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# UNLOCKING THE PHILIPPINES' POTENTIAL IN THE GLOBAL ELECTRIC VEHICLES ECOSYSTEM

# UNLOCKING THE PHILIPPINES' POTENTIAL IN THE GLOBAL ELECTRIC VEHICLES ECOSYSTEM

This paper highlights the investment opportunities arising from the Philippines' huge reserves of critical minerals and its strategic shift toward electric vehicle development. With increasing private sector participation, supportive government policies, and an already strong foundation in semiconductors and electronics manufacturing, the country is well-positioned to expand its role in EV manufacturing. These developments not only support domestic industry growth but also strengthen the Philippines' position in the global EV supply chain

Today, urbanization and the development of livable cities are on the rise globally, and this trend is expected to continue and remain irreversible. According to the World Bank,[1] over half of the world's population – about 4.4 billion people – now lives in cities. This trend is projected to accelerate; the urban population is anticipated to more than double by 2050 where nearly 70% of the global population will reside in cities. Indeed, urban centers have become powerful drivers and symbols of economic growth and development, where large businesses that create jobs are concentrated, contributing significantly to gross domestic product and enhancing national productivity.

However, with rising economic activity and mobility comes the challenge of balancing environmental conservation and sustainable development. Urbanization places pressure on land and natural resources as cities consume two-thirds of global energy and generate more than 70% of global greenhouse gas emissions, based on data from the World Bank.[2]

In this context, electric vehicles (EVs) and renewable energy (RE) technologies play a critical role in mitigating climate change. These solutions, which depend heavily on critical minerals, help lower carbon emissions and support the rise of a digitally-driven circular economy. Globally, EV adoption is gaining momentum driven by environmental imperatives and supportive government policies. This signals a shift toward more sustainable urban development.

EVs are considered a cleaner alternative mode of transport since they do not spew harmful emissions. A global shift from fossil fuel-based internal combustion engines to EVs is crucial to decarbonizing the road transportation sector, which accounts for over 15% of global energy-related emissions.[3] In the Philippines, data from the Department of Environment and Natural Resources (DENR) show that mobile sources, such as cars, motorcycles, trucks, and buses, are the primary source of air pollutants, accounting for nearly 60% of total emissions.[4]

## A LOOK AT THE GLOBAL EV LANDSCAPE

According to the International Energy Agency (IEA),[5] the number of electric cars on the road worldwide surpassed 40 million in 2023, significantly up from 26 million in 2022 and more than six times higher than the number in 2018. Electric cars accounted for approximately 18% of all car sales in 2023, compared to 14% in 2022 and only 2% in 2018. These figures reflect the strong and sustained growth of the EV market as it continues to mature. However, global sales remain heavily concentrated in a few markets, particularly China, Europe, and the United States.

Chinese automaker BYD topped global sales among clean-energy vehicle manufacturers in 2024, generating USD107 billion in revenue, while Elon Musk's Tesla followed with USD97.7 billion. Having dominated its home market in China, the world's largest auto market, BYD is now expanding globally, although notable exceptions include the United States, where 100% tariffs on its passenger cars effectively block entry. In 2024, China represented 32% of BYD's total new EV sales.[6] BYD and Tesla accounted for 35% of all electric car sales globally in 2023.[7]

IEA data[8] show that in terms of battery and mineral supply chains, China dominates the market as it produces three-quarters of all lithium-ion batteries and hosts 70% of cathode and 85% of anode production capacity, which are key components of batteries. More than half of the processing and refining capacity for lithium, cobalt, and graphite is also located in China. Europe accounts for over a quarter of global EV assembly but has a limited supply chain presence, aside from cobalt processing at 20%. The United States holds an even smaller share, with only 10% of EV production and 7% of battery production capacity. South Korea and Japan have significant shares in the downstream supply chain, particularly in the technical production of cathode and anode materials. Most key minerals are extracted from resource-rich countries like Australia, Chile, and the Democratic Republic of Congo, and are processed by a few large companies.

Rising fuel prices, driven by the Ukraine-Russia conflict and increased oil import costs, have boosted EV demand. However, high upfront costs, electricity expenses, and battery replacement are major barriers to widespread EV adoption. Moreover, supply chain disruptions and rising production costs hinder long-term market growth. The lack of sufficient infrastructure, such as public charging stations and reliable power grids, hinders EV adoption.

## THE RISE OF EVS IN THE PHILIPPINES

According to the Department of Energy (DOE), there are four types of EVs recognized in the Philippines:[9]

- **Battery Electric Vehicles (BEVs)**: Operate solely on electricity stored in onboard batteries and do not have an internal combustion engine (ICE).
- **Plug-in Hybrid Electric Vehicles (PHEVs)**: Combine an electric motor and an ICE, with the battery rechargeable via external power sources.
- **Hybrid Electric Vehicles (HEVs)**: Integrate an ICE and an electric motor, but rely on regenerative braking and the ICE for battery charging, as they cannot be plugged in.
- **Light Electric Vehicles (LEVs)**: Such as electric scooters and electric bicycles, are designed to emit significantly less pollution compared to traditional vehicles.

