

# DIFFERENCES BETWEEN TURKEY AND EU COUNTRIES ON TAXATION POLICY FOR ELECTRIC VEHICLES\*

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## ABSTRACT

This study aims to show the differences and consequences of tax rates applied to vehicles with electric motors between Turkey and EU countries. Clarifying the situation clearly is the most important step in solving the problem. However, it is debatable that not promoting electric vehicles is a problem. Although studies on this subject have not yet reached a definite conclusion, the EU is insistent and taking various initiatives to spread the use of renewable energy sources. The EU advocates that every investment in renewable energy will be both more profitable and more environmentally-friendly in the long run, taking into account the external costs. For this reason, it applies different measures and incentives for the transition to electric vehicles. While the EU takes measures such as carbon-based taxation of vehicles, it also applies financial and fiscal incentives during the purchase and use of electric vehicles.

In Turkey, tax incentive practices in this regard are behind EU countries. Although a lower tax rate is levied on the purchase of electric vehicles than internal combustion engine vehicles, these taxes are observed to be higher than the EU. At the same time, post-purchase motor vehicle tax (MTV) is higher than the EU. Besides, there is no financial incentive for the purchase of electric vehicles. Comparatively, support is provided up to 5,000 € in the purchase of electric vehicles in EU countries, although it varies from country to country. Due to these reasons, as a result of the study, it is seen that the rate of electric cars among the cars registered for the first time in Turkey is 0.3%, while this rate is 10% in EU countries.

**Keywords:** Electric Vehicles, Tax Incentives, Automobile Taxes.

**JEL Codes:** E62, E63.

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## TÜRKİYE VE AB ÜLKELERİNDE ELEKTRİKLİ ARAÇLARIN VERGİLENDİRME POLİTİKASI ARASINDAKİ FARKLAR

### ÖZ

Bu çalışma, Türkiye ile AB ülkeleri arasında elektrikli motora sahip olan araçlara uygulanan vergi oranlarındaki farklılıkları ve sonuçlarını göstermeyi amaçlamaktadır. Durumun net olarak ortaya konulması sorunun çözümü için en önemli adımdır. Bununla birlikte elektrikli araç kullanmayı teşvik etmemenin bir sorun olduğu da tartışmalıdır. Bu konuda yapılan çalışmalarda henüz kesin bir sonuca ulaşılmamıştır. Bununla birlikte AB, bu konuda ısrarlı ve girişimci bir pozisyonda yer almaktadır. AB, dışsal maliyetlerin de göz önüne alınmasıyla, yenilenebilir enerjiye yapılacak olan her yatırımın uzun vadede hem daha karlı hem de daha çevreci olacağı görüşünü savunmaktadır. Bu nedenle elektrikli araçlara geçiş konusunda farklı tedbirler ve teşvikler uygulamaktadır. AB, taşıtların karbon bazlı olarak vergilendirilmesi gibi tedbirler alırken, elektrikli araçların satın alınması ve kullanılması sırasında da finansal ve mali teşvikler uygulamaktadır.

Türkiye’de ise bu yönde vergisel teşvik çalışmaları AB ülkelerinin gerisinde bulunmaktadır. Her ne kadar elektrikli araçlardan, içten yanmalı motorlu araçlara göre satın almada daha az vergi alınıyor olsa da alınan vergiler AB düzeyinde yüksek boyutlarda olmaktadır. Elektrikli araç satın alınmasında ise herhangi bir finansal teşvik bulunmamaktadır. AB ülkelerinde elektrikli araç alımında ülkeden ülkeye değişimle birlikte 5.000 €’ya kadar karşılıksız destek sağlanmaktadır. Bu nedenlere bağlı olarak, çalışma sonucunda görülmektedir ki, Türkiye’de ilk kez kaydı yapılan otomobiller arasında elektrikli otomobillerin oranı %0,3 iken, AB ülkelerinde bu oran %10 düzeyindedir.

**Anahtar Sözcükler:** Elektrikli Araçlar, Vergi Teşvikleri, Otomobil Vergileri.

**JEL Kodları:** E62, E63.

### 1. INTRODUCTION

Today, the transportation industry has become important both for individuals and trade. In this sense, transportation services are pivotal for individuals, while they play a major role in the continuation of commercial activities. Thus, transportation means and services are indispensable for economic growth. However, increasing transportation opportunities and the excessive use of private vehicles have led to discussions regarding negative effects of internal combustion engines on the environment.

The European Union (EU) systematically develops strategies to reduce the effects of harmful gases released by cars and other vehicles into the environment. As part of the efforts to reduce greenhouse gases, it aims to expand the use of electric vehicles. In this context, electric vehicles are accepted as advantageous as they operate free of carbon fuels. At the same time, these vehicles do not lead to carbon emissions. At this point, different discussions come to the fore: How will the electricity needed by electric vehicles be supplied? In addition to this question, it is argued that if there is an increase in the production of carbon resources used in electricity generation, the spread of electric vehicles will not reflect positively on the environment at the expected level. Moreover, there is increasing criticism

on electric vehicles due to the high costs of transition to electric vehicles, the relative weakness of battery technology and the negative environmental effects of storing or destroying batteries that have expired. On the other hand, the EU argues that clean energy production is possible with the strategies it implements to expand electricity generation with renewable energy sources.

