EMOBICITY Report

State-of-the-Art Analysis on E-mobility at the project participating countries and regions

Author: Centre for Renewable Energy Sources and Saving (CRES) – lead partner

Contribution by:
Energy Institute Hrvoje Pozar (EHIP)
Regional Management Northern Hesse GmbH (RMNH)
Azorean Government – Regional Directorate for Energy (AZORES)
Portuguese Energy Agency (ADENE)
Northwest Regional Development Agency (NWRDA)

Version 1, Date: 13 January 2020

INTRODUCTION

This report presents the state-of-the-art analysis on electric mobility at the EMOBICITY project countries and regions. The information presented was obtained through the exchange of knowledge between the partners. After the first project meeting, partners wanted to find out more about the e-mobility situation at the other participating countries and regions, and particularly regarding:

- Policies and legislative framework for the promotion of electric mobility;
- Incentives: mainly economic and fiscal, including subsidies;
- Subsidies' conditions and required application documents;
- E-mobility market activities, including electric grid management, charging network operation, e-mobility pricing and grid stability;
- Regional investment priorities.

All respective data are presented in the current report as follows:

- Greece at national level
- Croatia at national level
- Germany at national level
    - the State of Hesse at regional level
- Portugal at national level
    - the Autonomous Region of Azores at regional level
- Romania at national level
    - the North-West Region at regional level

This report will further contribute to the exchange of knowhow and practices on e-mobility between countries and regions. It may be shared with the partners' local stakeholder groups or other entities responsible, to inspire and promote discussions, aiming to solve any pending e-mobility issues and serve the integration of electric mobility in national and regional markets, thus promoting low-carbon mobility services.

The State-of-the-Art Analysis of EMOBICITY was created by CRES with the contribution of all project partners. The State-of-the-Art Analysis may be re-issued during the project by the consortium to imprint any progress achieved.

GREECE

GREECE

500 EVs (BEV & PHEV)

20 public recharging stations

Unknown number of private charging points

In Greece the take-up of e-mobility is very low to date. E-vehicles (EVs) are estimated to be no more than 600 and the number of charging stations is not clear. It is estimated that only 15 charging stations in the country are public, while some others are accessible only by specific customers (i.e. at hotels) or even worse, are currently not operating. Therefore, the existing and continuous situation of conventional fuels and vehicles at a national level leads to increasing GHG emissions and to air quality depreciation, against the national and EU climate policy targets. Other territorial parameters should also be taken into account, such as the high urbanization level of most Greek cities along with traffic problems and the high transport peaks at Greek islands during touristic periods. It is noted that foreign tourists cannot use their e-cars due to lack of charging infrastructure and respective framework with costs and pricing.

Policies

In Greece, the entities responsible for making politics regarding electric mobility are the Ministry of Environment & Energy, the Ministry of Transport and the Ministry of Economics.

As e-mobility constitutes an environmental and energy priority of the national agenda, the Greek government has put effort to promote EVs and charging infrastructure through the legislative framework from year 2013 to date, in order to increase the take-up of e-mobility at a national level.

Electric mobility is addressed in the National Energy Efficiency Action Plan (NEEAP), which sets out estimated energy consumption, planned energy efficiency measures and the improvements that EU countries expect to achieve. The NEEAP in the framework of Directive 2012/27/EU for Greece spans the Directive 2006/32/EC on energy end-use efficiency and energy services, and the Directive 2012/27/EU on energy efficiency. Specifically, the NEEAP includes the Measure 12: Introduction of electric vehicles and electric vehicle recharging points. The objective of this measure is the promotion of the purchase and use of electric vehicles (cars, motorcycles, bicycles and heavy vehicles) and the construction of recharging points. The measure involves the provision of favorable tax incentives and subsidies for the purchase of electric vehicles (EVs) of any type for both private and public agencies operating vehicle fleets. In addition, the measure includes a subsidy for the construction of public and private vehicle charging points, powered mainly by RES. At present, the number of EVs and charging stations remains very limited in Greece, compared to other EU countries. So, this specific measure in the NEEAP needs to be amended and specialized with legislative/normative provisions and guidelines concerning issues like electricity tariffs/pricing schemes and subsidies for the rational commercialization of e-mobility.