### TABLE 1 . BATTERY ELECTRIC VEHICLES (BEV) AND HYBRID ELECTRIC VEHICLES (HEV) REGISTERED
NOVEMBER 2024

| MV Type | Mode of Registration | Total | | Grand Total |
|---|---|---|---|---|
| | | Battery Electric Vehicles (BEVs) | Hybrid Electric Vehicles (HEVs) | |
| Cars | New | 2,199 | 1,484 | 3,683 |
| | Renewal | 365 | 51 | 416 |
| | Sub-Total | 2,564 | 1,535 | 4,099 |
| UV | New | 416 | 11,016 | 11432 |
| | Renewal | 1,036 | 8 | 1,044 |
| | Sub-Total | 1,452 | 11,024 | 12,476 |
| SUV | New | 5,469 | 23,937 | 29,406 |
| | Renewal | 30 | 42 | 72 |
| | Sub-Total | 5,499 | 23,979 | 29,478 |
| Truck | New | 52 | 0 | 52 |
| | Renewal | 1 | 13 | 14 |
| | Sub-Total | 53 | 13 | 66 |
| Buses | New | 15 | 0 | 15 |
| | Renewal | 5 | 2 | 7 |
| | Sub-Total | 20 | 2 | 22 |
| MC/TC | New | 1,145 | 0 | 1,145 |
| | Renewal | 5,427 | 26 | 5,453 |
| | Sub-Total | 6,572 | 26 | 6,598 |
| Non-conv MC | New | 0 | 0 | 0 |
| | Renewal | 0 | 0 | 0 |
| | Sub-Total | 0 | 0 | 0 |
| Sub-total | New | 9,296 | 36,437 | 45,733 |
| | Renewal | 6,864 | 142 | 7,006 |
| **TOTAL** | | **16,160** | **36,579** | **52,739** |

SOURCE: LAND TRANSPORTATION OFFICE

Figures from the Land Transportation Office (LTO) show a rapid increase in EV registrations in the Philippines, which started at just 145 in 2014. As of November 2024, the number of newly registered battery electric vehicles (BEVs) and hybrid electric vehicles (HEVs) has risen to a total of 45,733, with 7,006 renewals of registration (Table 1). This growth highlights the country's growing commitment to sustainable transportation and the rising demand for EVs.

Tied to EV adoption is the availability of reliable charging stations. The use of EVs in the country is supported by 962 charging stations, which include 421 AC charging points, 59 DC charging points, and 482 battery swapping stations as of April 2025. There are also 132 DOE-accredited EV charging stations (EVCS) providers, consisting of 53 operators, 44 service providers, and 35 suppliers. These charging locations and battery swapping stations are distributed across the Philippines but are highly concentrated in urban centers, primarily in Luzon.[10]

Expanding the number of charging stations will be essential to improving the convenience and accessibility of EVs, especially in urban centers. To address the lack of public charging infrastructure, some local start-ups have begun developing battery charging solutions. CHRG EV Technologies Inc., a start-up company that began as a project funded by the Department of Science and Technology (DOST), has developed fast-charging solutions through products such as battery chargers and stations, battery management systems, and services including battery testing, e-vehicle testing, electronic design, and EVCS design.[11]

Notably, the DOE reported that the emergence of the EV industry in the Philippines has generated over 10,400 new jobs and attracted more than PHP1.99 billion in investments, as of April 2025.[12]

## POLICY ENVIRONMENT

In response to global trends and developments in sustainability amid rising urbanization and growing demand for mobility, the Philippine government has increasingly provided support for sustainable and green technologies, particularly in the EV sector.

### ELECTRIC VEHICLE INDUSTRY DEVELOPMENT ACT (EVIDA)

As the global EV market continues to mature, the Philippines also presents significant opportunities for growth. Republic Act No. 11697, or the Electric Vehicle Industry Development Act (EVIDA), is the enabling law for the country's EV sector. It took effect in May 2022, with its Implementing Rules and Regulations (IRR) coming into force in September 2022.

EVIDA establishes a comprehensive policy framework aimed at accelerating EV adoption in the Philippines. It seeks to create an enabling environment for developing the local EV industry while reducing the country's dependence on fossil fuels and improving air quality in urban areas. The law offers fiscal incentives for the manufacture and importation of EVs and related infrastructure, alongside non-fiscal incentives for EV users, manufacturers, and importers. EVIDA also authorizes the DOE to centralize data from various government agencies on EVs and charging stations.

