

## The Development of EV Market in ASEAN: Is It Potensial?



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**ABSTRACT:** The prevailing anticipation is that electric cars will establish themselves as the predominant influence in the automotive sector in the next decade. Indonesia and Thailand are two major automobile assembly facilities in the ASEAN area, and they are recognized as some of the biggest internationally. Nevertheless, it is important to evaluate if this specific company has the capacity to replace the well-established fossil-fuel vehicle sector, which has retained its control over the market throughout a significant duration. The conclusive investigation involves using digital analytical methodologies to ascertain consumer demand in the ASEAN area. This study provides a thorough examination of strategies designed to promote the expansion of the electric vehicle sector. These tactics include using technical breakthroughs to efficiently reduce the manufacturing expenses and selling prices of electric automobiles. Furthermore, the article emphasizes the importance of manufacturers' participation in the formation of this sector in the Southeast Asian.

**KEYWORDS:** Electric Vehicle Development, ASEAN Market, EV Marketing, Green Business, Market Development

### I. INTRODUCTION

Many governments across the globe, particularly ASEAN, strongly support the transition of the automobile industry from gasoline-powered vehicles to electric vehicles (EVs). The collaborative effort is motivated by the primary goals of achieving environmental sustainability and improving financial performance [1]. Adopting electric-powered technology as a replacement for conventional autos is a proactive policy strategy to meeting climate change commitments. This transition not only tackles the changing environmental issues but also reduces pollution levels in metropolitan areas, while guaranteeing the long-term viability of energy supplies. Several Asian countries, including Indonesia, Thailand, Korea, and Japan, have developed automobile manufacturing sectors.

Thailand, as a member of ASEAN, demonstrates a praiseworthy level of production and lays considerable importance on creating legislative frameworks to promote the growth of electric cars. The government has created many appealing incentives to promote investments in this sector [2]. Thailand has formulated a comprehensive strategy, detailing its intentions to create a production capacity for 1,000 electric vehicle vehicles per year in 2019, while also setting up the necessary infrastructure for distributing batteries. The goal is to successfully incorporate 1.2 million electric cars (EVs) for passenger usage into a widespread network of national electric vehicle charging stations by the year 2036.

The automobile industry significantly impacts global economic development via its large economic contribution. The International Labor Organization (ILO) states that the annual revenue of the car sector is comparable to the gross domestic product (GDP) of the world's sixth biggest country. The ASEAN member nations have enforced measures such as temporary lockdowns and travel restrictions to reduce the spread of the virus. The automobile industry is now seeing a substantial decline in both demand as well as investment due to the continuing pandemic.

Vietnam's growth suffered a substantial reduction during the preceding pandemic, with predicted revenue expected to plummet by about 32% to a meager 50,000 units. Vietnamese government implemented an economic stimulus program with the goal of strengthening the car sector. This project entails the enforcement of a policy which lowers the price of automobile acquisitions by 50% through the end of 2020, having the objective of boosting demand in the industry. Car production in Thailand has plummeted to its lowest point in the last 30 years, indicating a substantial downturn in the country's automotive sector. The decline in consumers' disposable income led to a substantial 65% reduction in automobile sales. Automobile exports had a significant decrease of 67.7%.

## The Development of EV Market in ASEAN: Is It Potential?

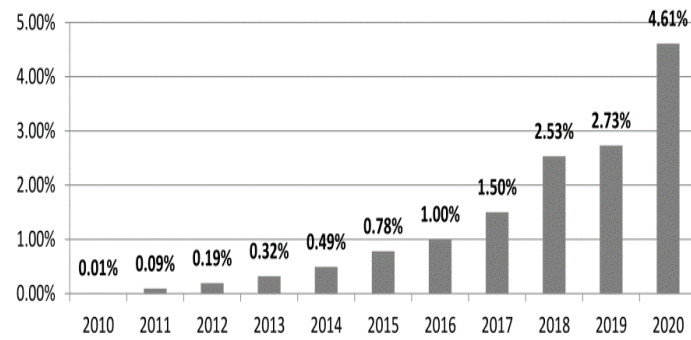


Figure 1. EV Sales

Contrary to the decline experienced in the conventional automobile industry. Based on the statistics shown in Figure 1, the worldwide sales of electric cars in 2020 reached around three million units. China represented 40.5% of global revenues. The worldwide EV market surpassed 10 million units by the end of 2020. Conversely, worldwide sales of traditional automobiles had a 16% decrease [3].