To date, the legislative framework for the promotion of electric mobility has been formulated as follows:

- Law 4233/2014 (Article 15) - Provision for the installation of recharging stations in gas stations, garages and public parking stations
- Law 4277/2014 (Article 53) - Provision for selling electricity from non-electric power utility companies
- Law 4439/2016 - Transposition of the Directive 2014/94/EU on the deployment of alternative fuels infrastructure (Alternative Fuels Infrastructure Directive – AFID) into the national legislation framework
- Joint Ministerial Decision (JMD) 77726/1/2017 - Specification of implementation details and technical specifications for the National Policy Framework on the market development for alternative fuel infrastructure.
- Law 4513/2018 - Provision for the installation of recharging stations in public spaces
- Joint Ministerial Decision (JMD) 42863/438/2019 - Provisions and preconditions of technical specifications for charging infrastructure in the national road network and buildings

Right now, the National Policy Framework on Electro-mobility is under elaboration, as well as a new law introducing economic and tax incentives for the purchase of EVs.

Incentives

For the moment, no subsidies are available in the country to promote e-mobility. The economic incentives provided by the State for the purchase of EVs are the exemption of EVs from the registration tax, as well as zero annual vehicle tax and zero luxury tax. In addition, EVs are allowed to access the Athens city center restricted circulation zone. Currently, the Government examines the cases of grants and other economic incentives, for both the acquisition of EVs and charging stations, to be implemented through a long-term e-mobility promotion plan. Issues like the national entities responsible for the management of grants, the criteria for beneficiaries to receive subsidies, procedure for potential beneficiaries to apply for grants, compulsory documents to be submitted, etc. are to be defined, taking into consideration the respective experience of other countries, as well as the exchange and transfer of knowledge and practices through the EMOBICITY project.

E-mobility Market

In addition, Greece needs to examine and determine e-mobility market issues in the country, such as authorities responsible for the market management and regulation, interoperability management, process of charging EVs, electric grid stability and power quality, pricing models and tariffs for charging.

CROATIA

CROATIA
600 BEVs
(0,03% of total car fleet)

350 recharging stations
(60 of them > 50kW DC)

E-mobility in Croatia, despite the favorable characteristics of the country like intensive seasonal road transport and important transit link connecting central Europe to Southeast Europe, is in the early stage of development. Number of EVs and charging stations per capita are at the very outset in the context of the European Union. Due to the absence of national e-mobility strategy, the relevant policy is being implemented according to the goals and measures determined by the National Policy Framework for establishment of infrastructure and development of alternative fuels market in transport (NPF).

Policies

In Croatia, the entities responsible for making politics regarding electric mobility are the Ministry of the Sea, Transport & Infrastructure, the Ministry of Environment & Energy and the Environmental Protection & Energy Efficiency Fund.

The Law on the Establishment of Alternative Fuel Infrastructure establishes a common framework of measures for the deployment of alternative fuel infrastructure, to minimize oil dependence and to mitigate the negative environmental impact of transport. The law establishes minimum requirements for the construction of charging infrastructure and establishes common technical specifications.

Moreover, the National Policy Framework (NFP) brings special measures to encourage the acceptance of electric vehicles, by which the particular emphasis is given on development of e-mobility. However, despite the NFP mentions that electric vehicles will contribute to the de-carbonization of transport only to the extent if they use electric energy from clean sources (non-fossil), it does not focus on the development of substantial synergies between e-mobility and renewable energy sources. Since electric vehicles represent a great potential as distributed energy storage for intermittent energy sources, as well as energy system flexibility provider, a great potential is identified here for improvement of this policy instrument, through its structural change by developing of additional strategic focus.

The revision of the NFP is foreseen in the near future for the establishment of infrastructure and the development of the alternative fuel market in transport. As part of the preparation of the Integrated Energy and Climate Plan for the period 2021 to 2030, measures are proposed to encourage e-mobility.

Incentives

The Croatian Environmental Protection & Energy Efficiency Fund provides subsidies and determines the funds and calls for tenders. Particularly for e-mobility, the Fund provides the following subsidies for the purchase of EVs:

- HRK 80,000 (approx. EUR 10,800) for M1 electric vehicles, exclusively lower and middle categories (A, B and C segment of vehicles according to European classification);
- HRK 40,000 (approx. EUR 5,400) for M1 plug-in hybrid EVs with CO2 emissions of less than 50 g CO2 / km;
- HRK 20,000 (approx. EUR 2,700) for L1 to L7 electric vehicles.