With the passage of EVIDA, the Department of Trade and Industry (DTI) said that the Philippines is better positioned to attract high-tech investments and create high-value jobs by taking advantage of the global shift to EVs. The DTI noted that the law reduces oil dependence and pollution, helping ease the impact of rising fuel prices on businesses and consumers.[13]

### COMPREHENSIVE ROADMAP FOR THE ELECTRIC VEHICLE INDUSTRY (CREVI)

EVIDA also mandated the creation of the Comprehensive Roadmap for the Electric Vehicle Industry (CREVI) for 2023-2040. CREVI outlines the state of the Philippine EV sector, identifies growth trends and projections, and provides short-, medium-, and long-term targets (Tables 2 and 3). It focuses on key areas such as EV charging infrastructure development, manufacturing, research and development, and human resource development. The roadmap also seeks to address the fragmentation of public and private sector efforts by providing a unified strategic direction for the industry.[14]

Specifically, the CREVI intends to "electrify a diverse range of vehicles and establish a domestic EV industry with strong export potential, with the aim of building a sustainable future, where new EVs and the required infrastructure are locally robust with reduced environmental impact." Key goals include increasing the utilization of EVs in the domestic market, deploying a sufficient number of EV charging points nationwide between 2023 and 2040, positioning the Philippine EV industry as a global producer and exporter of EVs by 2040, protecting employment in the automotive sector and implementing capacity-building and EV-specific transition programs, and supporting research and development in battery technologies, EVCS, and digitalization to drive innovation and enhance the competitiveness of the local EV industry.[15]

The CREVI targets a minimum 10% EV share in the vehicle fleet by 2040 under the Business-as-Usual (BAU) scenario. Meanwhile, the Clean Energy Scenario (CES) sets a more ambitious goal of electrifying 50% of all vehicles by the same year (Table 2). Achieving either target will require significant investment in infrastructure to support EVCS.[16]

## TABLE 2 . COMPREHENSIVE ROADMAP FOR THE ELECTRIC VEHICLE INDUSTRY (CREVI)

| Business as Usual Scenario: 10% EV Fleet Share by 2040 | | | | |
|---|---|---|---|---|
| Targets<br>Vehicle Type | EV Type | Short Term<br>(2023-2028) | Medium Term<br>(2029-2034) | Long Term<br>(2035-2040) |
| Cars | HEV | 81,500 | 49,000 | 36,600 |
| (include Sedan, SUV, UV) | PHEV | 13,600 | 24,600 | 36,600 |
| | BEV | 13,600 | 123,000 | 219,400 |
| Tricycle | BEV | 37,500 | 71,000 | 103,400 |
| Motorcycle | BEV | 164,900 | 311,800 | 454,400 |
| Bus | BEV | 600 | 1,200 | 1,800 |
| **TOTAL** | | **311,700** | **580,600** | **852,200** |
| **Clean Energy Scenario: 50% EV Fleet Share by 2040** | | | | |
| Targets<br>Vehicle Type | EV Type | Short Term<br>(2023-2028) | Medium Term<br>(2029-2034) | Long Term<br>(2035-2040) |
| Cars | HEV | 415,000 | 234,000 | 107,000 |
| (include Sedan, SUV, UV) | PHEV | 69,000 | 80,000 | 107,000 |
| | BEV | 69,000 | 327,000 | 641,000 |
| Tricycle | BEV | 419,000 | 262,000 | 223,000 |
| Motorcycle | BEV | 1,480,000 | 947,000 | 922,000 |
| Bus | BEV | 2,200 | 1,500 | 1,600 |
| **TOTAL** | | **2,454,200** | **1,851,500** | **2,001,600** |

SOURCE: DEPARTMENT OF ENERGY (DOE)

## TABLE 3 . EV AND EV CHARGING STATIONS TARGETS

| Business as Usual Scenario: 10% EV Fleet Share by 2040 | | | |
|---|---|---|---|
| Targets<br>Vehicle Type | Short Term<br>(2023-2028) | Medium Term<br>(2029-2034) | Long Term<br>(2035-2040) |
| Electric Vehicles | 311,700 | 580,600 | 852,100 |
| EV Charging Stations | 7,300 | 14,000 | 20,400 |
| **Clean Energy Scenario: 50% EV Fleet Share by 2040** | | | |
| Targets<br>Vehicle Type | Short Term<br>(2023-2028) | Medium Term<br>(2029-2034) | Long Term<br>(2035-2040) |
| Electric Vehicles | 2,454,200 | 1,851,500 | 2,001,600 |
| EV Charging Stations | 66,500 | 41,800 | 39,800 |

SOURCE: DEPARTMENT OF ENERGY (DOE)

### PHILIPPINE ENERGY PLAN 2023-2050

In 2024, the DOE released the Philippine Energy Plan 2023-2050,[17] outlining the administration's vision for energy security. As part of the plan, the EV Roadmap outlines a phased approach to EV adoption and infrastructure development:

- **Short-term phase (2023-2024)**: Now completed, it focused on creating policies, guidelines, and regulations for the sustainable, energy-efficient, and safe deployment of EVs and EVCSs. It also launched pilot programs, conducted research on EV batteries and applications, and implemented e-mobility transition programs like fleet electrification and EVCS deployment.
- **Medium-term phase (2025-2028)**: It targets the growth of domestic EV manufacturing, establishment of industry standards, and safety training on EV usage, conversion, and battery recycling. It also prioritizes the commercialization of locally available EVs and battery storage solutions. Efforts will likewise focus on workforce development by training and certifying technicians while promoting job creation in the EV industry.
- **Long-term phase (2029-2050)**: It aims to establish a nationwide EV and EVCS network for widespread accessibility. The roadmap envisions a fully developed EV ecosystem powered by renewable energy, alongside advancements in battery research, EV technology, and digitalization to enhance the competitiveness of the local EV industry.

The roadmap envisions a fully developed EV ecosystem powered by 100% renewable energy. R&D in battery technology, EV innovations, and digitalization will be prioritized to drive technological advancements and enhance the competitiveness of the local EV industry.

### EXECUTIVE ORDER NO. 12, S. 2023

Executive Order No. 12,[18] which was issued in January 2023, temporarily modified the rates of import duties on EVs, parts, and components for five years to support the growth of the EV industry and support the shift to clean energy technologies. Through this EO, the government aims to encourage consumers to consider EVs as a cleaner, greener mode of transportation.[19]

In May 2024, the National Economic and Development Authority (NEDA) Board, chaired by President Ferdinand Marcos Jr., approved the expansion of EO 12, which initially reduced tariffs on EVs until 2028. The revised policy now includes e-motorcycles, e-bicycles, nickel metal hydride accumulator batteries, e-tricycles, HEVs, and PHEV jeepneys or buses. This initiative aims to increase the accessibility of electric and hybrid vehicles for all consumers, reduce fossil fuel dependence, lower greenhouse gas emissions, and drive innovation in the EV industry.[20]

### PROPOSED POLICIES FOR EV DEVELOPMENT

As mandated by EVIDA, the Board of Investments (BOI) is tasked with developing the Electric Vehicle Incentive Strategy (EVIS), similar to the Comprehensive Automotive Resurgence Strategy (CARS) Program. As of October 2024, the BOI is finalizing the EVIS for submission to the Fiscal Incentives Review Board (FIRB) for approval.[21]

The EVIS aims to bridge the production cost gap between electric and traditional vehicles through fiscal and non-fiscal incentives. These measures are intended to support local EV manufacturing and help achieve production targets by 2030. The EVIS also aims to attract private sector investments in strategic EV segments, particularly manufacturing, thereby strengthening the Philippines' role in the regional automotive value chain.[22]

The proposed EVIS includes two types of fiscal support for EV manufacturers: Fixed Investment Support (FIS) and Production Volume Incentives (PVI). Both will be granted as income tax deductions through the issuance of an Income Tax Deduction Certificate, valid for up to 10 years from the start of commercial operations. FIS will cover capital expenses for tooling, equipment, research and development, engineering changes to manufacture the model, and training for start-up operations, excluding land. PVI, on the other hand, will be computed based on a percentage of profit margins per unit sold.

Under the initial EVIS proposal, the BOI recommends the following:[23]

- **Cars, PUV, Bus, Trucks**: FIS of 50% for battery electric vehicle (BEV) and 40% for hybrid electric vehicle (HEV) plus PVI
- **Motorcycles**: FIS of 50% for BEV and 40% for HEV plus PVI
- **Parts and components**: 50% FIS

Moreover, under the Corporate Recovery and Tax Incentives for Enterprises to Maximize Opportunities for Reinvigorating the Economy (CREATE MORE) Act, incentives are granted only to approved projects or activities listed in the Strategic Investment Priority Plan (SIPP), which identifies key economic activities eligible for incentives. The duration of incentive availment, including income tax holidays, special corporate income tax rates, and the enhanced deduction regime, will depend on the project's location and classification, with higher-tier projects eligible for longer availment periods.

The BOI is currently drafting the SIPP for 2025-2028 in collaboration with the FIRB, other investment promotion agencies (IPAs), and relevant government bodies that oversee tax incentives. According to the latest SIPP draft[24] as of January 2025, Tier II covers activities that "produce supplies, parts and components, and intermediate services that are not locally produced but are critical to industrial development and import-substituting activities, including crude oil refining." Tier II industries include sustainability-related activities such as the manufacture and assembly of EVs and their parts and components.

## INDUSTRY MOVEMENTS

Key players in the private sector have been actively driving the growth of the EV industry in the Philippines by complementing government initiatives through their investments in manufacturing, technology, and infrastructure to support the country's transition toward sustainable mobility.

