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The Ukrainian Electric Vehicle Market As A Promising Segment For The Development Of The Auto Business

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Abstracts
The paper examines the current state of the Ukrainian electric vehicle market and the main directions of its development. It is shown that interest in cars with an electric engine is gradually growing, which is associated with increased attention to ecology, fuel economy and the development of new technologies. For a better understanding of the situation, data was used that clearly demonstrate changes in the electric vehicle market.
Separately, it is analyzed how the number of electric vehicle registrations has changed, as well as how they are distributed depending on the year of manufacture, type of charging and region. This allows us to see the general trends in the spread of electric vehicles in Ukraine and identify the regions where they are used most actively. This approach helps to assess the level of development of electric transport in the country.
The paper also identifies the main advantages of using electric vehicles, in particular their environmental friendliness, lower operating costs and convenience in an urban environment. In addition, the state of the charging infrastructure, its role in the spread of electric vehicles and its significance for the further development of this market in Ukraine are considered.
Keywords: electric vehicle market, automotive business, car dealerships, business development, electric vehicle sales, consumer demand, vehicle registration, electric transport, automotive business, car dealerships, electric vehicle sales.

Introduction

The global market for electric vehicles is actively developing, and Ukraine is also gradually joining this process. Despite the growing interest, the widespread use of electric vehicles has long been hindered by their high cost. An important step for the development of this segment was the introduction of a zero rate of import duty on vehicles with an electric engine.
The corresponding decision, enshrined in law, began to operate from the beginning of 2016 and in a short time showed the interest of Ukrainian consumers in using environmentally friendly transport. For the auto business, the abolition of duty became a factor in lowering the barrier to entry into the electric vehicle segment: import operations became more active, competition between dealers increased, and the role of service and the seller's reputation strengthened. At the same time, demand for additional services was formed (battery check, diagnostics, selection of equipment, delivery, document processing). This became an impetus for more active development of the electric vehicle market and attracted the attention of both buyers and participants in the automotive business.
From the perspective of the automotive business, the electric vehicle segment creates new sources of income for car dealers and related companies: import and sale of electric vehicles, selection and delivery of custom-made cars, trade-in, service services, warranty support, installation of charging equipment and consulting services for customers. The growth in the number of electric vehicle registrations indicates an

expansion of the potential customer base and increases the relevance of adapting dealer strategies to the demand for electric vehicles.

In conditions of energy shortages, increasing environmental pollution and unstable economic situation, electric vehicles are considered a promising mode of transport. They combine innovative technologies, environmental friendliness and potential for further development, which makes them an important direction for the modern transport market of Ukraine.

Analysis of recent research and publications

A review of scientific publications and research shows that the issue of the development of the electric vehicle market in Ukraine has been considered by domestic and foreign scientists, including: M. A. Vesela [1], V. S. Girin [2], I. V. Girin [2], V. M. Dembitsky [3], M. Yu. Lalakulich [4], O. V. Stepanov [5], V. Yu. Fillipov [6], Ya. V. Shevchuk [4], O. I. Shevchuk [4] and others [5–20]. At the same time, the issue of the development of the electric vehicle market in Ukraine remains insufficiently researched.

Formulation of hypotheses and setting goals

The study tested the hypothesis regarding the feasibility of developing the market for electric vehicles in Ukraine as an environmentally friendly, low-noise and economical mode of transport, which at the same time remains relatively expensive in terms of purchase cost. The relevance of such development is justified by modern socio-economic and environmental challenges.

The purpose of the study is to analyze the state and dynamics of the development of the electric vehicle market in Ukraine based on available pre-war statistical data. A separate practical task of the study is to assess the business potential of the electric vehicle segment for participants in the auto business (car dealers, importers, service companies), in particular through the analysis of the dynamics of registrations, the structure of demand and the regional concentration of consumers. The work examined in a generalized and graphical form the structure of the popularity of electric vehicles by brand and model, the features of the registration of electric vehicles over the years, as well as the dependence of registrations on the year of manufacture of vehicles.

In addition, the general trends in the registration of electric vehicles for certain periods, their distribution by charging methods and regions of Ukraine as of the beginning of 2022 were analyzed. Special attention was paid to determining the main advantages of using electric vehicles and assessing the state of the charging infrastructure, which are important factors for the further development of this market, taking into account the limitations associated with military events.

