facing industrial development relating to weak institutions, policy misalignment, lack of infrastructure or reliable energy, to name a few.²⁴ It is thus imperative for the successful implementation of the AGMS that countries accelerate efforts to domesticate the AMV through publishing their Country Mining Visions to lay a solid foundation on responding to existing challenges in mining sectors as prioritised in the AMV. However, the AGMS is still new, and its successful implementation is yet to be seen, nevertheless, it provides significant opportunities for regional cooperation and support.

23 AMDC (n 16) 34.

24 <https://african.business/2024/02/resources/infrastructure-deficit-continues-to-hold-back-african-mining> (accessed 6 January 2026).

3 The EV market, policies and prospects: The cases of South Africa and Kenya

3.1 Adoption trajectories: Pioneers and nascent markets

The global transition to electric mobility is no longer a distant prospect but a present-day reality, and Africa is steadily embracing this transformation. While starting from a low base, the trajectory for EV adoption across Africa has gained momentum over the years. The continent-wide EV market is projected to experience exponential growth, expanding from an estimated US\$0,45 billion in 2025 to US\$4,2 billion by 2030, which represents a compound annual growth rate of 56,3 per cent.²⁵ This surge is part of a broader trend in emerging and developing economies (excluding China), which saw a remarkable 60 per cent year-on-year increase in electric car sales in 2024. This growth is largely attributable to a combination of supportive policy incentives and the increasing availability of relatively affordable EV models from Chinese original equipment manufacturers.²⁶ Within this dynamic continental landscape, Kenya and South Africa stand out as two of the most promising markets. However, they are not simply two points on the same growth curve. Instead, they represent two fundamentally different archetypes of EV market development, each shaped by its unique economic structure, policy priorities, consumer base and energy infrastructure. Kenya exemplifies a bottom-up, needs-driven market, where electrification

25 <https://www.mordorintelligence.com/industry-reports/africa-electric-vehicle-market> (accessed 1 November 2025).

26 International Energy Agency *Trends in electric car markets* (2025), <https://www.iea.org/reports/global-ev-outlook-2025/trends-in-electric-car-markets-2> (accessed 30 October 2025).

is being rapidly adopted by a large commercial base seeking immediate economic benefits. South Africa, by contrast, represents a top-down, industry-driven transition, where the strategic imperative is to retool a massive, established automotive manufacturing sector to remain globally competitive in a new technological era. Understanding the nuances of these divergent paths is essential for any stakeholder (policy maker, investor or manufacturer) seeking to navigate and capitalise on the immense potential of electric mobility in Africa, given its rich endowments of minerals that are indispensable in the decarbonisation of transport sectors.

South Africa is the region's most mature market for EVs. In the first half of 2025, 7 129 EVs were sold, but this figure is dominated by traditional hybrids (5 771 units), with EVs comprising a much smaller share at 570 units.²⁷ The market is heavily skewed toward passenger cars, which account for over 71 per cent of the sector's revenue.²⁸ A diverse range of models is available, from budget-friendly Chinese imports priced under US\$15,000 to premium European brands.²⁹ However, the high upfront cost and import duties remain the primary barrier to widespread adoption of EVs.³⁰

27 JA Kuuire 'Electric vehicle sales still strong in South Africa' *The Labari Journal* 18 July 2025, <https://labarijournal.com/electric-vehicle-sales-still-strong-in-south-africa/> (accessed 25 September 2025).

28 <https://www.grandviewresearch.com/horizon/outlook/electric-vehicle-market/south-africa> (accessed 25 September 2025).

29 T Mokoena 'Electric vehicle prices in South Africa: 2025 Comparison' *Imotonews* 1 September 2025, <https://imotonews.co.za/2025/09/01/electric-vehicle-prices-in-south-africa-2025-comparison/> (accessed 25 September 2025).

30 T Nkosi 'Buy electric cars in South Africa: 2025 guide to prices, models and delivery' *EV24* 14 September 2025, <https://www.ev24.africa/buy-electric-cars-in-south-africa-2025-guide-to-prices-models-delivery/> (accessed 25 September 2025).