In 2023, Ayala Corporation secured the exclusive Philippine distributorship of BYD, which is known for hybrid and pure EVs.[25] As the official distributor, Ayala will manage the sale of BYD's passenger vehicles through a network of dealers, expand the brand's footprint in the country, and support customers' aftersales requirements, including parts and technical assistance for both new buyers and existing BYD owners. Mr. Jaime Alfonso Zobel de Ayala, head of ACMobility (formerly AC Motors), highlighted that this partnership aligns with the Ayala Group's goal to lead the transition to electric mobility in the Philippines, amid the rapid adoption of EV globally in recent years. The company projects that EVs could make up 10-20% of vehicle sales in the Philippines within the next five to six years.[26]

Aside from vehicle distribution, several companies in the Philippines engaged in electronics manufacturing are emerging as key contributors to the EV sector.

In July 2023, Integrated Micro-Electronics, Inc. (IMI), the electronics manufacturing subsidiary of Ayala Corporation known as a global electronics manufacturer, and California-based Zero Motorcycles launched the first high-powered electric motorcycle manufacturing assembly line at IMI's Laguna Technopark facility. This partnership aims to address the growing global demand for high-performance e-motorcycles, with production expected to reach approximately 16,000 bikes annually by 2025.[27] This partnership showcases how a Filipino-owned electronics company is actively engaging in the global EV ecosystem by leveraging its expertise in electronics manufacturing.

Moreover, IMI announced in January 2025 that it has entered a partnership with LAND/LAND Energy, a Cleveland-based electric mobility manufacturer, to accelerate EV production globally. The partnership will produce LAND's new global mobility platform, set for launch in 2025, marking the company's first expansion into Southeast Asia. This collaboration leverages IMI's manufacturing capabilities, which currently produce both electric and gas motorcycles in the Philippines. It will also allow LAND to efficiently manufacture and distribute their new product across Asian and European markets, where the demand for two-wheel electric vehicles is growing significantly.[28]

Onsemi Cebu, a subsidiary of Arizona-based ON Semiconductor, plays a key role in supporting the EV industry. Operating in the Mactan Economic Zone in Cebu, it manufactures components from the company's EliteSiC Growth portfolio, including high-performance silicon carbide (SiC) diodes, MOSFETs, modules, and gate drivers. These parts are critical for EV powertrains, onboard chargers, and battery management systems. In 2024, Onsemi Cebu began local production of SiC solutions, which are favored over traditional silicon components due to their higher efficiency, greater power density, and lower energy losses. These features make SiC technologies well-suited for EVs and other high-efficiency clean energy applications.[29]

Meralco, the Philippines' largest electric distribution utility, is actively investing in EV charging infrastructure, which is critical to the broader adoption of EVs. Notably, through its Green Mobility Program, the company aims to convert 25% of its corporate fleet to EVs by 2030. Meralco has converted more than 150 internal combustion engine (ICE) vehicles to EVs, representing 6% of its fleet, supported by a growing network of strategically located charging stations.[30]

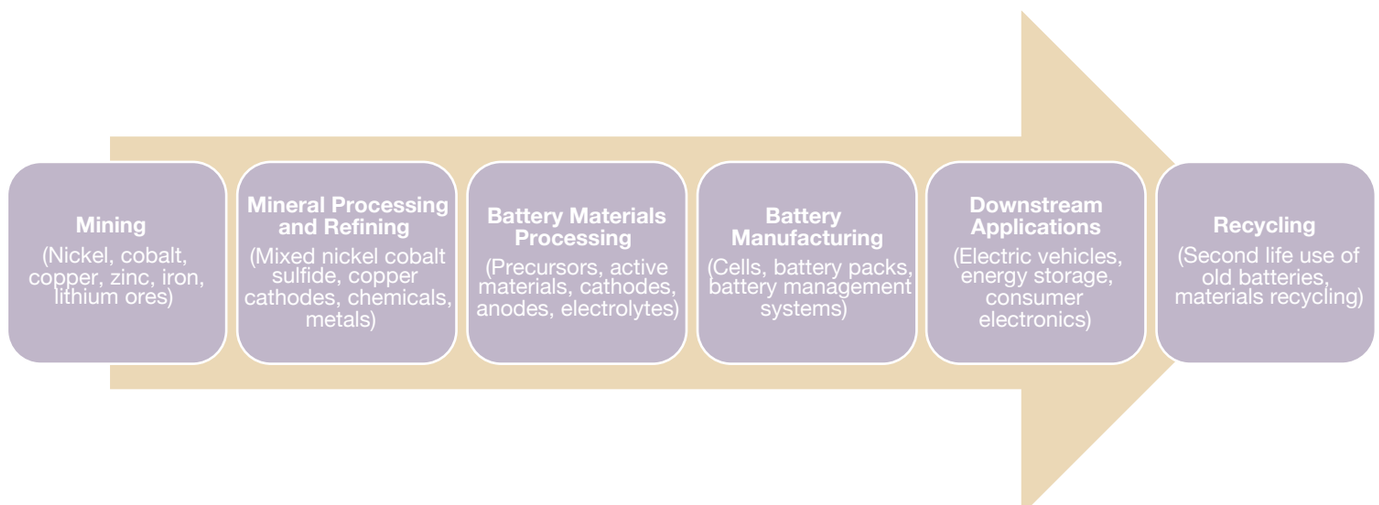
Moreover, in November 2024, Poland-based ChargeEuropa announced a strategic partnership with Movem Electric, Inc., a subsidiary of Meralco, to roll out EV charging stations across the Philippines.[31] This marks ChargeEuropa's first entry into the Asian market, with Movem focusing on the installation and operation of its charging technology. ChargeEuropa CEO Matt Tymowski pointed to the Philippines' strong EV growth potential as a key factor behind the expansion, while Movem President Raymond Ravelo highlighted the partnership's role in improving public access to EV infrastructure.[32]