Research methods

The study used a combination of general scientific, empirical and theoretical methods. In particular, the analysis method was used to study changes in the registration of cars with an electric engine for certain periods, by year of manufacture, charging method and regional distribution, as well as to assess the overall dynamics of the development of the electric vehicle market in Ukraine based on available data until the beginning of 2022. The obtained statistical indicators were also interpreted in an applied business context: as indicators of market capacity, demand by region, supply structure (new/used) and prospects for the formation of dealer sales channels.

At the same time, in 2024–2026, the electric vehicle market in Ukraine developed in a different macroeconomic and regulatory environment, which is important to take into account when interpreting the results obtained in the study. In particular, according to the Main Service Center of the Ministry of Internal Affairs (Ukrinform), in 2024, 51.7 thousand electric vehicles were sold in Ukraine (38% more compared to 2023), and since the beginning of 2025, 7239 electric cars have been registered, of which 6024 were imported from abroad, and 1215 were new. Such dynamics indicate a significant expansion of the market and potential customer base for car dealers, as well as the preservation of the significant role of imports in shaping the supply of electric vehicles in Ukraine [21]. The synthesis method was used to determine the main advantages of using electric vehicles. The work also used methods of generalization and explanation in order to form a holistic picture of the state and trends in the development of the electric transport market. Classification and a systematic approach were used to organize the information. In addition, the study used special methods of scientific knowledge, in particular formal-logical and comparative methods, which allowed comparing individual indicators and drawing substantiated conclusions regarding the development of the electric vehicle market in Ukraine.

Presentation of the main material

Automobility is an important factor in the socio-economic development of countries, therefore, the presence of a competitive and developed automotive market is a necessary prerequisite for stable economic growth. The global automotive market is developing in the context of the introduction of innovative technologies, and the most dynamic growth is observed in the segment of vehicles with electric

engines. The growing need for energy resources, their gradual depletion, high prices for traditional energy sources and the aggravation of environmental problems stimulate the replacement of cars with internal combustion engines with electric vehicles. If the current rates of production are maintained, oil as the main source of energy may be exhausted in the relatively near future.

Although the electric motor was created earlier than the internal combustion engine, the mass distribution of electric vehicles occurred only in the 21st century. According to Bloomberg NEF forecasts [7], in 2040 electric vehicles will account for about 58% of global passenger car sales. Ukraine is among the European countries with the highest annual growth rates of the number of electric vehicles. As noted in [8], the current state of the automotive industry is characterized by the triad of "change – development – progress", where the key driver of transformations is electromobilization.

Financing for the development of the electric vehicle industry in the world is growing rapidly. Thus, in 2016, the volume of investments amounted to about 2 billion USD, which was twice the figure in 2015, and was directed to the development of startups, charging infrastructure, car production and implementation of government support programs [8]. According to Reuters estimates [9], by 2030, global automakers plan to invest about 515 billion USD in the development and production of electric vehicles and related technologies. The leaders in terms of planned investments are Volkswagen (112 billion USD), Daimler (47 billion USD), Stellantis (36 billion USD), Ford (30 billion USD) and GM (28 billion USD) [9].

Until 2016, electric vehicles could not seriously compete with gasoline and diesel cars due to their high cost, limited range, low battery life, and insufficient development of charging infrastructure. However, thanks to innovative technologies, these shortcomings were gradually reduced, a significant role in this was played by hybrid cars, which combine an internal combustion engine and an electric motor with a battery and can work both separately and together [4].

In Ukraine, the electric vehicle market is showing steady growth. If in 2012–2013, electric vehicles only began to appear, then by the end of 2020 their number exceeded 20 thousand units. In January–September 2020, 5,384 electric vehicles and 297,046 passenger cars with internal combustion engines were registered in Ukraine, which corresponds to a ratio of 2% to 98%. A characteristic feature of the Ukrainian market is the dominance of used electric vehicles imported from the USA and European countries [10].

Such a market structure creates a specific business model for dealers: the margin is formed not only on sales, but also on related services - logistics, customs clearance, certification, pre-sales preparation, selection of spare parts and organization of repairs. To increase customer confidence, it is advisable to introduce transparency standards: a report on the condition of the high-voltage battery, damage history and real mileage.

According to the Federation of the Ukrainian Automobile Industry [10], in 2021 the number of registered passenger electric vehicles increased by 19% compared to 2020 and reached 8541 units, and the share of new electric vehicles increased to 14.2% compared to 8.9% in 2020. In 2021, about 200 models of electric vehicles from 58 brands were presented on the Ukrainian market. The further development of the electric vehicle market largely depends on the improvement of batteries and energy recovery systems. A promising direction is to reduce the mass of batteries without losing their capacity, as well as the use of additional sources of electricity generation, in particular solar panels and other generators. An increase in the share of electric vehicles will contribute not only to the modernization of the automotive industry, but also to structural changes in the national economy, reducing dependence on oil and gas, and reducing environmental pollution [4].