Kenya is experiencing an explosive growth curve in EVs, driven by favourable tax incentives. The number of registered EVs surged from just 2 694 in 2023 to over 9 000 by May 2025.³¹ The defining characteristic of Kenya's EV market is its overwhelming reliance on the two and three-wheeler segment. These vehicles constitute approximately 90 per cent of all EV registrations in the country.³² This is not a market driven by private passenger car owners, but by the commercial sector, specifically the motorcycle taxi industry known as *boda boda*. This sector is a cornerstone of Kenya's informal economy and urban transport system, with an estimated fleet of over 2.2 million motorcycles, representing more than one-third of all urban rides.³³ The sheer scale of this existing commercial fleet provides an immediate, large addressable market for electrification, making the economic viability for individual riders the single most critical driver of adoption. Fully electrifying this fleet could cut the country's transport emissions by as much as 85 per cent, leveraging its renewable-heavy grid.³⁴

31 T Nkosi 'Kenya EV import guide 2025: Costs, Incentives and step-by-step process' *African EV Market News* 19 July 2025, <https://www.ev24.africa/kenya-ev-import-guide-2025-costs-incentives-step-by-step-process/> (accessed 25 September 2025).

32 D Kamau 'Kenya's EV future: Is now the right time to switch?' *Auto Mag* 17 July 2025, <https://automag.co.ke/2025/07/14/kenyas-ev-future-is-now-the-right-time-to-switch/> (accessed 25 September 2025).

33 As above.

34 Ministry of Roads and Transport 'Draft National E-Mobility Policy, Kenya, March 2024 3-4, https://transport.go.ke/sites/default/files/Draft%20National%20e-Mobility%20Policy_For%20Circulation%2027.03.2024.pdf (accessed 5 January 2026).

3.2 Analysis of domestic policies facilitating the adoption of EVs in South Africa and Kenya

3.2.1 *South Africa*

As the continent's most developed automotive manufacturing hub, South Africa's approach is shaped by the need to transition its existing automotive industry. The Electric Vehicles White Paper of 2023 lays out a roadmap for this shift, with a target of 2035 for significant integration.³⁵ The policy is heavily supply-side oriented, anchored by a significant incentive for manufacturers: a 150 per cent tax deduction on investments in EV and hydrogen vehicle production, set to begin in March 2026.³⁶ This is complemented by proposed buyer subsidies, ranging from R20 000 for low-income households to over R80 000 for fleet owners, in an effort to stimulate demand.³⁷ However, this supportive stance is undermined by a significant policy contradiction. For instance, imported EVs face a 25 per cent customs duty, which is higher than the 18 per cent duty on internal combustion engine vehicles from Europe, a major source of imports. This tariff structure inflates the already high upfront cost of EVs, acting as a direct brake on market growth.³⁸

Severe electricity shortages, resulting in scheduled, rolling black-outs known as load shedding, represent a profound barrier to EV

35 Kuuire (n 27).

36 T Nkosi 'Government incentives for EV buyers in Africa' *EV24* 27 April 2025, <https://www.ev24.africa/government-incentives-for-ev-buyers-in-africa/> (accessed 25 September 2025).

37 South African Department of Trade, Industry and Competition 'Electric Vehicles White Paper' December 2023, <https://www.thedtic.gov.za/wp-content/uploads/EV-White-Paper.pdf> (accessed 5 September 2025).

38 Nkosi (n 36).

adoption in South Africa. This energy crisis, which has seen power being cut for several hours a day, directly impacts the ability of EV owners to charge their vehicles reliably.³⁹ It disrupts overnight charging schedules, renders public charging stations unusable during outages, and transforms range anxiety into a more acute charging anxiety.⁴⁰ A 2023 survey identified the impact of load shedding as one of the top drawbacks to EV ownership, alongside high purchase cost and the lack of charging infrastructure.⁴¹ This is also one of the reasons why the diversification of South Africa's energy mix to include more renewable energy becomes crucial. Not only would it address the mismatch between supply and demand, but it could also encourage the uptake of EVs in the country.

3.2.2 *Kenya*

In stark contrast to South Africa, Kenya's strategy is fundamentally demand-driven and can be characterised as a leapfrog model.⁴² Kenya has focused on creating a new market from the ground up by prioritising consumer affordability. As such, the government has set an ambitious target for EVs to constitute 5 per cent of all new vehicle registrations by 2025, which is also in alignment with the country's GHG emissions reduction commitments.⁴³ To achieve this, it has

39 OE Oni & OM Longe 'A study on electric vehicle footprint in South Africa' (2024) 17 *Energies* 1-37.

40 Oni & Longe (n 40).

41 D Mathews 'Is electricity load shedding the biggest obstacle to the adoption of electric cars in South Africa?' 15 February 2021, <https://www.stressfreecarrental.com/en/south-africa/car-hire-electric> (accessed 3 November 2025).