This article aims to provide an analysis and recommendations about the prospective growth of the EV industry in the Southeast Asia area. Additionally, it examines the several possibilities that might be used by interconnected firms to develop efficient tactics. To assess the development potential of the EV industry in Southeast Asia, it is essential to thoroughly analyze many elements. These elements transcend economic concerns and involve cultural, legislative, and marketing issues that are important to automobile firms operating in this area.

## II. STUDY LITERATURE

The proliferation of EVs within the ASEAN area may be ascribed to many sources. An important aspect is the increased awareness of the impacts of the environment including air pollution, and this has pushed governments in ASEAN nations to set ambitious goals for reducing carbon emissions [4]. Electric vehicles (EVs) are seen as a promising remedy for environmental concerns due to the significant role of transportation in generating greenhouse gas emissions. Moreover, continuous progress in EV technology, including as improvements in battery durability, charging infrastructure, and driving range, have heightened the appeal of EVs to customers. Improvements in battery chemistry and decreases in battery prices have led to enhanced cost-competitiveness of EVs in comparison to traditional autos. The growth in demand for EVs across ASEAN countries may be attributed to customer preferences, which are influenced by changing consumer tastes and increased environmental awareness. Moreover, the growing availability of a wide variety of EV models in different price points has generated increasing customer interest, resulting in the rise of the business.

In the approaching years, the transportation, industry, and construction industries are expected to utilize renewable energy sources throughout their production processes. The use of electric power within every aspect of transportation is expected to see a significant increase. Nevertheless, it is crucial to acknowledge that a significant amount of traditional fuel is still being used in this situation. ASEAN nations prioritize the rapid adoption of technology.

Every country prioritizes the implementation and acceptance of electric cars inside its borders. However, the expansion of the industry is equally dependent on the level of demand in the market. The majority of the Gross Domestic Product (GDP) contribution among the Association of Southeast Asian members (ASEAN) is concentrated among six members. Indonesia has the greatest GDP among the member nations of the ASEAN, constituting almost 35% of the total ASEAN GDP. Thailand has the second place in terms of GDP share, behind Indonesia, with a percentage of around 16%. However, when comparing nations based on per capita income, the relative size of GDP in these countries becomes insignificant [5].

There is a substantial discrepancy in income levels. Indonesia, with the greatest GDP among ASEAN countries, has a per capita income that is lower than the average income in the ASEAN area. Singapore has been identified as the top nation in ASEAN when it comes to of per capita income, reaching a significant value of 1322% more than the regional average. Brunei ranks second behind Singapore in terms of per capita income, with a percentage of 683%. Malaysia and Thailand follow with percentages of 239% and 159% accordingly. The rapid pace of EV expansion in these four nations may be ascribed to many variables [6].

The individual's income is anticipated to have a substantial influence on sales of products, specifically EVs, owing to their comparatively elevated pricing in the present market. It is unsurprising that countries like Indonesia, Cambodia, and Myanmar still have a considerable number of oil-powered cars. Like Indonesia, a Southeast Asian country with the biggest GDP within the region, but a below-average income per capita, the government aims to prioritize improving welfare before focusing on the adoption of

## The Development of EV Market in ASEAN: Is It Potential?

technologies like EVs. Although absorption within the upper-class group is possible, it is crucial to thoroughly evaluate the extent of this absorption in relation to other ASEAN nations.