The main advantages of electric vehicles are environmental friendliness, significant savings on refueling, ease of maintenance, low noise level and access to charging infrastructure. According to [11], the cost of charging an electric vehicle is approximately ten times lower than the cost of gasoline. At the same time, although electric vehicles are not completely "zero" in terms of emissions during the life cycle, they produce at least 22% less CO_2, and in countries with decarbonized energy — up to 70–80%. In Ukraine, 53% of electricity is produced by nuclear power plants, and the increase in the share of renewable sources will increase the environmental friendliness of electric transport.

The Euro-6 standard has been in effect in the EU since 2015, while Ukraine has implemented Euro-5 since 2016, and the application of Euro-6 for new cars has been postponed until 2027. A number of European countries, including Norway, Sweden, the United Kingdom, and Denmark, have officially declared plans to ban the sale of new gasoline and diesel cars in the coming decades [12].

The total number of electric vehicles in Ukraine has exceeded 33,000 units, and demand continues to grow. In 2021, 8,541 electric vehicles were purchased, which is 18.9% more than in 2020 and is a record figure for the entire sales period. Until the end of 2022, the Tax Code of Ukraine provides for a preferential

regime for the import of electric vehicles, including exemption from VAT, and a special excise tax is also in force, depending on the battery capacity. Since 2020, the service centers of the Ministry of Internal Affairs have been issuing green license plates for electric cars and electric buses, which provides their owners with a number of infrastructure benefits.

The most popular brands and models of electric cars in Ukraine in 2021 are listed in Table 1.

Table 1
TOP-10 most popular electric vehicles by car brands
and models in Ukraine in 2021/units

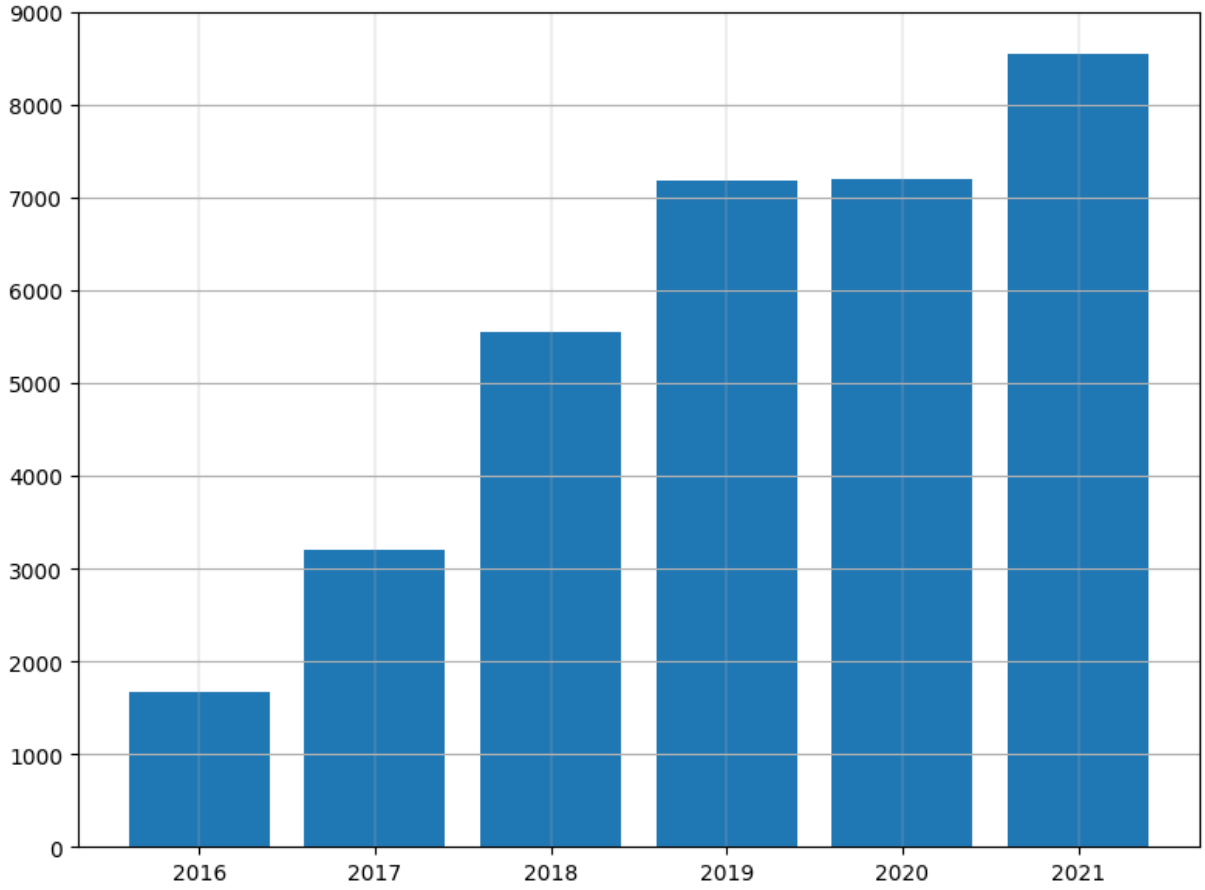
No.	By car brand	By car model
1	Nissan – 2227	Nissan Leaf – 2097
2	Tesla – 1670	Tesla Model 3 – 827
3	Chevrolet – 802	Chevrolet Bolt – 762
4	Renault – 551	Tesla Model S – 394
5	Volkswagen – 550	Renault Zoe – 354
6	Hyundai – 363	Audi e-tron – 271
7	Audi – 334	Volkswagen e-Golf – 233
8	BMW – 250	Hyundai Kona – 216
9	Mercedes-Benz – 236	Tesla Model X – 210
10	Kia – 154	Tesla Model Y – 179

