How can the African continent benefit from the electrification of the automobile market?

August 2025, Jacques Bouchard, Senior Partner, Gattuso Bouchard Mazzone (attorneys in Canada).

A. Introduction

The global electric vehicle (EV) fleet surpassed the symbolic milestone of 25 million passenger vehicles in 2022[1]. In the first quarter of 2025 alone, 4.1 million EV's were sold - an increase of 29% over the same period the previous year, underscoring the global ambition to make electric transport a priority.

The recent US policy shifts favoring fossil fuels[2] will have a temporary cooling effect on the EV market, particularly due to the reductions in subsidies, and tariffs that disrupt the international supply chain, making it difficult to compete with IGF on cost. However, the growing awareness of the environmental cause should nonetheless lead many countries to place clean mobility at the heart of their policies. The broader environmental imperative that continues to drive many nations to prioritize sustainable mobility is reflected in reports such as *The Cost of Producing Battery Precursors in the DRC*, which mentions that "countries should think hard about how they can create economic added value and national jobs from this growth".

Africa holds a key position in this transformation. The continent possesses the world's largest reserves of minerals essential to the manufacture of batteries and electric vehicles: 55% of cobalt, 47.65% of manganese, 21.6% of natural graphite, 5.9% of copper, 5.6% of nickel, 1% of lithium and 0.6% of iron ore[3]. On average, Africa accounts for 30% of the world's reserves of critical minerals[4], an essential condition for the development of this market.

However, African nations have yet to benefit fully from this advantage, capturing approximately 40% of the revenues they should have generated from these resources[5].

This reality raises the fundamental question: **how can the African continent not only benefit from the electrification of the global automotive market but also develop a lucrative market in this area on its own territory?**

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[1] International Energy Agency (IEA), Avril 2023, *Global EV Outlook 2023 : Catching up with climate ambitions*, https://iea.blob.core.windows.net/assets/dacf14d2-eabc-498a-8263-9f97fd5dc327/GEVO2023.pdf

[2] Recently confirmed by H.R.1 119th Congress, May 2025: *One Big Beautiful Bill Act*, https://www.congress.gov/bill/119th-congress/house-bill/1

[3] United Nations Conference on Trade and Development (UNCTAD), May 24, 2024, *L'Afrique doit plus tirer profit des ses richesses minérales : la transition énergétique peuvent ouvrir la voie d'une nouvelle prospérité*, https://unctad.org/fr/news/lafrique-doit-plus-tirer-profit-des-ses-richesses- minerales-la-transition-energetique-peuvent

[4] Wenjie Chen, Nico Valckx, Athene Laws, April 29, 2024, International Monetary Fund (IMF), *Afrique subsaharienne : tirer parti de l'abondance des minerais essentiels*, https://www.imf.org/fr/News/Articles/2024/04/29/cf-harnessing-sub-saharan-africas-critical-mineral- wealth

[5] World Bank, May 10, 2023, PRESS RELEASE N°: 2023/067/AFR, *En maximisant les recettes tirées des ressources naturelles, les pays africains pourraient engranger d'importants bénéfices sur le plan des finances publiques et de l'environnement*, https://www.banquemondiale.org/fr/news/press-release/2023/05/09/maximizing-revenues-from-natural-resource-wealth-could-yield-big-fiscal-and-environmental-dividends-for-african-countrie

At present, international companies purchase raw materials in Africa, which are then shipped and sold abroad for much higher prices. In fact, processes such as crushing and grinding, mineral testing, concentration, dehydration, drying and processing - essential steps to increasing value to the products - are mainly conducted outside the continent, and therefore do not contribute to African revenues.

For example, bauxite sells for $65 a tonne, compared with $2,335 after conversion into aluminum[6].

China exemplifies the economic potential of value-added processing, as Beijing handles more than half the raw material processing for lithium and cobalt[7].

A strategy based on the desire to process raw materials and eventually produce batteries locally would therefore generate much greater gains for the continent. However, in order to ensure the viability of such a project, significant challenges persist; notably, the lack of infrastructure remains the major issue to overcome throughout the continent.

Since the early 2000s, several international agreements have been signed, and African countries have remained hopeful that these would result in the improvement of the necessary infrastructures. For example, a $6.2 billion minerals-for-infrastructure deal was signed between the Democratic Republic of Congo (DRC) and China in 2008[8], premised on the exchange of roads and other infrastructures for access to copper and cobalt reserves.

However, only a few years later, the President of the DRC, Felix Tshisekedi, criticized the agreement signed by his predecessor, noting that "the Chinese have made a lot of money and made a lot of profit thanks to this contract" before adding that, in return, "China has released less than a third of the infrastructure funds".[9]

That is why it is important to focus on the mistakes to avoid and the reflexes to develop, so as to strike a balance in international trade and ensure that every party wins:

- The first essential step would be to provide States with a framework for their international negotiations. This requires controlling and monitoring agreements and operations carried out on site in Africa. This would include, for example, the marking of minerals extracted and sold or traded, as part of an approach in which partners commit to carrying out at least one initial processing operation in the country, and if necessary, to building the required infrastructure.