Additionally, when purchasing a car, registration taxes and vehicle taxes are linked to CO2 emissions; this means 0 EUR for EVs.

Furthermore, in year 2018 the Croatian Fund provided subsidies for electric bicycles in the amount of HRK 5,000 (around EUR 675), while in 2014 and 2015 and again in 2019 it provided subsidies of up to 40% for legal entities and individuals, for setting up electric charging stations vehicles. Many cities and municipalities have used this opportunity to set up EV charging stations in public places.

Required documents for subsidies

The person or entity interested, selects an EV and request a quote. If not stated in the quote, the potential beneficiary obtains a catalogue and/or a certificate stating the technical characteristics of the vehicle, clearly showing the category, manufacturer, model, type of drive, power and CO2 emissions. Then, the beneficiary fills in and signs the application form of the Croatian Fund. The selected persons/entities have a 12-month deadline to purchase the EV and submit the respective documentation to the Fund.

Apart from the above, other compulsory documents for beneficiaries to submit in order to receive the subsidies are:

- Copy of both sides of the ID card
- A copy of a vehicle purchase offer issued by an authorized dealer
- Other documentation upon request of the Fund

E-mobility Market

The Croatian Distribution System Operator (DSO) provides regulated electricity distribution service, which serves the e-mobility market activity. In Croatia, the charging station owner is the final customer of the electricity. Charging station operators can be both private and public entities. The two largest investors are: the Croatian Telekom (private entity) and the HEP D.D. (public entity). Telecom offers roaming within its network of chargers throughout Europe. HEP will soon connect charging stations to roaming services; fully functional roaming is expected in a few years. For now, interoperability in the country is not fully functional. In order to charge their EVs, drivers must use a specific ID card by the service provider or an application, such as plug surfing. For the cost of charging EVs standard tariffs are applied. Taking into account the existing load, there are no grid stability or power quality issues at the electricity network.

GERMANY

The transport infrastructure, the behavioral shift of consumers and the motivation of car manufacturers are decisive for the market development of electric mobility in Germany. The number of new EV registrations has almost tripled since 2015, as legislators extend and expand the funding programs for the purchase of EVs and the installation of charging facilities.

GERMANY

83.200 EVs

53.000 EVs registered in 2019 (tripled since year 2015)

17.400 publicly accessible charging points

"The biggest lever for climate protection goals is electro mobility"

Policies

In Germany, the legislative framework for the promotion of electric mobility, enacted by the parliament, is as follows:

- Energy Industry Act (EnWG);
- The Electro mobility Act (EmoG 2015) is a German federal law intended to promote electric mobility. It is part of the German energy policy. The use of electrically powered vehicles (battery electric vehicle, plug-in hybrid or fuel cell vehicle (§ 2 EmoG) should be promoted by this law;
- Smart Meters Operation Act (MsbG 2016);
- The charging station regulation (LSV 2016) is a regulation by the Federal Ministry for Economic Affairs and Energy (BMWi) with the aim of accelerating the expansion of charging stations in Germany and providing legal certainty. The regulation transposed the European requirements of the Directive 2014/94/EU with regard to requirements for charging systems at charging points for electric vehicles into German law;
- Funding Guideline Charging Infrastructure (2016): Market incentive program for electro-mobility. Since the beginning of 2017, the funding guideline has promoted the development of publicly accessible charging infrastructure through a proportionate financing of the investment costs;
- Renewable Energy Act (EEG 2017).

The Federal Government intends to present a "master plan for charging station infrastructure", as over the next two years, the number of public charging stations is set to rise to 50,000. In order to meet the climate protection goals concerning emissions reduction from the transport sector, Germany predicts that there should be 1 million charging points available by 2030, along with 10 million EVs and 300.000 electric industry vehicles.

Incentives

Since July 2016, the Federal Government and automobile manufacturers provide a grant for the purchase of EVs. Initially, this grant was limited until the end of 2020. However, in November 2019 the Federal Government together with industry partners decided to extend the grant until the end of 2025. This extension intends to provide companies and consumers

with a long-term planning security. Additionally, consumers will receive a higher grant than before. The subsidy amounts are presented below:

- Grant will rise from EUR 4.000 to EUR 6.000 for purely electric cars below a list price of 40.000 euros;
- Grant will rise from EUR 3.000 to EUR 4.500 for plug-in hybrids below a list price of 40.000 euros;
- EUR 5.000 for purely electric cars over a list price of 40.000 euros;
- EUR 4.000 for plug-in hybrids over a list price of 40.000 euros.