Formed by the author based on data [10,13]

As can be seen from Table 1, the market leaders remain unchanged: first place is Nissan (2227 units), second is Tesla (1670 units), and third is Chevrolet (802 units). In total, 200 different electric models from 58 brands were sold on the Ukrainian market in 2021. The most popular electric cars in Ukraine are, as before, Nissan Leaf (2097 units), Tesla Model 3 (827 units) and Chevrolet Bolt (762 units).

For car dealers, these models are the basis for forming inventories and forecasting demand: mass models (Nissan Leaf, Chevrolet Bolt) provide stable turnover and a wider audience, while premium Tesla models form a higher average margin, but require better consulting support, service network and financial instruments (credit/leasing). Accordingly, the dealer strategy should combine the “mass segment” and “premium” depending on the region and the solvency of customers.

Fig. 1. Dynamics of registration of cars with an electric engine in Ukraine for 2016–2021.



Compiled by the author based on data from [10,13]

Table 2
Number of registered electric vehicles as of 1.01.2022 by regions of Ukraine, units

No.	Regions of Ukraine	Number of electric vehicles
1	Kyiv	7338
2	Odesa Oblast	4840
3	Kyiv Oblast	3833
4	Kharkiv Oblast	3247
5	Dnipropetrovsk Oblast	2746
6	Lviv Oblast	2239
7	Vinnytsia Oblast	977
8	Zaporizhzhia Oblast	880
9	Zhytomyr Oblast	804
10	Poltava Oblast	674
11	Rivne Oblast	662
12	Chernivtsi Oblast	539
13	Ternopil Oblast	535
14	Khmelnytskyi Oblast	533
15	Mykolaiv Oblast	489
16	Ivano-Frankivsk Oblast	489
17	Donetsk Oblast	481
18	Cherkasy Oblast	442
19	Volyn Oblast	430
20	Zakarpattia Oblast	430
21	Kherson Oblast	256

22	Sumy Oblast	227
23	Kirovohrad Oblast	226
24	Chernihiv Oblast	153
25	Luhansk Oblast	50
26		2

Formed by the author based on [10,13]

According to the results of expert research [14], in 2020 the following models were included in the list of the best and at the same time affordable electric cars: Kia e-Niro, Volkswagen ID 3, Peugeot e-208, Hyundai Kona Electric, MINI Cooper SE, Kia Soul EV, Nissan Leaf, Renault Zoe, Honda E and BMW i3. Tesla electric cars were not included in this rating due to their limited availability at that time.