## OPPORTUNITIES FOR THE PHILIPPINES IN THE EV SECTOR

Geopolitical developments play a critical role in shaping investment opportunities by influencing global markets, trade flows, and economic stability. Political shifts, trade agreements, and economic policies can either present risks or unlock new opportunities for investors. The Indo-Pacific, home to some of the world's largest and fastest-growing economies, is a central hub in global trade, with nearly half of the world's maritime trade passing through its waters. The Philippines, strategically located in this key region, has a unique opportunity to attract investment in the EV sector. By aligning with global trends, strengthening international partnerships, and positioning itself as a key supplier of green metals and EV components, the country can become a vital player in the global EV supply chain, driving investment and fostering sustainable economic growth.

According to the BOI, opportunities in the green metals sector include the following: (1) exploration and development of additional mineral resources; (2) mineral processing; (3) battery precursor production; (4) battery production; and (5) growing demand for EVs. It is worthy to note that the BOI has identified numerous opportunities for the Philippines in the battery value chain, as shown in Figure 1.

**FIGURE 1 . OPPORTUNITIES IN THE BATTERY VALUE CHAIN**




SOURCE: BOARD OF INVESTMENTS (BOI)

The country possesses, according to the BOI,[33] the critical components of an EV ecosystem, including an abundant supply of green metals as inputs for batteries, expertise in electronics manufacturing to develop the EV parts supply chain, a growing market and demand for EV products, and a skilled talent pool in software development for battery management systems and other software to integrate various EV functions.

With huge reserves of green metals, the Philippines has the potential to supply key minerals and could emerge as a key location for the production of precursor materials and battery manufacturing for EVs. Complementing these advantages are supportive government policies that promote EV deployment.

Beyond its evolving policy landscape, the Philippines offers several inherent strengths: a geostrategic location, rich mineral reserves, a large and young tech-savvy workforce, and an expanding consumer base driven by a rising middle class.

## GEOSTRATEGIC LOCATION

The country's geostrategic location at the heart of the Indo-Pacific region positions it as a vital hub for trade, logistics, and regional operations, particularly for companies looking to diversify and derisk their supply chains away from China. Its proximity to major markets like Japan, South Korea, and Taiwan, along with having the fifth longest coastline in the world, provides significant logistical advantages. As economies seek to reduce dependencies on single sources for raw materials and manufacturing, the Philippines' geographic positioning enhances its economic relevance. Its participation in regional efforts such as the Indo-Pacific Economic Framework for Prosperity (IPEF) and the Luzon Economic Corridor further strengthens its role as a rising middle power and key player in global supply chains.

## ABUNDANT CRITICAL NATURAL RESOURCES

The global push for clean energy and sustainable development is rapidly increasing the demand for critical minerals, which are key components in EVs and other clean energy technologies. According to the IEA,[34] EVs require a greater variety of critical minerals than conventional cars do. While traditional vehicles primarily use copper and manganese, EVs rely on copper, lithium, nickel, manganese, cobalt, graphite, and zinc.

The Philippines has long been recognized as a rich source of mineral resources, with abundant metal, non-metal, and other mineral resources. It ranks as a leading producer of gold, copper, nickel, iron, and chromite, and has significant reserves of minerals like coal, cobalt, gypsum, silver, and sulfur.[35] These resources make the mining and minerals industry a key potential driver of the country's economic growth, despite facing growing geopolitical risks and competition. The Philippines also has 9 million hectares of land with mineral potential, of which mining tenements cover 779,446.41 hectares, accounting for 2.60% of the total land area.[36]

According to data from the United States Geological Survey, the top nickel-producing countries in 2024 were Indonesia, the Philippines, Russia, Canada, and China,[37] while cobalt production was led by the Democratic Republic of the Congo, followed by Indonesia, Russia, the Philippines, and Australia.[38] This highlights the Philippines' strategic importance in the global supply of critical minerals essential for electric vehicle batteries and green technologies.