42 World Bank Group and China Development Bank *Leapfrogging: The key to Africa's development? From constraints to investment opportunities* (2017) xvii.

43 Kamau (n 32).

implemented some of the region's most aggressive demand-side incentives, including a complete waiver of the 25 per cent import duty on fully electric vehicles, a VAT exemption, and a reduced excise duty of 10 per cent.⁴⁴ These policy interventions have had a direct and dramatic impact, fuelling a boom in the importation and adoption of electric motorcycles, which are central to the country's public transport sector and now account for nearly 90 per cent of the nation's EV fleet.⁴⁵

One of Kenya's most significant competitive advantages in the e-mobility race is its electricity grid. As of 2024, over 90 per cent of the country's power was generated from renewable sources, primarily geothermal, hydropower and wind.⁴⁶ This means that, unlike South Africa that faces enormous challenges of supply and demand of electricity, charging an EV in Kenya results in near-zero tailpipe and well-to-wheel emissions. This strong green energy profile not only helps the country meet its climate targets by decarbonising the transport sector, which accounts for 11 per cent of national CO₂ emissions, but also makes it an attractive destination for climate-focused international investment in the sector.

In March 2024, the Draft National E-Mobility Policy was published, and it establishes a comprehensive roadmap for the sector.⁴⁷ Its vision is to position Kenya as a regional leader in the transition to electric mobility and it sets ambitious targets, including having EVs constitute 5 per cent of all newly registered vehicles by 2025 and

44 Nkosi (n 36).

45 Kamau (n 32).

46 Kenya Ministry of Roads and Transport 'Draft National E-Mobility Policy, Kenya' March 2024, https://transport.go.ke/sites/default/files/Draft%20National%20e-Mobility%20Policy_For%20Circulation%2027.03.2024.pdf (accessed 3 November 2025).

47 As above.

achieving 100 per cent EV adoption by 2050. This framework aligns with Kenya's broader climate goals, such as its nationally determined contribution to cut CO₂ emissions by 32 per cent by 2030.⁴⁸ The policy covers all modes of transport and aims to create an enabling environment for EV growth and local manufacturing.

Table: *Summary of legislation and policy on EV uptake in South Africa and Kenya*

FEATURE	SOUTH AFRICA	KENYA
EV Policy Status	White Paper (2023), EV Policy (2025)	Finance Bill 2025, National Targets
Import Duty (EV)	25% (vs 18% for ICE from EU)	0% (vs 25% for ICE)
VAT/Excise Duty	Standard VAT; Carbon tax exemption	VAT exempt; 10% Excise Duty
Key Buyer Subsidies	R20k-R100k proposed	N/A (focus on tax cuts)
Key Mfg. Incentives	150% tax deduction on investment	N/A
Local Content Rules	Auto industry requirements	N/A

⁴⁸ Ministry of Environment, Climate Change and Forestry 'Kenya's Second Nationally Determined Contribution (2031-2035)' 2025, https://unfccc.int/sites/default/files/2025-05/KENYAS%20SECOND%20NATIONALLY%20DETERMINED%20CONTRIBUTION%202031_2035.pdf (accessed 30 November 2025).

FEATURE	SOUTH AFRICA	KENYA
Stated Targets	30% of sales electric by 2030	5% of registrations electric by 2025

Source: Author’s compilation from various sources, as per citations in text

A comparative analysis of the above (see Table) shows that both South Africa and Kenya recognise the need to decarbonise the transport sector but have different strategies on how to achieve this. For starters, Kenya has implemented a *demand-side pull strategy*. The government’s primary policy levers are designed to make EVs cheaper for the end user, thereby stimulating demand. Moreover, the elimination of VAT and the reduction of excise duties directly lower the purchase price, addressing the main barrier to adoption. This approach is well-suited to a market where affordability is a significant concern, suggesting stronger alignment with everyday mobility needs, such as public transport and private commuting. South Africa, on the other hand, has opted for a *supply-side push strategy*. The EV White Paper’s main instrument is the 150 per cent tax incentive for manufacturers, designed to encourage local production. In this instance, South Africa prioritises protecting the country’s industrial base and export capacity, operating on the assumption that securing local production is the necessary first step. While this supports industrial growth and protects existing jobs, it does little to make EVs more attainable for most citizens. As a result, widespread EV adoption – and, thus, tangible progress in decarbonising everyday transport – may be delayed, limiting the impact on actual mobility needs in the short to medium term.

