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Business Management: Industry Analysis: Transport Sector

E-Mobility: Emerging Opportunities and Challenges

Electric vehicles and e-mobility are transforming how people travel and how businesses in the transportation and petroleum sectors operate. Although these changes are happening gradually, they are leading to new opportunities and challenges for everyone involved. This report looks at some of the opportunities and challenges emerging from these developments.

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For many years, internal combustion engine (ICE) vehicles have dominated roads worldwide due to their low costs and the availability of fuel[1]. In addition, due to the developmental maturity reached by the ICE vehicles over time, they have been profitable for the automobile manufacturers[2]. Electric vehicles (EVs) have existed since the 19th century, but only recently have they started to become popular again. Governments, businesses, and everyday people are now paying more attention to cleaner transport options due to the need to reduce carbon emissions, and save money. The push toward e-mobility is not just a technical matter—it affects jobs, business models, and the long-term plans of entire industries like petroleum, which depends on fuel sales for most of its revenue.

Across the world, the number of vehicles on roads is growing, with the electric fleet gaining a decent growth momentum. In 2021, there were over 1.4 bn vehicles (1.3%[3] being EVs). By 2025, the number of vehicles had grown to over 1.6 bn globally[4] (4.0%[5] being EVs). The EV share is expected to rise to about 13.5%[6] (~420m vehicles) by 2030, grow at a CAGR of 21.3% and valued at more than USD 1.7 tn[7] by 2032. This growth brings both excitement and the need to adapt for businesses selling cars, parts, and fuel.

Emerging opportunities

The shift to e-mobility is reshaping manufacturing, supply chains, business models, and energy infrastructure. Legacy automakers are being forced to overhaul their production lines, retrain workers, and invest heavily in new technology or risk losing ground to EV-focused rivals like Tesla and BYD, which are using innovative technology and direct sales models. Suppliers face a parallel transformation, moving away from traditional components toward batteries, motors, and software, a shift that is creating new jobs while making others obsolete. To stay competitive, established manufacturers are increasingly partnering with tech firms and ramping up research and development investment. This changing landscape is opening up new opportunities, some of which include the following:

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[1] Abo-Khalil, A. G., Abdelkareem, M. A., Sayed, E. T., Maghrabie, H. M., Radwan, A., Rezk, H., & Olabi, A. G. (2022). Electric vehicle impact on energy industry, policy, technical barriers, and power systems. International Journal of Thermofluids, 13(100134), 100134. https://doi.org/10.1016/j.ijft.2022.100134

[2] Ibid

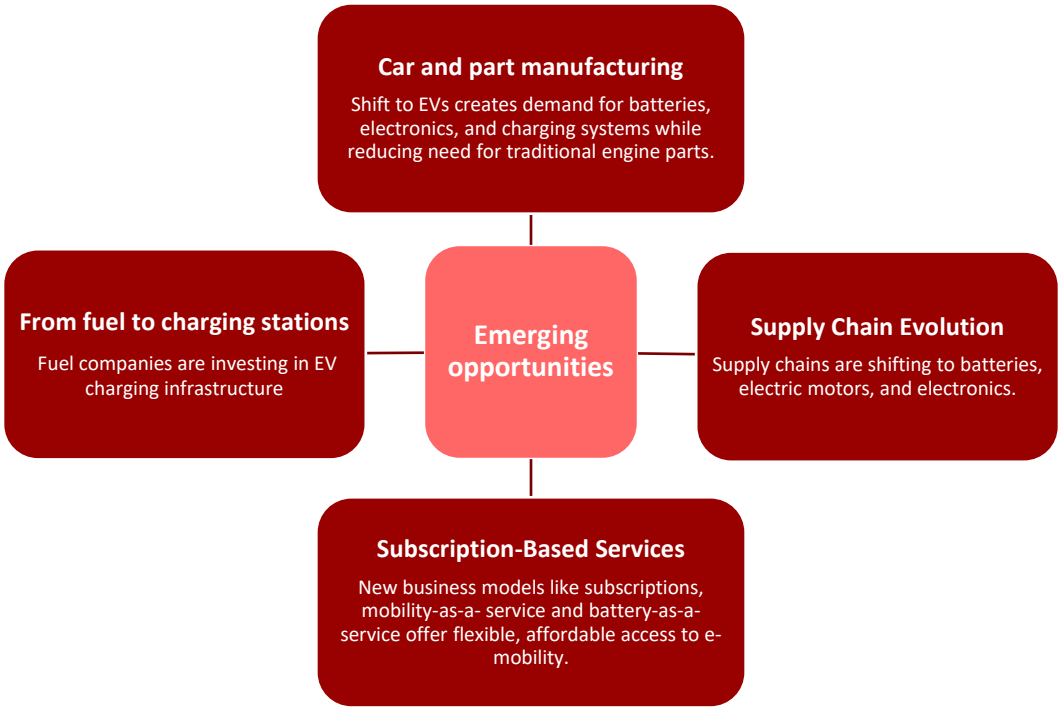
[3] Hedges & Company. (2021, June). *How many cars are there in the world?* https://hedgescompany.com/blog/2021/06/how-many-cars-are-there-in-the-world/