ASEAN has set a target to reach a sales volume of around 1.3 million EVs in its market by the year 2035. Malaysia and Thailand, two countries in Southeast Asia, have established lofty goals for the widespread adoption of EVs inside their borders. Malaysia has established a target to attain a market of 100,000 EVs by the end of 2030. Thailand has established an annual sales goal of 1.2 million EVs for the year 2036. Both countries have strong financial bases, which leads the author to have a favorable view on achieving this goal. Nevertheless, it is crucial to acknowledge that this article does not cover some aspects and contributing elements that need more examination.

By 2040, there is a rising global interest in the widespread adoption of electric cars. Countries outside of ASEAN, such as Sri Lanka, are actively working towards a full transition to electric vehicles, aiming for a 100% utilization rate. However, considering the prevailing economic circumstances in mid-2022, which are marked by high inflation rates and difficulties in fulfilling global financial commitments, the author doubts the practicality of this proposal. Pakistan's goal is to make a substantial transition to electric cars, aiming to capture 90% of the electric vehicle market by 2040. However, considering the unstable conditions in society, economy, and defense, achieving these goals would be a difficult task for the country.

The revenue of electric automobiles in the ASEAN area is expected to undergo substantial increase, hitting an estimated value of USD 3.54 billion through 2028. This expansion is expected to be accomplished by maintaining a CAGR (compound annual growth rate) of 32.73%. The COVID-19 pandemic led to a halt in manufacturing activities during the first six months of 2020. Nevertheless, it is important to acknowledge that the limited accessibility of microchips in 2021 is anticipated to hinder the growth of the business.

Several governments in the ASEAN region have shown their commitment to include electric cars into a significant share of their future car sales in the next years. The ASEAN governments have taken many concrete measures to stimulate economic development, such as offering incentives to encourage the use and purchase of products, which may successfully reduce prices and increase consumer purchasing power.

The surging prominence of electric vehicles in Indonesia can be credited to the implementation of electric transportation systems within prominent urban areas, as well as the participation of technology firms such as Grab, who have recently declared a collaboration with PLN to improve the charging infrastructure for their growing fleet. In the following years, Transjakarta, the public transportation provider, intends to increase its electric bus operation by a maximum of 10,000 vehicles. Given Indonesia's position as one of the countries with the greatest global economic turnover, a significant increase in demand is anticipated within the ASEAN area [7].

Battery manufacturers play a crucial part in the speedy technological shift seen in Southeast Asia, since they make substantial contributions to the formation and prosperity of electric car suppliers in the automotive industry. A location that has a reliable and varied network of battery manufacturers may result in many advantageous results, such as reduced costs and the formation of a viable local supply chain. As to a 2023 article from the South China Morning Post, Eve Energy, a Chinese company, is now involved in building a plant in Malaysia for producing electric vehicle batteries. The projected worth of this facility is 422 million USD [8].

Indonesia, with its abundant nickel deposits, is a leading player in electric vehicle battery manufacture in the ASEAN region. Studies have focused on the nickel deposits of the Philippines, which are expected to account for about 5% of the total, as well as its cobalt reserves, which are estimated to account for around 4%. These two metals have become primary resources in battery manufacturing. The persistent commitment of all governments in Southeast Asia to limit fuel pollution is a crucial element driving the rapid expansion in the area. Furthermore, it is important to highlight that government regulations provide significant support, hence promoting investment in this specific industry.

Thailand has enacted a decrease in the income tax rate, particularly from 35% to 17%, to entice experts in the corresponding industry. In addition, the Thailand government has implemented further steps by decreasing the excise tax on imported electric cars to a rate of 2%. Thailand aims to produce electric cars, accounting for 30% of the annual vehicle output, by 2030. Individuals that make use of electric cars in Malaysia are eligible for tax exemptions. Electric vehicle firms in the Philippines are granted tax incentives by the government for a certain period.

### III. METHODOLOGY

This study is based on qualitative exploratory research, using secondary data analysis from several automobile companies in ASEAN, with a special emphasis on Thailand and Indonesia. The author classifies the progress of this investigation into three separate phases of examination. The analytical approach is based on a theoretical framework that is developed from a comprehensive examination of the available research literature.