Turkey is among the countries that signed the Kyoto Protocol. However, Turkey does not have emission reduction goals in the Kyoto Protocol. In this regard, Turkey runs various projects to reduce its carbon emissions its own way. While there are environmental and economic reasons for these projects, the most important reason is the candidacy for EU membership. The EU Commission follows the regulations made within the framework of harmonization with the EU during the membership process. For this purpose, annual progress reports are prepared regularly. Regulations, laws and practices made under the title of *Environment and Climate Change* are monitored under *Chapter 27*. This chapter is also important as one of the chapters opened for negotiation in the progress process. Therefore, in order to become an EU member state, Turkey has to conclude this chapter, like other chapters, by making arrangements in line with the EU acquis. While this process continues, it seems likely that Turkey will implement regulations and policies in line with the EU acquis over time.

The Climate Change Action Plan, which was put forward for this purpose, determines various goals and projects for different sectors. In this context, the following goals are set: To reduce primary energy consumption in the transportation sector, increase the use of renewable sources in electric power production, reduce electricity distribution losses and greenhouse gas emissions caused by electricity consumption used in various industries.

However, providing the necessary investments to achieve these goals causes high costs. As a developing country, Turkey gives priority to the growth-oriented use of its resources. Most of the EU member states are composed of countries that have completed their capital accumulation or received high level financial support from the Union. This is considered a process that creates injustice for Turkey. It is argued that EU member countries benefit greatly from carbon resources in their growth and industrialization processes. For this reason, it is stated that Turkey should not be hasty in this matter.

The difference in Turkey's financial and fiscal practices for electric vehicles can be evaluated in this context. However, the fact that Turkey is highly dependent on foreign energy and imports the fuel needed by internal combustion engines contradicts these views. Turkey can obtain energy with the carbon resources it produces and thus, put effort for further growth. However, in terms of consumption, increasing renewable energy sources

and the spread of electric vehicles can have positive environmental as well as financial impacts. This becomes crystal clear considering that the biggest item of Turkey's foreign trade deficit is the energy sector.

Another reason for applying different policies for electric vehicles is the tax factor. Turkey largely needs indirect taxes to gain tax revenues. The current automotive sector has a large share in indirect taxes. Taxes are collected on many items such as the purchase of the vehicle, high tax rates from fuel, and annual MTV (Motor Vehicles Tax). For this reason, it is considered difficult to financially manage incentives to electric vehicles, providing tax advantages, promoting widespread use of electric vehicles as well as reducing fuel taxes.

This study is designed to reveal the tax differences between Turkey and the EU on electric vehicles, which the EU attaches importance to. In the EU membership process, Turkey has to make regulations on issues such as tax harmonization, as well as environmental and climatic duties. Offering efficient regulations is first related to the clear determination of the problem. It is important to ensure logical harmony in order to achieve legal compliance. For this reason, the study is important in terms of revealing the taxation differences between Turkey and the EU, and manifesting how these differences are reflected on daily life.

In order to reveal these differences, the tax rates and tax methods applied by EU Countries to electric vehicles and the tax incentives provided to electric vehicles were determined and compared with Turkey. As a result of the study, it is important to reveal how tax application differences affect the demand for electric cars.

## **2. THE IMPORTANCE OF FINANCIAL INCENTIVES FOR ELECTRIC VEHICLES**

The fact that internal combustion engines cause intense oil demand and high greenhouse gas emissions pushes countries to support new technologies that reduce energy costs and provide sustainable transportation. In this regard, countries support the spread of hybrid vehicles (HEV), plug-in hybrid vehicles (PHEV) and electric vehicles (EV) together with hybrid vehicles (Zhou et al., 2015, p. 778). The working principle of HEVs is based on the fact that the internal combustion engine is powered by energy from an electric motor. HEVs store energy from braking in batteries. This reduces fuel consumption in urban traffic, resulting in a reduction in carbon emissions and fewer fuel costs (Jenn et al., 2013, p. 936). EVs, on the other hand, do not have an internal combustion engine and are powered only by an electric motor. Therefore, EVs have no fuel consumption and greenhouse gas emission values. Due to this feature, they are considered to be the most

environmentally-friendly vehicles, however the high initial purchase costs overshadow the advantage of no fuel costs.

For this reason, although they reduce air pollution, consumers evaluate EVs with their prices rather than their social benefits. In this context, since consumers first consider their initial purchase costs, EVs are not considered attractive. Therefore, along with the environmentally-friendly engines, vehicles also need to be economical. Thus, governments have major tasks at this point. Although these tasks bring economic incentives to consumers, they should also consist of financial incentives that will encourage manufacturers (Zang et al., 2014, p. 8061). It is not easy for consumers to calculate costs in this regard and make long-term profit-loss estimations. One of the reasons for this is the fact that oil prices cannot be foreseen. Excessive increase in oil prices can make electric motors advantageous. From this point of view, it can be said that electric assisted engines are a financial insurance (Diamond, 2009, p. 982). Hence, government incentives are important in consumer decisions. Furthermore, there are also benefits such as reducing countries' dependence on carbon-based energy.

It can be understood from the increasing number of sales of EVs every year that consumers tend to take a positive approach towards incentives. Incentives and tax advantages for EVs eliminate the price disadvantage compared to ICEVs. In addition, the low cost of use and the advantages provided in their annual taxes increase the chances of EV preference (Bjerkkan et al., 2016, p. 170).