An important factor in the development of the electric car market is the formation of a convenient and extensive charging infrastructure. According to the marketing agency IRS Group, in September 2020, 8,529 electric charging stations operated in Ukraine, while their number increased by more than 50% during the year [11]. A significant share of the Ukrainian charging infrastructure market is occupied by the Kharkiv company Autoenterprise [15], which manufactures charging stations, manages its own network, and imports electric vehicles. The company specializes in the manufacture of high-speed commercial charging complexes capable of servicing five to six cars at a time, and implements both internal and external projects, including white label. In addition, Autoenterprise initiated the Charge Sharing program, which allows charging station owners to provide charging services at their own rates within the framework of the "sharing economy" concept. With the development of infrastructure, the number of electric vehicles in Ukraine is growing, which has contributed to the emergence of the phenomenon of so-called "charging queues". Since 2016, charging stations with remote access to the network have been operating, which are managed via servers, and partner platforms are also developing. In particular, the company Go To-U is forming an international network of charging stations and the To-U mobile application, which allows users to check the availability of stations and reserve charging time. The platform includes a mobile application for users and an operating system for businesses that ensures the integration of charging stations into the activities of hotels, restaurants and other establishments. The company TOKA is also engaged in the production of charging stations and the development of its own network, offering algorithms for booking and automatic calculation of the time of arrival at the station.

Depending on the terms of the partner programs, charging stations can be free, available only to customers of certain establishments or provide charging services on a paid basis. According to [2], in the event of a complete transition of the population of Ukraine to electric vehicles, the existing power grid capacities would be sufficient to meet electricity needs. It is noted that during night charging from a regular outlet, an electric car can receive about 2 kWh per hour, which in 10 hours provides approximately 20 kWh of energy and allows you to drive more than 100 km, while the average daily mileage in urban conditions is 50–60 km.

The dynamics of the shares of sales of primary new passenger cars, used cars and electric cars in Ukraine for 2016–2021 are given in Table 3.

Table 3

Dynamics of the shares of sales of primary new passenger cars, used cars and electric cars in Ukraine for 2016–2021, %

Years	Product types			Total
	New cars	Used cars	Electric cars	
2016	75,44	22,65	1,91	100
2017	53,37	44,56	2,08	100
2018	63,97	33,55	2,48	100
2019	39,85	56,92	3,24	100
2020	40,94	55,61	3,45	100
2021	16,41	82,23	1,36	100

Formed by the author based on data from [10,13]

As can be seen from Table 3, in 2021 the share of sales of new passenger cars decreased significantly, while the share of sales of used cars reached 82.23%. The share of sales of electric cars remained insignificant and in 2021 amounted to only 1.36%.

For the auto business, this means that electric cars currently remain a niche but rapidly growing product, where competitive advantages are formed through the expertise of the seller, the quality of car selection, warranty offers and service. Even with a small market share, dealers can make a profit due to the high added value of related services and effective channels for attracting customers (online sales, custom selection, trade-in).

Compared to 2020, the volumes of the primary passenger car market have decreased by more than half, which is due to a sharp decrease in the number of registrations under quarantine restrictions. In addition, in the previous year, Ukraine had preferential conditions for customs clearance and legalization of foreign-registered vehicles, which contributed to the growth of used vehicle registration rates.

Analysis of world experience shows that one of the most effective incentives for the development of the electric vehicle market is exemption from tax and customs payments. To ensure and maintain the positive dynamics of the development of the electric vehicle market in Ukraine, it is advisable not only to cancel import duties, but also to exempt electric vehicles from paying value added tax. For domestic manufacturers of electric vehicles, it is important to reduce the tax burden. It is also advisable to introduce preferential credit programs with a low interest rate for the purchase of electric vehicles, provide benefits in the form of free parking and access to central parts of cities, as well as the possibility of moving along public transport lanes. In addition, it is necessary to stimulate the introduction of high-speed electric charging stations in central areas of cities and on the territories of gas stations.

Conclusions

Summing up the above, it should be noted that the market for cars with an electric engine in the world is developing dynamically, and Ukraine also demonstrates positive trends in this direction. At the same time, the mass distribution of electric cars is hindered by their relatively high cost. The main advantages of electric cars are environmental friendliness, lower refueling costs, simpler maintenance, reduced noise levels and harmful emissions, however, the key condition for their effective use remains the availability of charging infrastructure. Compared to cars equipped with gasoline or diesel engines, electric cars are currently one of the most effective and convenient ways to decarbonize transport.

Analysis of the Ukrainian automotive market shows that in 2021 there was a significant reduction in the share of sales of new passenger cars, while the share of sales of used vehicles reached 82.23%, which indicates structural changes in the country's automotive market.

From a practical point of view, the electric vehicle segment is a promising direction for the development of the auto business in Ukraine. For car dealers, the key success factors are the formation of a transparent offer (battery diagnostics, confirmation of technical condition), the development of after-sales service and partnerships with charging networks. Additional opportunities are created by financial instruments (credit/leasing), trade-in and the sale of charging equipment as an associated product. In the future, market growth will depend on supporting imports, infrastructure investments and increasing consumer confidence in the quality of electric vehicles on the secondary market.

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