Moreover, unlike Kenya, the lack of consumer incentives creates a significant disconnect: The government is incentivising the supply of

EVs that the majority of the domestic market cannot demand due to high costs. The next part of the chapter interrogates the potential of the DRC-Zambia Battery Initiative to address some of the challenges that impede the uptake of EVs, as seen in the case of South Africa and Kenya.

4 DRC-Zambia Battery Initiative and its implications for the regional EV value chains

The cooperation agreement between the DRC and Zambia is a representation of one of the most ambitious industrial policy initiatives in Africa. The memorandum of understanding (MoU) is aimed at leveraging the region's unparalleled endowment of transition minerals, primarily the DRC's dominance in cobalt and Zambia's vast copper reserves.⁴⁹ The initiative seeks to address the age-old paradigm of raw material exportation without any value addition from source. By establishing a vertically integrated value chain for EV batteries, beginning with the production of battery precursors, the two nations aspire to capture a significant share of a global market projected to be worth US\$46 trillion by 2050.⁵⁰ The central implementation mechanism for the battery value chain is the

49 United Nations Economic Commission for Africa 'Zambia and DRC sign cooperation agreement to manufacture electric batteries' April 2022, <https://www.uneca.org/stories/zambia-and-drc-sign-cooperation-agreement-to-manufacture-electric-batteries#:~:text=More%20in%20Archives-,Zambia%20and%20DRC%20Sign%20Cooperation%20Agreement%20to%20manufacture%20electric%20batteries,Conference%20Centre%20in%20Lusaka%20yesterday> (accessed 9 March 2026).

50 Global Battery Alliance & World Economic Forum 'A vision for sustainable battery value chain in 2030: Unlocking the full potential to power sustainable development and climate change mitigation' September 2019, https://www3.weforum.org/docs/WEF_A_Vision_for_a_Sustainable_Battery_Value_Chain_in_2030_Report.pdf (accessed 5 January 2026).

establishment of dedicated special economic zones. An agreement to create these zones to produce battery precursors, batteries, and eventually EVs was signed by the DRC, Zambia, UNECA and the African Export-Import Bank in 2023, in Kinshasa.⁵¹ This quadripartite agreement provides the legal and operational framework for developing the necessary industrial infrastructure. The initial and most pragmatic focus of the special economic zones is the production of nickel, manganese and cobalt battery precursors.⁵² By targeting this midstream segment, the initiative aims for a more achievable entry point into the value chain, leveraging the region's direct access to raw materials without immediately attempting to compete with established Asian and Western giants in the highly complex and capital-intensive final stages of battery cell manufacturing.⁵³

The most direct and strategically important benefit of the initiative for the EV industry is the potential to create a new, major source of battery precursors outside of Asia. This is especially important considering the growing EV sector in countries such as South Africa and Kenya. Moreover, leveraging the AGMS, the initiative presents an opportunity to service the regional market for EVs, thereby growing the sector through localised production. Currently, the global supply chain is precariously concentrated, with China dominating the refining of cobalt and the production

51 F Soulé 'What a US-DRC-Zambia electric vehicle batteries deal reveals about the new US approach toward Africa' *Carnegie Endowment for International Peace* (2023), <https://carnegieendowment.org/research/2023/08/what-a-us-drc-zambia-electric-vehicle-batteries-deal-reveals-about-the-new-us-approach-toward-africa?lang=en> (accessed 2 November 2025).

52 <https://www.mcti.gov.zm/?p=6200> (accessed 2 November 2025).