[4] Hedges & Company. (2021, June). *How many cars are there in the world?* https://hedgescompany.com/blog/2021/06/how-many-cars-are-there-in-the-world/

[5] International Energy Agency (2025). Global EV Outlook 2025 - Expanding sales in diverse markets

[6] International Energy Agency. (2025). Global EV data explorer. IEA. https://www.iea.org/data-and-statistics/data-tools/global-ev-data-explorer

[7] Jagani, S., Marsillac, E., & Hong, P. (2024). The Electric Vehicle Supply Chain Ecosystem: Changing Roles of Automotive Suppliers. Sustainability, 16(4), 1570. https://doi.org/10.3390/su16041570



Car and part manufacturing: For companies making car parts, there is an increased demand for batteries, electronics, and charging systems, while the need for old-style components like engines and exhausts drops. The transition to e-mobility also creates opportunities for workforce development through reskilling and upskilling in EV manufacturing, battery technology, electronics, and charging infrastructure. For example, Mercedes-Benz and Volkswagen retrained their workforce for roles in battery assembly, software development, and renewable energy systems[8], while General Motors (GM) launched a training program through the GM Automotive Manufacturing Electric College (AMEC) to help prepare its employees for the EV push[9].

Supply chain evolution: Auto manufacturers will increasingly source batteries, electric motors, and electronic components instead of traditional components like engines, transmissions, and exhaust systems. In addition,as making electric vehicles needs fewer moving parts than gasoline vehicles, factories and suppliers are being forced to shift what they produce. One of the most significant outcomes of this supply chain shift is the growing demand for critical minerals used in EV batteries, e.g., lithium (expected to grow by 40x by 2040), graphite, cobalt and nickel (by 20 – 25x)[10]. The critical opportunity lies not in extraction alone but in processing and manufacturing. Africa largely only exports mineral concentrate, while the value addition happens elsewhere, and finished products are imported back. Due to this, African countries, e.g. Zimbabwe, Malawi and Namibia, are slowly shiftingfrom being raw-material exporters to manufacturing participants by enacting

[8] DTO Research. (2025). EV Transition Industry Report. https://dto-research.com/images/downloads/automotive/industry_report-EV-transition.pdf
[9] Yakub, M. (2022, October 28). For OEMs and parts makers, EV retooling isn't just about plants — it means replacing lost jobs and upskilling their workforce. Electric Autonomy Canada. https://electricautonomy.ca/news/2022-10-28/upskilling-workers-oems-parts-makers-canada/
[10] International Energy Agency. (2021). The Role of Critical Minerals in Clean Energy Transitions. IEA. https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf

policies to ensure the processing is done in-country. Morocco went further and built its first lithium-ion battery materials plant in 2025[11].

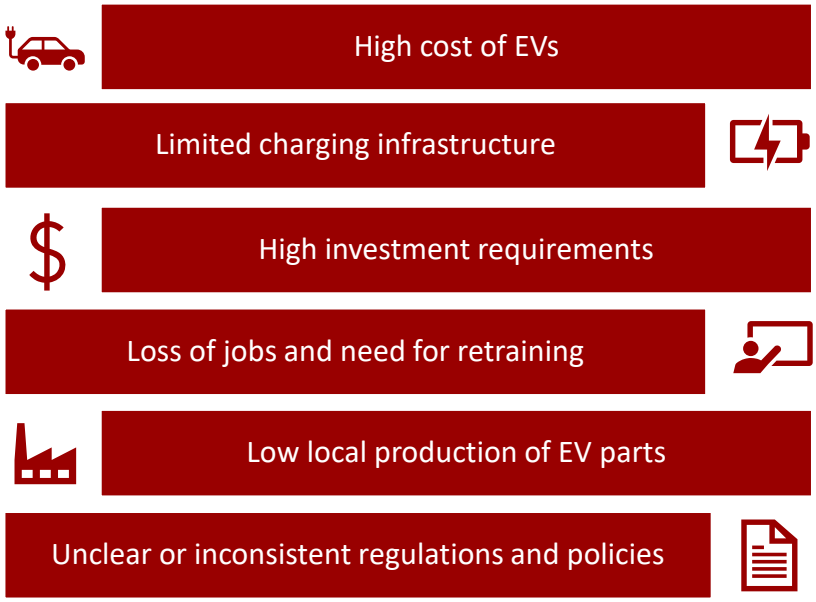
Subscription-based services: Beyond manufacturing and supply chains, e-mobility is also reshaping how consumers access transportation services. The rise of e-mobility is encouraging new business models, such as subscription-based services, mobility-as-a-service and battery-as-a-service. Services like bicycle and motorcycle subscriptions have benefited those carrying out delivery businesses, as they can pay for access instead of owning a vehicle. This model fits with trends in urban living and meets the needs of customers who want flexibility and lower costs. An example is Lime, which is one of the largest global shared e-mobility businesses. Its "mobility-as-a-service" model allows users to access transportation without owning a vehicle, paying instead through subscriptions, ride bundles, or pay-per-use systems. Lime currently operates in more than 200 cities across nearly 30 countries globally, making it one of the largest shared e-mobility providers in the world. According to Global Market Insights, the subscription EV market size was valued at USD 3.6 bn (2023) and is anticipated to record a CAGR of over 30% by 2032[12]. Battery-as-a-Service (BaaS) models enable fleet operators and consumers to lease batteries rather than having to buy them outright. By separating the battery from the vehicle, operators like Spiro, Ampersand, and MAX have slashed upfront costs for commercial riders and created predictable recurring revenue streams.