As the world accelerates efforts toward decarbonization, the country has a unique opportunity to harness these resources and position itself as a leading supplier of green metals. For the Philippines, these natural resources offer a foundation for attracting FDI and unlocking economic benefits. The strategic value of these minerals, which are often leveraged by countries for geopolitical advantage, has grown significantly in recent years. With its extensive mineral reserves and strategic location surrounded by major trade routes, the Philippines is poised to become a crucial supplier of essential minerals for green technologies.

Interestingly, semiconductors, a major export of the Philippines, are also central to EV development. Local firms, though focused on assembly, test, and packaging (ATP) and lacking domestic EV production, provide essential components such as power chips and battery management systems and are active contributors to the global EV value chain.

## YOUNG WORKFORCE AND HUGE CONSUMER BASE

The Philippines offers a strong investment opportunity, driven by its large, youthful, and expanding population, which reached 117.3 million in 2023 – making it the 13th most populous country in the world – according to the World Bank.[39] The Philippines' large, young population serves as both a talent pool and a growing consumer base.

With a median age of around 25[40] and a literacy rate of 97%,[41] the country offers a dynamic and trainable workforce that aligns with the demands of modern industries. This young demographic profile stands in contrast to aging populations in other parts of Asia and contributes significantly to labor market competitiveness. The widespread use of English as a national language further enhances the Philippines' attractiveness to foreign investors by reducing language barriers in business and legal settings. Cultural adaptability and a strong work ethic make the Filipino workforce highly valuable to global industries, with its alignment to both Western and Eastern business cultures facilitating regional collaboration.

In fact, in the 2023 World Competitiveness Ranking by the International Institute for Management Development (IMD),[42] international business executives cited the Philippines' skilled workforce, open and positive attitudes, and economic dynamism as key factors for its attractiveness.

The country's consumer market is equally promising. Urbanization, the rise of the middle class, and digitalization are driving demand for goods and services, making the Philippines one of Southeast Asia's most vibrant markets. With over 63% of the population in the working-age bracket,[43] the Philippines has a strong base for economic activity and consumption. Cities are evolving into commercial hubs as more Filipinos seek employment and better living standards, increasing demand for housing, transport, education, and entertainment.

## POLICY RECOMMENDATIONS

Building on the Philippines' strategic advantages in the EV sector – especially on the abundance of critical minerals like nickel and cobalt – the country has strong potential to become a key global player for EV battery manufacturing. These resources not only support greater supply chain resilience amid global disruptions, but also present opportunities to expand private sector participation in mineral processing and battery component production. To capitalize on these opportunities and strengthen its position in the global EV value chain, the government and the private sector can take coordinated actions.

Private stakeholders should focus on investing in local EV manufacturing and assembly facilities to reduce reliance on imports and lower production costs. Collaboration with global EV brands can bring advanced technologies to the country. Given the critical need to expand charging infrastructure, private companies can partner with local governments and utility providers to deploy more charging stations, especially in underserved areas. Consumer awareness campaigns highlighting the benefits of EVs, along with financing options like installment plans or leasing programs, can make EVs more accessible to the public.

Private firms should leverage the Philippines' abundant reserves of green metals such as nickel and cobalt by investing in mineral processing and battery manufacturing facilities. Supporting research and development initiatives for battery technologies and EV components, as well as workforce training programs for technicians and engineers, can further enhance competitiveness. The adoption of sustainable practices, including eco-friendly manufacturing processes and battery recycling programs, can ensure long-term viability and attract foreign investors.

Policymakers, on the other hand, must streamline regulations and enhance fiscal incentives under the EVIDA to attract investments in EV manufacturing and infrastructure. The expansion charging infrastructure nationwide, particularly in rural areas, should be prioritized through public funding and public-private partnerships. Policy continuity is essential to build investor confidence, and the CREVI should be regularly updated to reflect market trends. Subsidies and tax breaks for local EV production and assembly can also support domestic manufacturing, while export strategies can position the Philippines as a global supplier of EVs and components. Integrating renewable energy into EV infrastructure is vital, and the government should incentivize the use of clean energy sources to power charging stations.

To attract investment in the EV sector, the Philippines must continue its efforts to simplify and streamline regulations and processes. A transparent and predictable investment environment – supported by consistent policy updates that reflect local and global trends – is essential. Strategically targeting investments across key regions can leverage local talent, generate jobs, and address regional inequalities.