This continues to apply to HEVs as well. Gallagher and Muehlegger (2011) In their study on the US states, they determined that tax incentives have a positive effect on HEV sales. Indicating that different incentives have different effects on HEV sales, the study shows that tax incentives on sales are stronger than other incentives (Gallagher & Muehlegger, 2011, p. 2).

Hardman et al. put forwards another study showing the importance of incentives to be applied during purchase (Hardman et al.). According to the study on the countries where the most electric vehicles are sold, grants or VAT (Value Added Tax) exemption is much more effective than tax credits. Despite this, all kinds of incentives should be used in vehicles that have an electric motor. Vehicles with an electric motor should be supported, while ICEVs should be taxed at high rates. As this will discourage the use of ICEV, the income from these vehicles can be used to encourage the purchase of vehicles with an electric motor (Hardman et al., 2017, p. 1110). Research on PHEVs (Münzel et al., 2019) is another study that shows the importance of financial incentives for electric motor vehicles. According to the study covering 32 EU countries, an incentive of 1000 Euros will increase the sale of PHEVs by 5%-7%. Besides financial incentives, the

presence of more PHEVs on the market will also affect consumer trends (Münzel et al., 2019, p. 12).

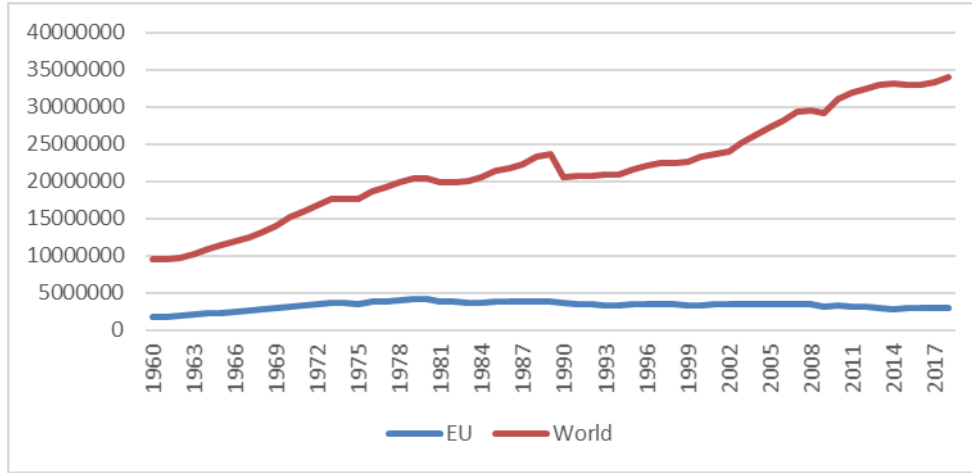
Consequently, research so far reveals the importance of the total cost of owning EVs. The importance of incentives in terms of strengthening EVs in the automobile market is quite high. However, there is a need for competitive prices for a strong market share. Different prices, especially those that arise in relation to the segment of cars, can lead to different approaches by consumers in total cost sensitivity. Therefore, it would be useful to develop tax policies considering that different incentive programs will affect different consumer groups depending on the preferences of car users (Lévay et al., 2017, p. 532). Although there are different consumer trends, it is obvious that incentives are generally more or less the same and are not aimed at any consumer group. Thus, the transition of different consumers to EVs can occur at different times. This may also differ depending on the fact that people have different needs or different social sensitivities. For this reason, considering incentive policies as the only factor for the spread of EVs is controversial (Langbroek et al., 2016, p. 95).

### 3. THE IMPORTANCE OF RENEWABLE ENERGY SOURCES

The importance of renewable energy comes from ensuring the security of energy supply and reducing carbon emissions. However, since it is a newly developing technology, the initial investment costs are high. Due to this feature, governments should support investments in this field. In order to achieve the goals of such investments, it is necessary to properly analyze a country's renewable energy sources and the support mechanisms that will be implemented (Simsek & Simsek, 2013, p. 529).

It is important to implement the necessary investments in a timely manner. As a matter of fact, governments face pressure from voters to get re-elected. Therefore, they tend to spend resources in areas where they can get immediate results. Yet, this situation is seen as an obstacle to investment in renewable energy sources (White et al., 2013, p. 103). However, the increase in carbon emissions in the world and the negative effects of climate change show that renewable energy efforts should gain momentum.