53 As above.

of precursor materials.⁵⁴ Moreover, the establishment of a large-scale precursor plant in the Copperbelt potentially offers battery manufacturers and automotive original equipment manufacturers a vital opportunity to diversify their sourcing, mitigating geopolitical risks and enhancing supply chain resilience.⁵⁵

This localisation offers two potential competitive advantages. First, it potentially leads to lower production costs for precursors. By processing minerals at the source, the facility would eliminate the significant logistical costs associated with shipping bulky raw ore and concentrate across continents. Combined with access to the region's vast and largely untapped hydroelectric power potential, this could make African precursors highly cost competitive.⁵⁶ Second, it presents an opportunity to create a greener supply chain realising the ambitions of the AGMS. Processing powered by clean hydropower would have a significantly lower carbon footprint compared to the predominantly coal-powered refining facilities in Asia, a key consideration for original equipment manufacturers striving to reduce the lifecycle emissions of their vehicles.⁵⁷

54 S O'lang & T Scurfield 'The DRC-Zambia battery plant: Key considerations for governments in 2024' Natural Resource Governance Institute 20 December 2023, <https://resourcegovernance.org/publications/drc-zambia-battery-plant-key-considerations-governments-2024> (accessed 2 November 2025).

55 As above.

56 African Development Bank 'Rich in green minerals, African countries eye booming electric vehicle and clean energy market worth trillions of dollars' 24 October 2023, <https://www.afdb.org/en/news-and-events/rich-green-minerals-african-countries-eye-booming-electric-vehicle-and-clean-energy-market-worth-trillions-dollars-65241> (accessed 30 October 2025).

57 United Nations Economic Commission for Africa 'Experts call on the need to speed up financing and other mechanisms for the Battery Electric Vehicle Special Economic Zone' 5 October 2023, <https://www.uneca.org/stories/experts-call-on-the-need-to-speed-up-financing-and-other-mechanisms-for-the-battery-electric> (accessed 2 November 2025).

While the ongoing analysis is positive, there will be challenges to the realisation of the DRC-Zambia initiative. To critically assess the initiative's potential, it is essential to place its ambitions within the context of the global competitive landscape. The world of battery manufacturing is dominated by a few key players, and any new entrants face formidable challenges such as:

- China's unassailable lead:⁵⁸ China is, and in the foreseeable future remains, the undisputed hegemon of battery manufacturing. By 2030, Chinese companies are forecasted to control nearly 70 per cent of global battery production capacity, equivalent to over 6 200 gigawatt-hours (GWh). Industry giants such as CATL and BYD dominate not just through scale, but through complete vertical integration, controlling every step from mineral processing to final battery pack assembly.⁵⁹
- The rise of Western hubs: Spurred by industrial policies such as the USA's Inflation Reduction Act⁶⁰ and the EU's Critical Raw Materials Act,⁶¹ a strategic imperative to secure supply chains, America and Europe are rapidly building their own domestic manufacturing capacity. The US is projected to be a distant but significant second to China. Europe, led by Germany and Hungary, is also on a steep growth trajectory,

58 B Tran 'Battery manufacturing capacity market data: Top countries and gigafactory expansions' 12 February 2026, <https://patentpc.com/blog/battery-manufacturing-capacity-market-data-top-countries-and-gigafactory-expansions> (accessed 3 November 2025).

59 As above.

60 <https://www.energy.gov/edf/inflation-reduction-act-2022> (accessed 9 March 2026).

61 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L_202401252 (accessed 9 March 2026).

attracting massive investments from both domestic firms and Asian giants such as CATL and SK On.⁶²

- The Copperbelt's niche strategy: The DRC-Zambia hub will not immediately compete with these established and emerging giants on sheer volume of GWh output in the near to medium term. Its strategic niche and competitive advantage will not be in mass-producing finished battery cells, but in positioning itself as the world's premier, large-scale source of vertically integrated, low-cost and low-carbon battery precursors. If it can successfully overcome its profound environmental, social and governance (ESG) challenges to offer verifiably ethical and traceable materials, it could become an indispensable supplier to the gigafactories in Europe and North America, rather than a direct competitor. Moreover, this would position it as a major player in the EV battery market in growing markets within its region.⁶³

While these challenges exist, the AGMS still holds significant potential to operationalise and strengthen the DRC-Zambia initiative and address some of these. The AGMS can be leveraged to create a continental green industrial zone through the African Union (AU)'s convening power which presents several compelling, technically sound advantages:

62 Benchmark 'Hungary set to be Europe's leading tier 1 battery producer this decade' 22 December 2022, <https://source.benchmarkminerals.com/article/hungary-set-to-be-europes-leading-tier-1-battery-producer-this-decade> (accessed 9 March 2026).