## The Development of EV Market in ASEAN: Is It Potential?

The author takes an economic perspective in the next phase to analyze the policies, challenges, and barriers to growth and development faced by the electric vehicle industry across the ASEAN. The research utilizes quantitative secondary data and employs expansion of markets, and strategic management frameworks. To improve the accuracy of the research, the author utilizes many approaches and frameworks from the area of management. Next, we will perform a thorough analysis of market indicators that have been produced from previous data processing. This analysis will include the strategic objectives of ASEAN member countries regarding the expansion of the electric vehicle industry, as well as the potential competitive advantages that may be identified.

### IV. FINDINGS

The conventional car industry has seen a substantial decrease in its rate of expansion after the last epidemic. The traditional automotive industry reached its peak in 2019, before the worldwide onset of the Covid-19 epidemic. The examination of the polynomial trend line shows a significant and repetitive decline in the overall data. In 2017, there was a decline in the market, which was then followed by an increase from 2018 until 2019. Nevertheless, in 2020, the industry once again saw a lack of favorable development. This result was enabled by two main considerations, namely the reduced local and regional demand, and the restricted production and shipping of raw resources globally during that time. An ongoing difficulty in the field of supply chain management, continuing until the third quarter in 2022, is the difficult work of acquiring semiconductor chips.

The automotive industry in the ASEAN region heavily depends on four primary countries: Indonesia, Malaysia, Thailand, and the Philippines. Indonesia and Thailand together contribute to over half of the automotive sales in the ASEAN area. It is hardly surprising that these two nations have the greatest automobile production facilities in Southeast Asia. It is more captivating to be further investigated. Was the drop only caused by the market's hesitancy to make purchases. While conventional automotive sales declined, electric vehicles (EVs) had a significant increase in sales from 2019 to 2020, as seen in Figure 4. In 2020, electric vehicle (EV) sales had a significant increase of over 170%, while the GDP generated by ASEAN declined by 4.7%. In addition, there was a substantial decrease of 29% in the sales of traditional vehicles throughout the same year.

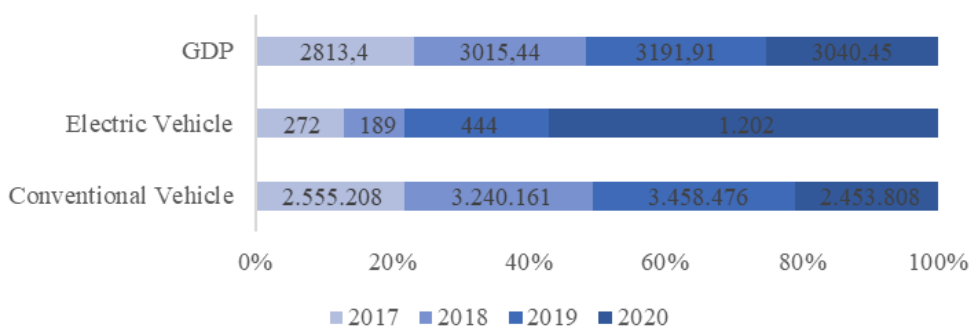


Figure 1. EV Vs Conventional Vehicle Sales

Although there are notable disparities in sales volume, the EV market may be compared to the biblical story of Goliath and David, where EVs embody David and the conventional automobile sector represents Goliath. The conventional automotive industry has maintained a longstanding hegemonic position, comparable to that of Goliath, while the electric vehicle sector, like to David, is endeavoring to contest and perhaps disrupt this established hierarchy. Percentage growth and decline assessment is a crucial indicator for evaluating the overall contraction of the market in the Southeast Asia region.