So far, electric cars are only promoted up to a net list price of 60.000 euros. This cap should be omitted in the future.

Other economic incentives provided for the purchase of electric vehicles are:

- Employees charging their EVs at charging stations of their employers for free do not have to pay any taxes for this monetary benefit;
- Anyone who buys a purely electric car will be exempted from the motor vehicle tax for ten years. This applies to electric vehicles that were or will be first registered in the period from 18 May 2011 to 31 December 2020. So far, there were only five years of car tax exemption.
- The EV tax benefits can be claimed if a consumer converts his car to an EV, approved by TÜV.

Conditions for subsidies

The aim of the subsidies is to spread electric vehicles quickly. Therefore, almost everyone can apply for an electric car: private individuals, companies, foundations, corporate bodies, societies. Excluded, however, are only: the Bund, the federal states and their institutions and communities and also the car manufacturers involved in financing the grant. In addition, the grant refers to both the purchase and the leasing of an EV. In both cases, the vehicle must be registered for the first time.

In addition, the net list price of the electric car must be less than 60,000 euros (this cap will be omitted in the future). The net list price is the purchase price or leasing price of the base model of the car. This means: without special equipment such as seat heating or special seat covers. The net list price may already include discounts provided by the merchants.

Pure battery electric vehicles, fuel cell cars and externally rechargeable plug-in hybrids are eligible. The electric vehicle has to be deemed to belong to the categories M1, N1 or N2 and it has to be approved for Class B national driving license.

Required documents for subsidies

The compulsory documents that beneficiaries need to submit to receive the grant are:

- The purchase / lease contract;
- In the case of a lease contract, calculation of leasing payments without the grant;
- The bill of the car;

- Vehicle registration document and vehicle identification document (registration certificate Part I and II).

E-mobility Market

The Federal Government is responsible for the management of the electricity mobility market, as well as for the criteria set, in order to purchase EVs and install charging stations. In Germany, both public and private charging infrastructure exists. The charging station operators are mainly energy supply companies and automobile manufacturers.

However, the German e-mobility market has interoperability issues to solve. E-drivers may need a charging card at a specific charging point, while they have to use an application to activate the flow of electricity at another charging point. Sometimes they pay for charging their EVs directly via smartphone and some other times they receive the bill at the end of the month by mail.

In addition, the e-mobility pricing presents lots of dissimilarities. The electricity providers have different tariff models, while charging station operators follow different billing methods. For example, one operator collects a monthly fee and a rate per charge and another one calculates the price of electricity per hour or five minutes. So, the charging cost varies significantly depending on the providers and it is often unclear to the e-drivers. Consequently, consumers lose track.

Basically, there are two types of potential electro-mobility service providers: regional providers like a regional energy supply company and providers giving nationwide access to charging stations. Access to third-party charging infrastructure via roaming networks and bilateral agreements is often more expensive than charging at the regional charging stations. However, roaming networks do in fact not operate charging stations, but usually only charge for the electricity consumed. In practice this means that if an e-driver regularly travels long distances and leaves the business area of the regional provider, the service of an e-roaming e-mobility provider makes sense. But it is essential that e-drivers need to be informed about tariffs, possible additional fees and extra charging cards needed. In general, every public charging station has to be accessible for every e-driver.

Concerning the electric grid stability and power quality, the grid has to be adapted in a specific way due to the expected future load of EV charging, especially at the distribution grid level. Traditional grid is going to be transformed to a “smart grid”, which adaptation will take place anyway due to the energy transition towards the integration of RES. Regarding the EVs and their charging infrastructure, the technical feasibility of concepts for controlled charging has been demonstrated in field trials. The regulatory need for action has been identified. In the long term, electric vehicles with regenerative capability can even become a stabilizing element in a smart grid. The foreseeable costs for the grid expansion and grid adaptation are largely because of the general energy transition in the electricity sector. The improved utilization of a future smart grid may offer the potential to lower network charges in the long term.