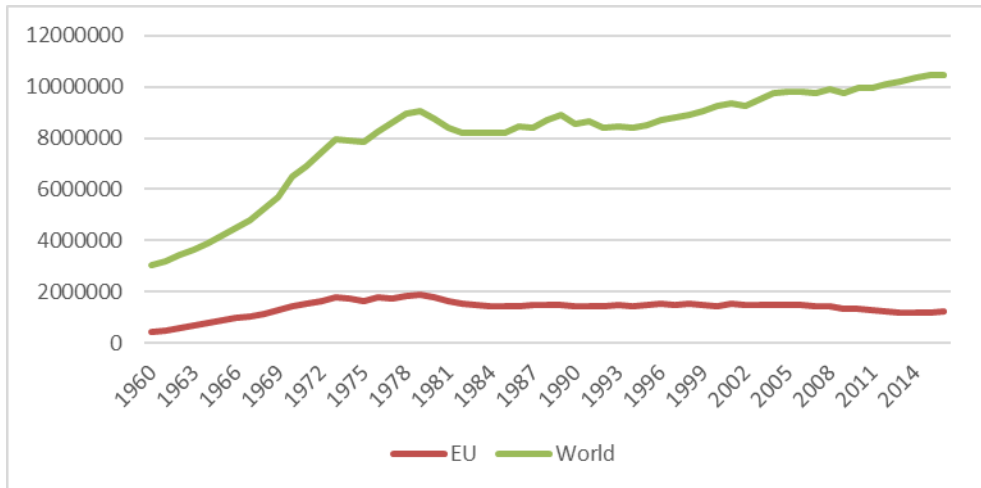
It is estimated that as a result of the rapid increase in the world population and consumption, the CO<sub>2</sub> level and the surface temperature of the earth will increase rapidly (Sims, 2004, p. 11). When the trend in Graph 1 is examined, it will be seen that CO<sub>2</sub> emissions tend to increase worldwide. Despite this negativity, it is also promising that the EU has managed to reduce CO<sub>2</sub> emissions, contrary to the trend in the world.



**Graph 1.** CO2 emissions (kt)

(Source: <https://worldbank.org> )

Graph 2 shows the development of the CO<sub>2</sub> level caused by fuel oil. Although it is obvious that there is also a worldwide increase in CO<sub>2</sub> emissions due to fuel oil, it can be uttered that that EU countries are performing well in this area than the world average.



**Graph 2.** CO2 emissions from liquid fuel consumption (kt)

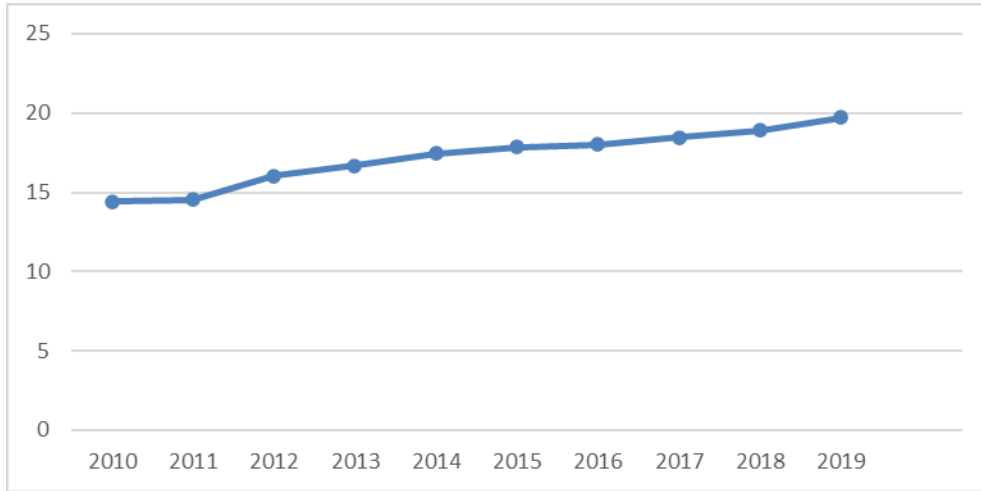
(Source: <https://worldbank.org> )

The constant increase in the amount of CO<sub>2</sub> in the world is attributed to economic growth. Therefore, in order for countries investing in renewable



energy not to be adversely affected by this situation, there is a need to develop renewable technologies and successfully integrate them into the system (Ansari et al., 2020, p. 6729). The fact that renewable energy makes a positive contribution to economic growth can also encourage other countries on this issue.

It is important that renewable energy becomes widespread around the world. Indeed, the consumption increases in renewable energy lead to a decrease in CO<sub>2</sub> emissions. It also provides cost and supply security by creating an alternative to oil price increases (Apergis & Payne, 2015, p. 286). For these reasons, the EU is constantly increasing its investments in renewable energy. Growing investments are also constantly increasing the share of energy provided from renewable sources within the total energy consumption. Graph 3 demonstrates this equation.

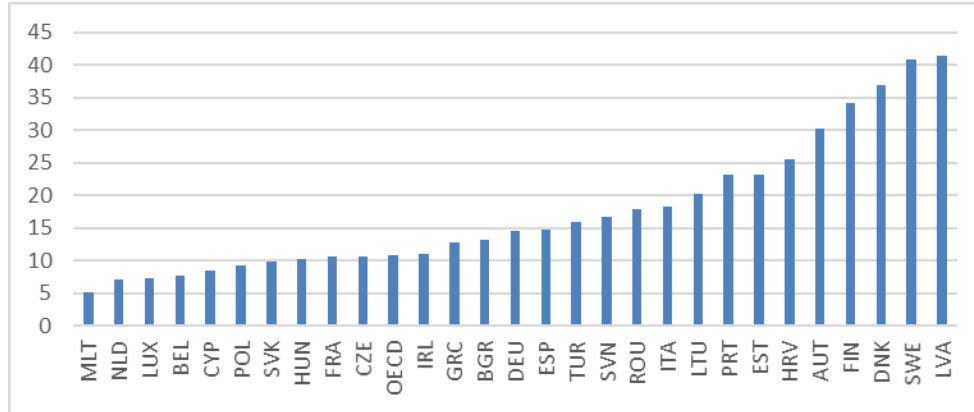


**Graph 3.** EU-27 Share of energy from renewable sources

(Source: <https://ec.europa.eu> )

Graph 4 shows the share of renewable energy in the total energy supply of EU countries and Turkey. According to the data, the supply rates from renewable energy show that there is no standardization among EU countries. Turkey is a better position than many EU countries in this regard.