According to the existing information, it can be deduced that variations in GDP growth and decline are likely to have a similar impact on the sales of traditional autos. Nevertheless, it is crucial to acknowledge that this influence might vary substantially when considering sales of electric vehicles. The given evidence suggests a noticeable rise in customer demand for electric cars in Southeast Asia. The demand stems mostly from affluent persons who have substantial financial means and have not been negatively impacted by the current outbreak. In the next years, a significant number of electric vehicle manufacturers are expected to show great interest in the ASEAN market. Tesla has entered a pact with Indonesia to undertake a significant investment in the creation of a vehicle battery production plant. Furthermore, it is worth mentioning that other conventional automakers, such as Toyota, Hyundai, and Suzuki, are now shifting their focus towards manufacturing hybrid and completely electric cars.

The author utilizes a five forces concept to examine the upcoming industrial competitiveness in the ASEAN area. ASEAN countries must exhibit patience in sharing information about the benefits of electric autos to enhance customers' bargaining power. Moreover, the cost-effectiveness of electric cars continues to be a crucial component impacting this occurrence. To increase customers' ability to negotiate, they may choose to switch to other goods, such as fossil fuel cars, which are still common and easily accessible in this specific region. The guarantee of battery availability has become a notable challenge for electric vehicle producers, especially when considering the sourcing of raw materials within this sector. Nations with extensive reserves of cobalt and nickel,

## The Development of EV Market in ASEAN: Is It Potential?

which are the fundamental components in electric vehicle batteries, are going to have considerable influence in the electric car industry. The industry's entrance barrier is expected to be large owing to the need of a major financial investment, as well as the requirements of legal, political, and network support from important countries. Aspiring manufacturers may face substantial obstacles while trying to establish their presence in the business. Therefore, it may be deduced that the future market structure is expected to display features of an oligopoly. The upcoming industry is expected to be controlled by well-established manufacturers with deep expertise and significant financial resources.

### V. CONCLUSION

The expansion of the electric vehicle sector will continue to rely on government assistance. The discussed forms of support include fiscal policy and marketing efforts. Several ASEAN member states have implemented diverse government initiatives that showcase substantial progress.

Government policies undergo frequent modifications, especially during political power transitions. To promote the fast development of the electric vehicle sector, it is crucial for countries to build long-lasting and collaborative agreements across different government departments. This will ensure the successful implementation of the industry's expansion. Although conventional cars currently hold a large portion of the market, it is possible that electric vehicles might emerge as the leading force in the future. This would require government entities and relevant companies to consider the following factors.

To promote innovation, it is crucial to enhance the technological capacities that enable the production of affordable and easily accessible electric car products. The pricing issue is of great significance to customers in the ASEAN area. Lowering the prices would enable a wider reach in the market. Indonesia, as an example, considers the existence of dealerships in different locations as a determinant in their car purchase choices.

The government must prioritize increasing customer interest in purchasing electric vehicles. The effectiveness of tax reduction initiatives has been proven in Thailand and Indonesia. Efficiently stimulating market demand will need the use of supplementary non-monetary tactics. The formation of partnerships with manufacturers will also be crucial. Alongside the necessity of economic stability, politics and stability are fundamental aspects of governance in all countries. To improve the efficiency of industry, it is crucial to recognize the importance of government intervention in granting production and investment licenses to companies aiming to establish themselves in the nation. To improve quality and lower costs, it is crucial to increase the number of players in the industry. The ASEAN area has significant market potential since there has been a noticeable increase in consumer interest in electric cars. The significant increase in electric vehicle sales seen during 2020, together with the extensive level of attention it has aroused, exemplifies these phenomena. The expansion of the electric vehicle business relies on the cooperation of manufacturers, while individual attempts to monopolize the market are inadequate. Individuals must participate in collaborative efforts to improve the effectiveness and standard of the supply of goods and knowledge.

The author suggests that the electric vehicle market is positioned to see substantial growth in the years to come. This claim is supported by historical sales data and the increasing degree of consumer enthusiasm in the ASEAN area, together with the unwavering pledges provided by governments in every distinctive nation. The future of modern public transportation hinges on the widespread adoption EVs, which emphasize both efficiency and environmental conservation.

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