From fuel to charging stations: The transition to electric mobility is not only affecting vehicle production and ownership models, but also disrupting the traditional fuel industry. The petroleum sector is most affected by the switch because less oil is needed for transport. According to the International Energy Agency (IEA) Global EV Outlook 2025, EVs displaced over 1m barrels per day of oil consumption in 2024, a number equal to what Japan uses for transport every day. By 2030, EVs are projected to displace over 5 mb/d of diesel and gasoline[13]. To adapt, petroleum companies are investing in EV charging stations, making use of their existing network of petrol stations. They are also investing inrenewable energy like solar and wind power, to support electricity production for the charging stations. In addition, some are working together with car makers or tech firms to find ways to stay profitable. For example, BP in 2023 purchased Tesla chargers worth USD 100 mn while Chevron partnered with Freewire Technologies in 2022 to install charging stations[14].

Challenges and barriers

Although the growth of e-mobility is creating new opportunities across manufacturing, energy, and mobility services, it also comes with challenges that may affect the pace and inclusiveness of adoption. Some of these challenges include the following:

[11] COBCO. (2025). COBCO inaugurates its first manufacturing unit with a capacity of 40,000 tons. https://cobco.ma/cobco-inaugurates-its-first-manufacturing-unit-with-a-capacity-of-40000-tons/
[12] Global Market Insights. (2024). Subscription EV Market Size & Share 2024-2032. https://www.gminsights.com/industry-analysis/subscription-ev-market
[13] Ibid
[14] Canary Media (2025 August). BP buys $100M of Tesla chargers as oil majors prep for a post-gas future



High cost of EVs: Electric vehicles can be expensive, especially in countries where taxes and import duties raise prices. According to IEA raw material costs now account for some 50-70% of total battery costs, up from 40-50% five years ago[15]. This means that higher mineral prices could have a significant effect: a doubling of lithium or nickel prices would induce a 6% increase in battery costs.

Limited charging infrastructure: There may not be enough charging stations, and the power supply may be limited, especially outside large cities.

High investment requirements: Auto makers must spend a lot to update supply chains and factories, and these changes can take years. Technology moves quickly, so companies have to keep investing to stay up to date.

Loss of jobs and need for retraining: For workers, the switch to EVs can mean losing jobs if they worked on parts no longer needed for electric vehicles. To avoid this, some companies need to retain, but this can be time-consuming and quite costly.

Low local production of EV parts: Local production of EVs and parts is also low in many places, which means relying on imports and increasing costs.

Unclear or inconsistent regulations and policies: Lastly, regulations and policies set by governments about EVs and charging stations are not always clear or consistent.

Conclusion and recommendations

The transition to e-mobility is reshaping the global automotive and energy landscape, creating significant opportunities across manufacturing, supply chains, mineral processing, mobility services, and energy infrastructure. The shift toward electric vehicles is not only driving demand for new technologies such as batteries, charging systems, and electronic components, but is also

[15] International Energy Agency. (2021). The Role of Critical Minerals in Clean Energy Transitions. IEA. https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf

encouraging the emergence of innovative business models such as Mobility-as-a-Service and Battery-as-a-Service (which helps to lower costs).

For Africa, the growing demand for critical minerals presents an opportunity to move beyond raw material exports toward value addition, processing, and battery manufacturing. African countries should therefore prioritise value addition by encouraging local processing of critical minerals and attracting investments into battery and EV component manufacturing.

Governments, on the other hand, will need to create policies and incentives that make adopting EVs easier, hence supporting local production, and investing in charging infrastructure.

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Contacts

Please visit www.algumafricacapital.com to learn more about us.

For general enquiries, write to info@algumafricacapital.com

For research and insights, write to insights@algumafricacapital.com

For training and capacity building, write to training@algumafricacapital.com

For consulting and advisory, write to advisory@algumafricacapital.com

If a business looking for funding, or a private equity investor looking for pipeline, write to dealpipeline@algumafricacapital.com