- Following on from this, another area for improvement would be to set up specialized teams and services in the field of batteries and electric vehicles, in order to develop know-how, and increase local skills in research & development, processing and marketing. To achieve this goal, training, technology transfer and the mandatory use of local subcontractors would be essential tools.

- Finally, it could be useful to rally individual forces to the cause by creating an African alliance that promotes and advocates for the development of local activities and establishes partnerships, with the necessary governmental oversight, with international partners in the battery and electric vehicle industry.

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[6] Wenjie Chen, Nico Valckx, Athene Laws, April 29, 2024, International Monetary Fund (IMF), *Afrique subsaharienne : tirer parti de l'abondance des minerais essentiels*, https://www.imf.org/fr/News/Articles/2024/04/29/cf-harnessing-sub-saharan-africas-critical-mineral- wealth

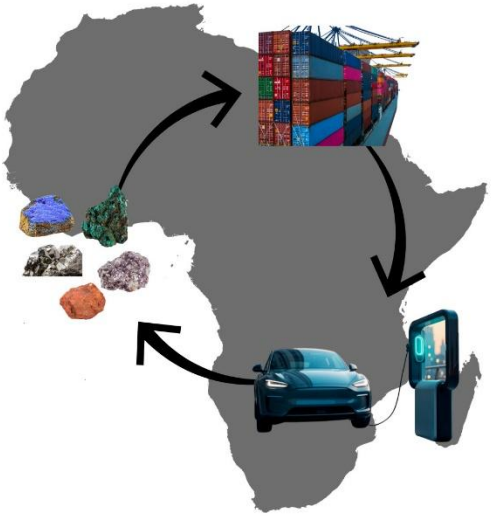
[7] Marie Toulemonde, June 28, 2024, Jeune Afrique, *Voitures électriques : l'Afrique doit transformer ses minerais pour profiter de la transition énergétique*, https://www.jeuneafrique.com/1581574/economie-entreprises/voitures-electriques-lafrique-doit-transformer-ses-minerais-pour-profiter-de-la-transition-energetique/

[8] African Resources Watch, January 22, 2023, *Minerais contre infrastructures avec la Chine, Tshisekedi accuse les chinois d'avoir fait beaucoup de profits et exige la réévaluation du « contrat siècle »*, https://afrewatch.org/minerais-contre-infrastructures-avec-la-chine-tshisekedi-accuse-les-chinois-davoir-fait-beaucoup-de-profits-et-exige-la-reevaluation-du-contrat-siecle/

[9] African Resources Watch, January 22, 2023, *Minerais contre infrastructures avec la Chine, Tshisekedi accuse les chinois d'avoir fait beaucoup de profits et exige la réévaluation du « contrat siècle »*, https://afrewatch.org/minerais-contre-infrastructures-avec-la-chine-tshisekedi-accuse-les-chinois-davoir-fait-beaucoup-de-profits-et-exige-la-reevaluation-du-contrat-siecle/

B. Some Possible Concrete Courses of Action:

1 - Localize the Supply Chain—Starting with First Transformation



African governments must prioritize domestic first transformation—the initial refining and processing of raw minerals into battery-grade materials. This shift would create more local jobs, enhance revenue, and give countries stronger negotiating positions, offering leverage in global supply chains.

Rather than exporting raw minerals, African countries should look to attract investment in battery manufacturing and component assembly. Thus, building regional supply chains for battery materials, electronics, and parts which will boost industrialization and resilience.

Countries like South Africa and Morocco already have auto manufacturing capabilities that could be retooled for EV production. New entrants—particularly startups—can focus on practical solutions for local transportation such as electric motorcycles, tuk-tuks, or buses tailored for African cities.

How to Ensure First Transformation Happens Locally:

- Legislation, Export Conditions and Policy Innovation:
    - Countries can introduce laws or regulations that restrict the export of raw minerals unless they've undergone a minimum level of domestic processing.
    - For instance, the Democratic Republic of Congo has attempted to implement policies that require local cobalt refining before export, to capture a larger share of revenues.

Progressive and coherent policies are essential to create a viable EV market. These may include:

- Tax incentives or reduced import duties for EVs and components;
- Financial incentives for local assembly and R&D;
- Mandates for fuel efficiency and emission reductions.

- Strategic Industrial Zones and Infrastructures:
    - Develop mineral processing and battery precursor parks near mining areas to lower logistics costs.
    - These zones can offer tax incentives, the requisite infrastructure, and energy access to attract investors in first-stage refining.

Widespread EV adoption hinges on the availability of charging infrastructure. Governments and private companies must invest in building reliable, accessible, and affordable charging stations, especially in urban centers and along major highways.

Integrating these stations with off-grid solar or mini-grids can address the challenge of weak national grids while promoting energy access.

- Public-Private Partnerships:
    - Collaborate with foreign companies under joint ventures that mandate local transformation facilities.
    - Governments should negotiate agreements that require training of local staff, technology transfer, and reinvestment in local communities.