63 R Deberdt 'Will Congo move up the battery supply chain? Strategic capitalism, friendshoring, and localised manufacturing in the time of green transition' (2024) *The Extractive Industries and Society* 4-5.

- Regional integration and market expansion: Broader participation from countries such as Kenya, Tanzania, South Africa and Namibia would catalyse the creation of a larger, integrated market for green minerals and associated industries. This integration reduces trade barriers, harmonises standards and fosters cross-border supply chain efficiencies vital for economies of scale.⁶⁴
- Resource pooling and infrastructure development: Pooling mineral and energy resources across borders can make project financing and infrastructure development (rail, ports, power) more viable, attracting both public and private investment. Shared infrastructure reduces duplication and maximises utilisation for all countries in the region.⁶⁵
- Policy alignment and regulatory harmonisation: The AU's convening authority enables coordinated policy making, standardisation of environmental and ESG criteria, and alignment on investment incentives. This regulatory harmonisation lowers risk, improves responsible business conduct and increases the attractiveness for global investors.⁶⁶
- Technology transfer and skills development: Regional collaboration encourages the spread of advanced green industrial technologies and know-how. AU-led training programmes and research initiatives can uplift the technical workforce, ensuring local capacity meets international standards for the green industry.⁶⁷

⁶⁴ AMDC (n 16) 57.

⁶⁵ AMDC (n 16) 28.

⁶⁶ AMDC (n 16) 16, 18.

⁶⁷ AMDC (n 16) 33-34.

- Geopolitical leverage and negotiating power: A continent-wide industrial corridor backed by the AU enhances Africa's negotiating position in global value chains for green minerals and manufactured goods. Larger collective bargaining power can help secure fairer trade agreements and resist predatory practices from external actors.⁶⁸
- Environmental impact and sustainability: By coordinating at a regional or continental scale, environmental impacts can be minimised through shared best practices, joint monitoring and implementation of circular economy principles. This makes the industrial zone not just larger but also more sustainable and resilient.⁶⁹

By providing a continental policy framework that aligns mineral governance with the goals of industrialisation, green energy transition and value addition, the AGMS can aid in addressing the structural and coordination challenges that competitors have to contend with. The strategy's emphasis on harmonising regulations, promoting cross-border infrastructure, and mobilising green finance can facilitate the creation of a stable investment environment for the DRC-Zambia corridor. Moreover, its focus on ESG standards and responsible mineral value chains can enhance the MoU's global competitiveness and compliance with emerging international due diligence requirements. Importantly, through the AU's convening power, the AGMS can also attract broader regional participation, from neighbouring countries such as Tanzania, South Africa and Namibia, thereby scaling up the corridor into a continental green industrial zone. Ultimately, the AGMS offers both policy coherence

⁶⁸ AMDC (n 16) 8.

⁶⁹ AMDC (n 16) 77.

and institutional legitimacy to transform the DRC-Zambia MoU from a bilateral framework into a pan-African catalyst for sustainable battery manufacturing and green industrialisation.

5 Conclusion

While the AGMS clearly prioritises regional cooperation that takes full advantage of the continent's natural resources and the decarbonisation agenda, countries in Southern and East Africa should also align their priorities to achieve the same. Growing markets such as the EV sector that address multiple challenges of mobility and decarbonisation are set to benefit from the provisions of the AGMS. As observed, South Africa seems to be leading in the deployment of EVs and decarbonising the transport sector, but policy inconsistencies present threats to how quickly this can be done.⁷⁰ In a different trajectory, Kenya places affordability and context at the centre of its e-mobility strategy and offers tax incentives for two and three-wheeler EVs. These markets could grow exponentially in the next few years through the DRC-Zambia Battery Initiative which seeks to establish a vertically integrated value chain for EV batteries, beginning with the production of battery precursors.⁷¹ While this situation creates hope for an industrialised region, further enquiry is needed to investigate the energy sectors of the DRC and Zambia to assess their readiness to embark in such an audacious task to maximise on the growing EV sector.

70 Part 3.2.1 above.

71 Part 4 above.

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