**Graph 4.** Renewable energy total, % of primary energy supply, (EU and Turkey) 2019

(Source: <https://data.oecd.org>)

The EU's continuous increase in renewable energy investments is important for EVs. Although EVs are a policy for EU countries, they face a number of challenges. The first of these challenges is the high cost of purchase. Other challenges are that the current technologies are still not satisfactory for vehicle ranges, and the charging times are very long, which is a problem on intercity journeys. Given that electricity consumption will increase with the increase of EVs, it is argued that the existing network infrastructure will be insufficient. However, one of the most important problems is the question of how to ensure electric power production (Weldon et al., 2018, p. 581). Hence, the constant increase in the supply of electricity from renewable energy responds to one of the important reservations about EVs.

Those who do not consider EVs to be environmentally-friendly refer to battery pollution and pollution that may occur due to an increased need for electricity. Solving this problem can be possible by sufficient production from renewable energy sources such as solar energy and wind energy (Alonso, 2020, p. 2).

Besides offering many advantages as can be seen, EVs are also subject to various criticisms. From these criticisms, the price disadvantage is tried to be overcome with financial incentives. It is believed that battery and charging problems can be solved by private companies doing R&D studies. Another criticism is that EVs are not as "clean" as they are thought. What is emphasized here is how to provide the required electric energy. It is argued that EVs powered by electric energy provided from carbon-based sources will not be of any importance. Here this criticism does not include a problem that can be solved spontaneously. In order for electric vehicles to

serve their purpose, it is essential to increase renewable energy sources and reduce carbon-based electric power generation.

#### 4. TAX POLICY ON ELECTRIC VEHICLES IN EU COUNTRIES AND TURKEY

The EU carries out policies to implement environmental policies and reduce emission amounts. For this purpose, it applies incentives to increase the number of vehicles powered by electric motors through reducing the number of vehicles using carbon-based fuel. Such incentives are important due to the high cost of purchasing electric motor vehicles.

Governments attempt to implement environmental policies through tax incentives by giving up on public revenues in order to carry out consumption and investment activities that are less harmful to the environment. However, in order for these policies to be implemented, tax incentives must be provided at a low cost and with feasible options. Yet, it is not easy to predict what the consequences will be when tax incentives are granted. Therefore, there is a need for a good planning process before the incentives are put into action (Köppl & Schratzenstalle, 2021, p, 16).

The most common types of incentives worldwide are: income tax credit, subsidies such as car purchase discounts and annual vehicle tax deduction. Usually, government supports are discussed within this framework and these supports are applied at different rates. It is possible to say that subsidies are more understandable and easier, since vehicle tax deductions are often confusing and differ according to the tax system of countries and vehicle specifications (Yang et al., 2016, p. 9).

**Table 1.** Supports provided to vehicles with electric motors in EU countries

Taxes on Acquisition (Vat)	Tax Benefits and Incentives for Electric Vehicles			
	Acquisition		Ownership	Purchase
Austria	20%	Exemption of VAT on EVs	Exemption for zero emission cars.	€3.000 for BEVs
Belgium	21%	Minimum rate for zero emission cars	Minimum rate for zero emission cars	
Bulgaria	20%		Exemption for EVs	
Croatia	25%	Exemption of excise duty on EVs	Exemption for special environmental tax for EVs	€9,200 for EVs €4,600 for PHEVs

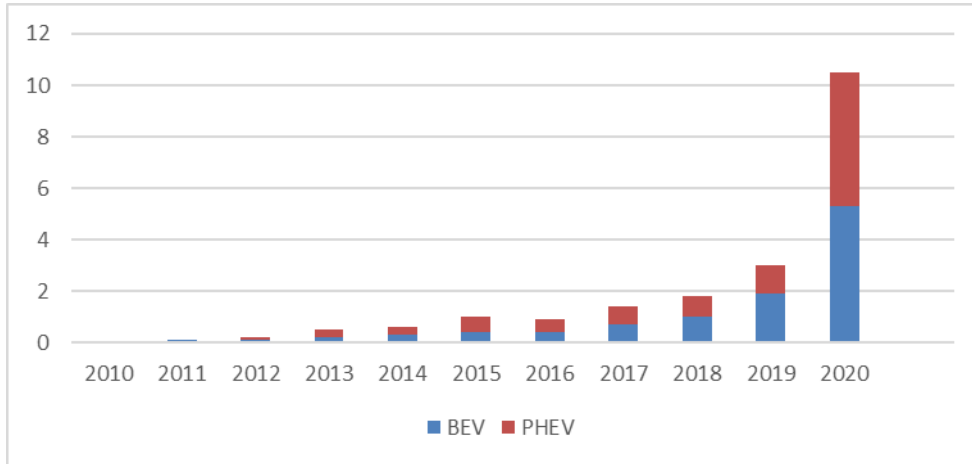
DIFFERENCES BETWEEN TURKEY AND EU COUNTRIES ON TAXATION POLICY FOR ELECTRIC VEHICLES