Maintaining competitive policy frameworks and incentives is also critical. The Philippines should enhance the value proposition of its economic zones and highlight successful case studies of major investors and international partnerships to build investor confidence. Emphasizing the benefits and support services available in these zones can attract high-value investments in EV manufacturing, assembly, and supply chains.

Improving the ease of doing business – particularly at the local level – is another key priority. This includes digitalizing government services and ensuring consistent regulatory implementation across regions. Strengthening coordination with local government units and resolving bureaucratic bottlenecks through comprehensive legislation will create a more business-friendly environment.

Indeed, political and macroeconomic stability are fundamental to investor confidence. The government must prioritize transparency, policy continuity, and risk mitigation to reduce uncertainty and encourage long-term investment.

International partnerships with countries like Japan, South Korea, and the United States can attract foreign investments and facilitate technology transfer. Funding vocational training programs and creating apprenticeship opportunities will develop a skilled workforce to support the EV industry. Finally, establishing a centralized database to monitor EV adoption, infrastructure deployment, and industry growth will enable regular assessments and policy adjustments.

Beyond investment facilitation, the responsible management of critical minerals such as nickel and cobalt is essential to supporting the EV sector. The Philippines must promote responsible mining practices that balance economic development with environmental protection and community engagement. These efforts are crucial to securing raw materials needed for battery production and other clean energy technologies.

By implementing these recommendations, stakeholders can collaboratively build a robust and sustainable EV ecosystem, while driving economic growth and environmental benefits for the Philippines.

## CONCLUSION

Strategically located at the heart of the Indo-Pacific, the Philippines offers direct access to some of the world's largest EV markets and global automotive production hubs. Its proximity to major economies such as Japan and South Korea enhances its export competitiveness by reducing shipping costs and lead times for vehicles and components. This logistical advantage, coupled with growing domestic demand fueled by rising environmental awareness, government incentives, and a rapidly expanding middle class, positions the country as both a strategic manufacturing base and a promising EV consumer market.

The Philippines also benefits from a solid manufacturing foundation, especially in electronics, which are critical to EV production. Its globally competitive electronics industry already supplies essential components such as semiconductors, which are vital to EV operations. Moreover, the country's skilled workforce makes it an attractive location for high-value manufacturing. Recognizing this potential, the government has taken active steps to support the EV sector through policy reforms and incentive schemes. At the same time, the private sector has launched its own initiatives – ranging from the distribution of EVs to investments in battery technologies and charging infrastructure – which demonstrate a shared commitment to growing the industry.

The Philippines is rich in critical minerals such as nickel and cobalt, which are essential to EV batteries. It is positioning itself in the battery segment of the global supply chain by leveraging its vast reserves of these green metals. This creates strong opportunities for downstream industries such as battery manufacturing, refining, and materials processing.

However, one often overlooked aspect of the EV landscape is the secondary or used car market. While most statistics and discussions focus on new EV sales, there is comparatively little attention paid to what happens to these vehicles after their first owners, particularly regarding resale value, battery lifespan, and long-term usability. Moreover, the high cost of battery replacement makes old EVs difficult to maintain and, without a strong second-hand market, they risk becoming disposable gadgets rather than long-term assets. Rapid technological obsolescence may further complicate consumer acceptance. Local conditions such as severe flooding in the Philippines could further diminish public interest in EVs. Exposure to deep water may damage EV systems, reducing their reliability and undermining their perceived advantages. These concerns, ranging from high battery replacement costs to environmental vulnerability, present real challenges to broader EV adoption, especially in markets where long-term value and durability are key consumer considerations.

Combined with ongoing public and private efforts, a growing consumer base, and increasing interest from foreign investors, these strengths can help the Philippines establish a resilient and globally integrated EV ecosystem. In a world marked by shifting trade dynamics and growing uncertainties – such as the resurgence of protectionist measures and tariffs in the United States, a key player in the global economy – the Philippines' core advantages in critical minerals, electronics manufacturing, and skilled labor position it as a reliable and adaptable player in the global supply chain.

The long-term benefits of EVs will become clearer as more data emerges and technologies continue to improve. While EVs reduce reliance on fossil fuels, their growing adoption will naturally increase electricity demand, which highlights the need for investments in clean energy infrastructure. With continued innovation and supportive policies, EVs are well-positioned to become a practical and sustainable mobility choice in an increasingly electrified future, more than being just an alternative during ideal situations.

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### Venice Isabelle Rañosa

is Research Director and member of the Editorial Board at the Stratbase Institute, where she tracks global and local movements in trade and investments, public policy, and sustainable development. She is also in charge of the Economic Snapshots, the Institute's quarterly review of the Philippine economy. At the Stratbase Group, where she serves as the group's Research Director, she concurrently monitors industry, political, and socio-economic risks for stakeholders and various sectors.

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The Financial Tower
6794 Ayala Avenue, Makati City
Philippines 1226

V 7005.3779
V 7000.2748

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