GERMANY - STATE OF HESSE

STATE OF HESSE
6.300 EVs
730 charging points

The state of Hesse is geographically in the middle of Germany and in the middle of Europe, thus facing high traffic loads and especially transit traffic. Hessen's roads are high-performance traffic routes. With an average daily traffic of 2 million vehicles / 24 h on highways, Hesse has the highest traffic congestion of all German federal states. While in passenger traffic the motorized traffic throughout Germany increased between 2010 and 2030 by 3.8 percent to 103 billion, freight traffic is supposed to rise by 18% and the transport capacity by 38% percent. The pollutant emissions are enormous and half of Hesse's energy consumption flows into the transport sector. Thus it is all the more important for the inhabitants, that the traffic will be as environmentally friendly as possible and quieter. The aim is to have the state of Hesse climate neutral by 2050, and the emissions shall be reduced by at least 90% compared to 1990. To reach this aim, the road logistics traffic as a major pollutant needs to be decarbonized. While the long distance traffic cannot be covered by battery electric vehicles due to the limited range for the moment, the requirements of the inner city logistics offer perfect conditions for the use of BEVs and new logistics concepts. Thus projects need to be implemented where vehicles can be tested by logistic companies, further developed together with original equipment manufacturers (OEMs) and being embedded in new concepts developed with all relevant stakeholders like cities and public transport companies.

The measures of Investment priority 4e: "Encouragement of strategies for the reduction of CO2-emissions in all areas, including the funding of sustainable multimodal inner city mobility and adaptation measures relevant for climate protection" under Axis 4: "Funding Program of the state of Hesse to support sustainable city development" should be an important contribution to the action of Hessian ERDF strategy for sustainability and reduction of CO2 emissions. To raise the attractiveness of EVs, the Hesse state government is promoting measures in a technology-open approach which aims at proofing everyday-usability. Core topics are to increase the number of BEVs in fleets and the necessary charging infrastructure. Putting that into a systemic approach, the focus of the program is on the measures interoperability with other transport infrastructure, integration into sustainable multimodal mobility concepts on site, testing of business models and incentive mechanisms, as well as overall user-friendly simple and non-discriminatory solutions. As Hesse is one of the most important sites for contract logistics in Europe and several cities face congestion and air purity problems, the policy needs to be further developed regarding the topics inner city logistics and EVs of the classes N1, N2 and N3.

Through this new additional focus, new projects shall be initiated and funded, which aim at practical testing and gathering experience with the respective vehicle classes, research and development regarding vehicle technology, the development of EV based logistics concepts, the integration of RES into respective logistics concepts and the further development as well as the installation of charging infrastructure. Another topic which is not covered yet but will be important for new inner city logistics is the car-to-x communication and autonomous driving, which might be integrated into the further developed policy instrument.

PORTUGAL

In Portugal the electric vehicles sales are boosting. In the first two months of 2019 the sales almost tripled from the same period last year. Portugal is already the fourth European country in terms of percentage of electric vehicles sold, compared to total sales, just behind Austria, Sweden and the Netherlands.

PORTUGAL

20.000 EVs from 2016,
Previous sales not easily countable

1.596 charging stations

Policies

In Portugal, the Ministry of Environment and Climate Action is responsible for the electric mobility policies. The respective legislative framework is presented below:

- Resolution of the Council of Ministers nº 20/2009 – Portuguese Electric Mobility Program; creation of MOBI.E;
- Resolution of the Council of Ministers nº 81/2009 – Portuguese Electric Mobility Program; objectives and new measures of the Electric Mobility Program and approves the electric mobility model;
- Decree-Law nº 90/2014 – legal regime for electric mobility; rules for the creation of a pilot electric mobility network;
- Order nº 8809/2015 – Electric Mobility Action Plan; locations for the fast and slow charging points (MOBI.E pilot network);
- Regulation nº 879/2015 – technical conditions and procedures for the market opening for energy commercialization for electric mobility (completed in 2018);
- Resolution of the Council of Ministers nº 49/2016 – Give MOBI.E the necessary skills to ensure operational and relocation decisions on all charging stations subject to pilot network status;
- Ministerial Order nº 3636/2019 – Financial support from the National Innovation Fund (FAI) to the E-Mobility Network Management Entity (MOBI.E) aiming to partially cover the costs associated with the use of electricity networks by electric mobility.