Cyprus	19%	Exemption for vehicles emitting $\leq 120$ g CO <sub>2</sub> /km	Min. rate for emitting $\leq 120$ g CO <sub>2</sub> /km	
Czech Republic	21%	Exemption for EV's	Exemption for alternative motors.	
Denmark	25%	Reduced registration tax	Taxes are based on fuel consumption	
Estonia	20%			€5.000 for EVs
Finland	24%	Minimum rate for zero emission cars	Minimum rate for no emission cars	€2.000 for EVs
France	20%	Exemption for alternative motors.		€5,000 for EVs
Germany	19%		10 year exemption for BEVs and FCEVs	€9,000 for BEVs €6,750 for PHEV
Greece	24%	Exemption for EV cars	Exemption for emitting $\leq 90$ g CO <sub>2</sub> /km	up to €5,500 for BEVs
Hungary	27%	Exemption for EVs PHEVs	Exemption for EVs PHEVs	€7,350 for €32,000. €1,500 €32,000€ and €44,000.
Ireland	23%	Reduction for EVs up to €5,000 (till end 2021)	Minimum rate for EVs.	Up to €5,000 for EVs (until the end of 2021)
Italy	22%		Five-year exemption for EVs	Up to €6,000 for emitting $\leq 70$ g CO <sub>2</sub> /km
Latvia	21%	Exemption for EVs	Exemption for cars emitting $\leq 50$ g CO <sub>2</sub> /km	
Lithuania	21%			
Luxembourg	17%		Minimum rate for cars emitting $\leq 90$ g CO <sub>2</sub> /km.	€5,000 for EVs
Malta	18%	Min. rate for emitting $\leq 100$ g CO <sub>2</sub> /km.	Min. rate for emitting $\leq 100$ g CO <sub>2</sub> /km.	
Netherlands	21%	Exemption for EVs	Exemption for EVs	
Poland	23%	Exemption for EV cars		PLN 37,500 for EVs $\leq$ PLN 125,000.
Portugal	23%	VAT deduction for EVs	Exemption for EV cars	€3,000 for a new EV

Romania	19%		Exemption for EV cars	€10,000 for a new EV
Slovakia	20%		Exemption for EV cars	€8,000 for BEVs. €5,000 for PHEVs
Slovenia	22%	Min. rate for vehicles emitting $\leq 110g$ CO <sub>2</sub> /km		7,500 for BEVs
Spain	21%	No special tax for emitting $\leq 120g$ CO <sub>2</sub> /km	Reduction of 75% for EVs in main cities	Up to €5,000 for BEVs  Up to €2,600 for PHEVs
Sweden	25%		Reduced annual road tax for no-emission cars	SEK 60,000 for new no-emission cars

(Source: ACEA, 2021)

The table 1 demonstrates that almost all EU countries provide various types of support for alternative motor vehicles. As a result of these supports, there are increases in the number of Electric and Plug-in electric cars. Graph 5 shows the percentage of vehicles with electric motors that have just registered for traffic in total vehicles.

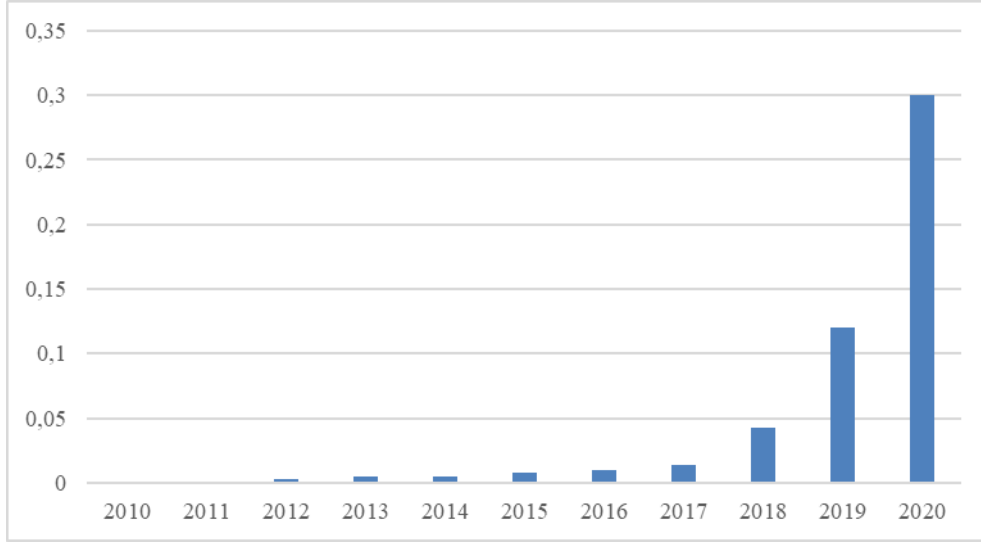


**Graph 5.** Newly registered EV cars relative to total newly registered cars in EU (in %)

(Source: <https://www.eafo.eu>)

The data in Graph 5 manifest that vehicles with an electric motor in the EU are regularly increasing. This shows that the support provided by the EU for vehicles with an electric motor is useful in achieving its goal.

It is impossible to say that the same success is achieved in Turkey for various reasons. Graph 6 shows the percentage of vehicles with electric motors that have just registered for traffic in Turkey in total vehicles.