- Regional Collaboration:
    - Through platforms like the African Continental Free Trade Area (AfCFTA) or regional economic communities, countries can collaborate in pooling resources and expertise across the different stages of production—for instance, one country refines lithium, another manufactures cells—building a pan-African EV ecosystem.

- Financing and Risk Mitigation Tools:
    - African development banks and international finance institutions should offer risk guarantees, finance, and concessional loans to de-risk mineral transformation projects.

- Capacity Building, Skills Training and Local Innovation:
    - Developing technical and engineering capacity is essential. Institutions should partner with universities and vocational schools to train workers in mineral refining and battery chemistry.

The EV transition presents opportunities not just for manufacturers but also for digital platforms, energy companies, and service providers. African startups are emerging with innovative solutions in vehicle financing, battery swapping, and fleet management.

Governments and development institutions can support this innovation through seed funding, innovation hubs, and technical training to nurture this ecosystem and amplify the local economic impact.

By securing at least the first transformation of minerals on African soil, the continent not only captures more economic value but also builds the foundation for full participation in the EV and battery supply chains.

2 - Driving Change: How Africa Can Harness the Electric Vehicle Revolution

As the global automotive industry accelerates toward electrification, Africa finds itself at a crucial juncture. With abundant natural resources, growing urban populations, and rising energy needs, the continent is uniquely positioned to gain enormously from the electric vehicle (EV) transition. However, the question is not only how Africa can benefit from this transformation—but also how it can foster and lead its own lucrative EV market.

- The Global Shift Toward Electrification:

The electrification of transport is no longer a distant goal. Governments and private corporations alike are investing billions in EV technology, infrastructure, and supply chains to reduce carbon emissions, improve air quality, and decrease dependence on fossil fuels.

Electric vehicles are expected to account for more than half of new car sales globally by 2040. This growth is spurred by a combination of regulatory pressure, falling battery costs, and consumer demand. While most of this momentum is concentrated in North America, Europe, and Asia, Africa should not be a passive observer—it is a potential powerhouse in the EV ecosystem.

- Strategic Advantages for Africa:

- A Wealth of Critical Minerals

Africa is home to vast reserves of the very minerals needed to power the EV revolution: cobalt from the Democratic Republic of Congo, lithium from Zimbabwe, manganese from South Africa, and graphite from Mozambique and Madagascar. These resources actually form the backbone of lithium-ion battery production.

By leveraging this natural wealth through better resource governance and local processing, African countries can capture greater value from their mineral exports and reduce reliance on raw commodity trade, which has historically left them vulnerable to price shocks and limited industrial development.

- Government Procurement

Mandate EV adoption in public fleets: Africa's rapidly urbanizing population—expected to double by 2050—creates strong demand for efficient, affordable, and sustainable transportation. Electric two- and three-wheelers, minibuses, and buses are ideal for congested urban environments and can replace polluting, inefficient vehicles commonly used in public transport.

- A Growing Urban and Youth Population

Moreover, Africa's large youth population presents a deep pool of digital talent, entrepreneurial energy, and labor that can support the continent's own EV innovation and manufacturing ecosystem.

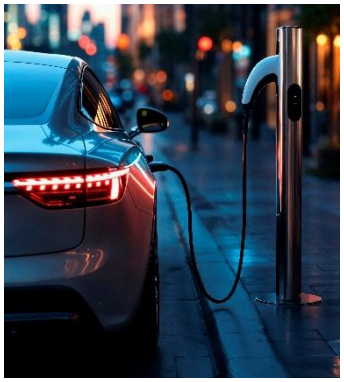
As EVs become more widespread, demand will grow for technicians, engineers, electricians, and software developers. Establishing technical training centers and incorporating EV-related curricula into universities and vocational institutions will be key to preparing a skilled workforce.

International partnerships can accelerate this knowledge transfer and open employment opportunities for African youth in the global green economy and EV related sectors.

C. Conclusion

The electrification of transport is not just a technological shift; it is an economic, environmental, and geopolitical opportunity. Africa can benefit immensely by supplying critical minerals and becoming an attractive market for electric mobility solutions. But more importantly, the continent has the potential to develop its own competitive EV industry—one that meets its unique needs, creates jobs, and contributes to global sustainability.

Several African countries are already laying the groundwork for a homegrown EV market:



- Rwanda is incentivizing electric motorcycles, with charging stations and battery-swap programs gaining traction.

- Kenya is deploying electric buses for public transport in Nairobi and exploring green corridor initiatives.

- South Africa, with its established auto industry, is positioning itself as an EV manufacturing and export hub.

- Morocco has attracted major automotive investment and is integrating EV component production into its green industrial strategy.

These initiatives confirm that the continent is not just poised to benefit from the EV revolution—it is capable of shaping it.

With strategic investments, supportive policies, and regional collaboration, Africa can seize this opportunity to drive its own transformation in the electric vehicle era—turning a global trend into a continental success story.

Written by Jacques Bouchard, Senior Partner, Gattuso Bouchard Mazzone
j.bouchard@gattusogbm.com
With the assistance of Anaïs Desré, Researcher, Gattuso Bouchard Mazzone
a.desre@gattusogbm.com

GATTUSO
BOUCHARD
MAZZONE