**Graph 6.** Newly registered Electric - Hybrid cars relative to total newly registered cars in TR (in %)

(Source: <https://data.tuik.gov.tr>)

When Graph 6 is examined, it can be seen that the total number of Electric – Hybrid cars in Turkey is increasing. However, the ratio of Electric – Hybrid cars to total cars remains at the level of 0.3% despite this increase. In EU countries, this rate has exceeded 10%. Despite this rapid growth in the EU, there is almost no development in Turkey, and this is thought-provoking. There might be many variables as the cause of this situation. Turkish consumers may have problems adapting to a new technology or may approach the issue more emotionally. Or the main reason for this situation may be purely based on finances. To understand this, it is necessary to study the taxes on cars in Turkey, given in Table 2.

**Table 2.** Tax rates on automobiles in Turkey

Engine	Engine size and power	Tax free price	SCT (%)	VAT (%)	
Internal Combustion	< 1600 cm <sup>3</sup>	<92.000 TL	45	18	
		92.000-150.000	50	18	
		>150.000	80	18	
	1600 – 2000 cm <sup>3</sup>	<170.000	130	18	
		>170.000	150	18	
		>2000 cm <sup>3</sup>	-	220	18
Hybrid	>50 kW,	<114.000	45	18	
		114.000-170.000	50	18	
		>170.000	80	18	
		>100 kW	<170.000	130	18
		>170.000	150	18	
	Others	-	220	18	
Electric	<85 kW	-	10	18	
		85-120 kW	-	25	18
		>120 kW	-	60	18

(Source: <https://www.gib.gov.tr>)

When Table 2 is examined, it becomes clear why Electric – Hybrid cars in Turkey are at a very low level compared to the EU. There are very heavy tax burdens on cars in Turkey. Furthermore, Electric – Hybrid cars are not in a position to create much advantage in this case. On the contrary, there is even an obligation to pay more taxes on hybrid cars. If the power of the electric motor in hybrid cars is greater than 100 kW, and the tax-free price is 170,000 TL, Special Consumption Tax (SCT) and VAT are applied at the rates of 150% and 18% respectively. Owner of a vehicle with a tax-free price of 170,000 TL and an internal combustion engine volume of 1600 cm<sup>3</sup> must again pay VAT at the same rate, but the SCT they pay is 80%. In this case, there is no reason for consumers to opt for hybrid cars. For EVs, on the other hand, the situation seems to be brighter. EVs, which are still highly taxed compared to the EU, have more favorable tax rates than their alternatives in Turkey. In fact, taxes on EVs were at lower rates. However, on 01.02.2021, these taxes were increased. The old tax rates are shown in Table 3.

**Table 3.** Presidential Decision Dated 01.02.2021 and Numbered 3471, Old Excise Duty Rates

Engine power	<85 kW	-	3	18
	85-120 kW	-	7	18
	>120 kW	-	15	18

(Source: <https://www.resmigazete.gov.tr>)

It is interesting that while tax reductions and purchase supports are offered for Electric – Hybrids all over the world and in the EU, there is an increase in taxes for EVs in Turkey. There is already no purchase support for Electric – Hybrids in Turkey. VAT is applied at 18%. In addition, the SCT for EVs increased as well. This explains why the Electric – Hybrid market in Turkey is lagging behind the EU.

In order to better understand the effects of taxes imposed in Turkey, the following tables show the prices of EVs in different segments and prices in Turkey and four EU member states with different income levels.

**Table 4.** VW Golf Sale Price

VW Golf- Golf 1.5 eTSI 150 PS DSG STYLE	
Hybrid	
Country	Price (21.09.2021)
Turkey	427.700 TL- 42.220 Euro- 1E- 10,13 TL
Germany	33.835 E
France	35.065 E
Portugal	32.200 E
Bulgaria	26.536 E

(Source: <https://binekarac.vw.com.tr>, [www.volkswagen.de](http://www.volkswagen.de), [www.volkswagen.fr](http://www.volkswagen.fr), [www.volkswagen.pt](http://www.volkswagen.pt), [www.volkswagen.bg](http://www.volkswagen.bg))



**Table 5. Land Rover Discovery Sport Sale Price**

Land Rover Discovery Sport- Se- 1.5 phev300	
Plugin Hybrid	
Country	Price (21.09.2021)
Turkey	1.279.285 TL- 126.286 Euro - 1E- 10,13 TL
Germany	60.500 Euro
France	60.000 euro
Portugal	60.980 EURO
Bulgaria	61.980 EURO- 120,520 bgn

(Source: <https://binekarac.vw.com.tr>, [www.volkswagen.de](http://www.volkswagen.de),  
[www.volkswagen.fr](http://www.volkswagen.fr), [www.volkswagen.pt](http://www.volkswagen.pt), [www.volkswagen.bg](http://www.volkswagen.bg))

**Table 6. Renault Zoe Sale Price**

Renault Zoe - Zen 80 kW Z.E. 50	
Electric	
Country	Price (21.09.2021)
Turkey	368.900 TL_ 36,416 euro - 1E- 10,13 TL
Germany	31990 euro
France	32.500 euro
Portugal	32.240 euro
Bulgaria	61.390 leva- 31,402 euro

(Source: <https://binekarac.vw.com.tr>, [www.volkswagen.de](http://www.volkswagen.de),  
[www.volkswagen.fr](http://www.volkswagen.fr), [www.volkswagen.pt](http://www.volkswagen.pt), [www.volkswagen.bg](http://www.volkswagen.bg))

**Tablo 7. BMW İX3 Sale Price**

BMW İX3 Impressive	
Electric	
Country	Price (21.09.2021)
Turkey	1.088.700- 107.472 EURO
Germany	72400 EURO
France	76349 EURO
Portugal	79600
Bulgaria	147.597- LEVA- 75451 EURO

(Source: <https://binekarac.vw.com.tr>, [www.volkswagen.de](http://www.volkswagen.de),  
[www.volkswagen.fr](http://www.volkswagen.fr), [www.volkswagen.pt](http://www.volkswagen.pt), [www.volkswagen.bg](http://www.volkswagen.bg))

As can be seen from the above tables (Table 4-5-6-7) that Turkey has the most expensive purchase price for EVs in different segments. As the power of the electric motor increases, the price difference also increases. Here, as a source with a current account deficit, Turkey may aspire to reduce the import of cars in the upper segment. However, for vehicles such as Zoe and Golf, it is difficult to understand why Turkish consumers pay more in Euros. As a matter of fact, the internal combustion versions of the middle and lower segment cars are also imported. It is a different matter on what grounds Turkey implements such a tax policy. However, it is not surprising that the Electric – Hybrid car market is not developing in Turkey in this situation.

In order to make progress in this regard, it is necessary to accept that having a low market share in electric vehicles is a problem. Turkey, which is a foreign-dependent country especially in the field of energy, needs to reduce the number of carbon-fueled vehicles and increase its renewable energy investments. Electric cars, which are a new and developing technology, have a high production cost. Therefore, they need tax incentives to have a chance to compete. However, it is important for Turkey to initiate a structural transformation in tax revenues. It is clear that the high taxes on automobile sales will prevent the development of the electric vehicle market. Therefore, alternative tax revenues should be created. The income to be obtained by increasing the tax burden on internal combustion cars can be used to promote electric vehicles. In addition, the SCT, which is not taken from vehicle sales in EU countries, can be completely removed from electric vehicles in order to make the price more attractive.

## 5. CONCLUSION

Electric vehicles have been quite popular in the automobile market in recent years. Although they were mentioned for their economic aspect in the early years, as time passed, luxury brands and performance cars also entered the market, which led many consumer groups to follow up electric cars. The most important feature of EVs is shown as the zero liquid fuel consumption. Moreover, having zero emissions also provides a benefit on a global scale. However, considering that the EV technology is yet at the stage of development, it is subject to criticism for not offering adequate ranges and charging times. Nevertheless, HEVs and PHEVs have been introduced on the markets to reduce emission amounts and save fuel without a range problem. Hybrid vehicles solve range and charging problems, while also reducing the amount of emissions and saving fuel compared to internal combustion engines.

Another criticism of vehicles with electric motors is about how to meet the electric power needs of these vehicles. If electric power production is

provided from carbon-based sources, there is no point in investing in EVs. Indeed, it is clear that they will not have a positive effect on the environment. Given the high price of EVs, it should be considered normal that they lose their attractiveness. On the other hand, renewable energy sources may be able to solve this problem. That is why many countries around the world are investing in renewable energy sources in order to reduce their dependence on carbon-based fuels, secure energy supplies and be less affected by oil price increases. In this context, the EU is also continuing its efforts in this field. The increase in energy production from renewable sources is undoubtedly good news for vehicles with electric motors.

However, more is needed for the development of vehicles with electric motors. For this reason, states offer various supports and incentives to guide consumers. The EU has begun to see the results of its supports in this regard. In recent years, the proportion of cars with electric motors among the total number of cars registered for traffic has been growing rapidly. EU countries provide tax incentives to consumers, while many countries provide financial support during the purchase process. However, the same does not apply to Turkey. There is no purchase support available in Turkey as in some EU countries for vehicles with electric motors. The support provided for HEVs and PHEVs, on the other hand, is not intended to change the result. There is a tax deduction for EVs. However, this tax deduction does not base on VAT, but on SCT, which is taken as an extra for the purchase of vehicles in Turkey. In addition, there has been a recent increase in SCT rates received for EVs. Therefore, Turkish consumers pay higher taxes for EVs in different segments and models sold in Turkey than EU consumers. This reflects on EV prices and the number of EVs sold in Turkey is quite low compared to the EU. Comparing the rate of newly registered vehicles with all vehicles, this rate is approximately 35 times higher in the EU than in Turkey. Turkey needs to find a solution to this challenge. This is as important for reducing dependence on oil as it is for reducing CO<sub>2</sub> emissions.

For this reason, Turkey should abolish the SCT that it receives from electric vehicles. SCT is not a tax applied in EU countries anyway. Considering its current economic situation, Turkey may not be able to provide financial support to consumers in purchasing electric vehicles like EU countries. However, it can reduce the annual tax rates of electric vehicles. Tax expenditures made in this regard may cause a short-term tax loss. However, it may be more economical in the long run, as dependence on foreign energy will decrease with the increase in renewable energy sources in the long run. In addition, Turkey avoids the harm of carbon fuels to the environment and human health.

This study revealed the big difference in the sales of electric vehicles between Turkey and EU countries. Researchers reading this study can reveal the fiscal reasons for the low market share of electric vehicles by examining the share of Turkey's indirect taxes in the Budget.

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