Incentives

There are several incentives in force for the purchase of private and business vehicles, as well as taxes exemptions for companies, and investment in the charging network. Currently, the Order nº 2210/2019 – Regulation for the Incentive for the introduction of low-emission vehicles (for 2019) from the Portuguese Environmental Fund is in force. The economic incentives for the acquisition of new pure EVs, of 3 million euros total budget available, are:

- EUR 3.000 Light duty passenger vehicles for individuals and EUR 2.250 for companies: total amount available = 2.650.000 euros
- Up to EUR 400 (20%) Two wheels (motorized): total amount available = 100.000 euros;
- EUR 250 Two wheels (bikes): total amount available = 250.000 euros

Conditions for subsidies

Beneficiaries of the aforementioned incentive may be natural or legal persons. Individuals can receive only one incentive unit of € 3.000 and legal persons up to four incentive units (a total of € 9.000 for 4 EVs). Two-wheel motorcycles and mopeds may benefit from the 20% incentive limited to one incentive per applicant. For electric bicycles, the incentive is also limited to one per candidate. Excluded from the benefits are companies whose activity is trade of cars or motorcycles.

Subsidized EVs must be purely electric, purchased for the first time on behalf of the beneficiary, registered from 1 January 2019. Vehicles with a total purchase cost of more than EUR 62.500 are not eligible. Beneficiaries of the incentive must keep the vehicles for at least 24 months and are not allowed to export them.

Required documents for subsidies

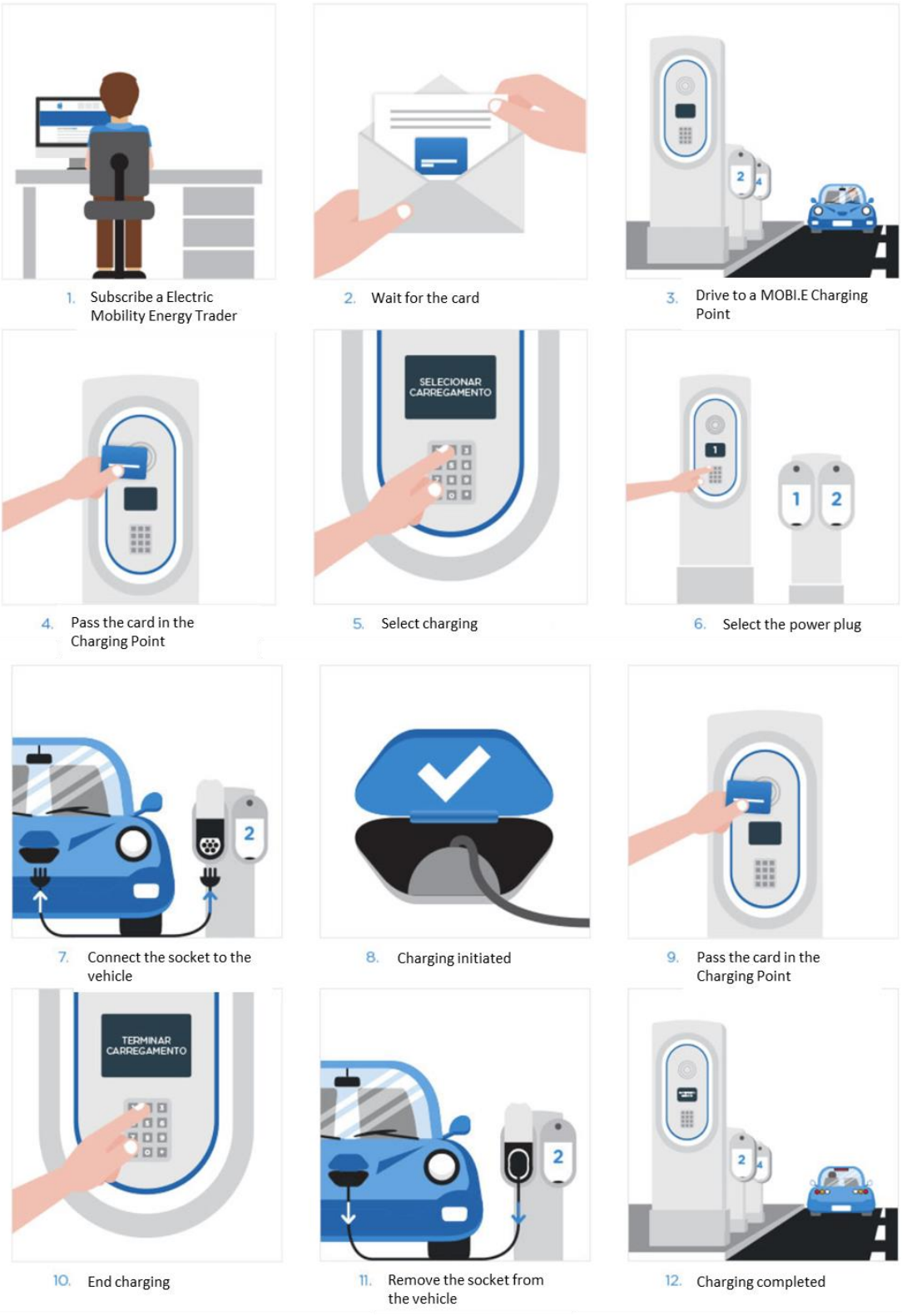
The incentive application can only be submitted online through the application desk available on the Environmental Fund website. The beneficiary is notified by email of the submission's confirmation of the incentive attribution request, with date and time stamp. To apply in the online form, the potential beneficiary must submit:

- copy of identification documents (citizen card or ID card and fiscal number);
- non-debt certificate from the Tax and Social Security Authority;
- purchase invoice dated after 1 January 2019, in the name of the beneficiary, with the chassis number (if applicable); in case of leasing contract copy;
- registration proof with the beneficiary name, through the Automotive Single Document or other document;
- In case of a finance lease, agreement copy. The lease should be of at least 24 months, dated after 1 January 2019, on behalf of the beneficiary and with the vehicle identification through chassis number and / or registration number;
- In the case of vehicles purchased under leasing arrangements, proof must be provided that the applicant is already in possession of the vehicle by submitting a delivery order or equivalent document;
- In the case of electric bicycles, a statement from the seller should be presented on the invoice or in an attached document, stating that the vehicle is new and intended for city / urban use.

If entitlement to the incentive is recognized, payment will be made by bank transfer to the payee account.

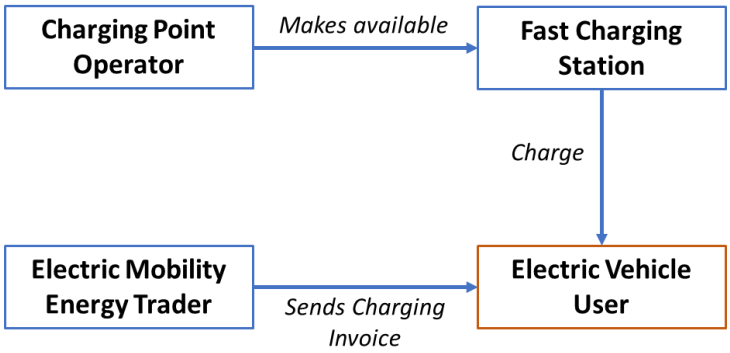
E-mobility Market

The charging network in Portugal operates in an interoperable manner; users are able to access any charging point in the country, regardless of who is the charging point operator, through a single access mean - the card. This network is managed by the Independent Entity called MOBI.E, which manages the energy and financial flows resulting from operations in this network. The way of EV charging is shown in the following picture:



Source: https://www.mobie.pt/how-electric-mobility

It is also important to understand the difference between the Charging Point Operator (OPC) and the Electric Mobility Energy Trader (CEME):



Source: https://www.prio.pt/pt/mobilidade-eletrica/informacao-faturacao-uve_427.html

The list of the Portuguese Charging Point Operators, and the information whether they are also Electric Mobility Energy Traders (Sim = Yes; Não = No) follows:

Operador	CEME	OPC	Email
Bluecharge, Lda.	Sim	Sim	N/A
Bluwalk, Lda.	Não	Sim	N/A
Cargga Inteligente, Lda.	Não	Sim	N/A
Circuitos de Inovação - Soluç...	Não	Sim	N/A
Digital Charging Solutions (D...	Sim	Sim	pt@chargenow.com
CME - Construção e Manuten...	Não	Sim	cme@cme.pt
Eco Choice S.A.	Sim	Sim	geral@ecochoice.pt
EDP Comercial	Sim	Sim	mobilidade-eletrica@edp.pt
EDP MOP	Não	Sim	mop_inst@edp.pt
Elergone energia	Sim	Sim	elergone@elergone.pt
EMACOM, Lda.	Não	Sim	emacom-me@eem.pt
EMEL - Empresa Municipal d...	Não	Sim	N/A
ENAT Energias, Lda.	Sim	Sim	geral@enat.pt
EV POWER	Não	Sim	charge@evpower.pt
EVCE Power, Lda.	Não	Sim	info@evce.pt
Factor Energia	Não	Sim	info@factorenergia.pt
Galpgeste	Não	Sim	mobilidadeletrica@galp.com
Galp Power	Sim	Sim	ribeiro.silva@galp.com
GRCApp Unipessoal, Lda	Sim	Sim	evaz.energy@grcapp.com
Horizondistance Unipessoal L...	Não	Sim	JMS@tryangle.pt
Kilometer Low Cost	Não	Sim	info@kmlowcost.com
Less kw Lda.	Não	Sim	N/A
Mobiletric	Não	Sim	geral@mobiletric.com
Mota-Engil Renewing	Não	Sim	N/A
Petroassist - Engenharia e Se...	Não	Sim	N/A
Prio Energias Top Low Cost	Sim	Sim	info@prioenergy.com
Propel - Produtos do Petróle...	Não	Sim	antonio.mogadouro@cepsa.com
Repsol Portuguesa, S.A	Sim	Sim	N/A

Source: https://www.mobie.pt/operators/operators-list#focus-target

In order to promote electric mobility, the Portuguese Government approved a financial support translated into a discount applicable to the electric mobility network access tariffs, paying the user, with the discount, the following amounts, for year 2018:

- Peak hours = 0,1027 € / kWh
- Off peak hours = 0,0483 € / kWh

The time periods will be presented by the Electric Mobility Energy Trader. The Electric Mobility Energy Trader is free to define its commercial proposals to users. However, considering the legislation, the cost to charge comprises three components:

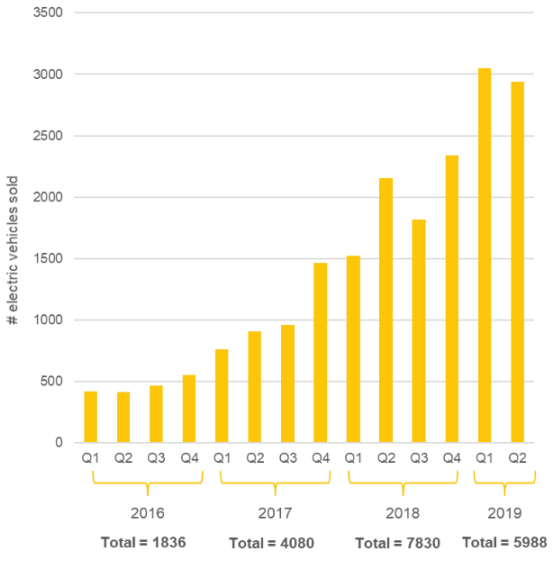
- Electric Mobility Energy Trader service, which includes the cost of energy (energy and network access charges), see values above;
- Charging station operation service defined for each station by the Charging Point Operator;
- Management Entity Rate, which will be 0 € at this stage.

The price structure practiced by Operators will be set based on the following components:

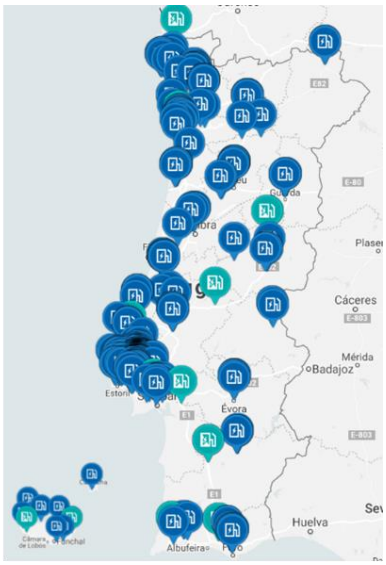
- Fixed charge per charge (activation fee);
- Cost per unit of time (min.);
- Cost per unit of energy (kWh).

The Operators may combine one, two or three of these components in the final price determination. It should be noted that the cost per unit of energy component corresponds to a service (of use of the station) and not to the supply of electricity, which responsibility is of the Electric Mobility Energy Trader.

So far there are no grid stability issues reported nor power quality ones.



Source: ACEA, 10/09/2019



Source: MOBI.E

The pictures above present the official data collected regarding the sales of EVs and the installation of charging stations in the country.

PORTUGAL – AUTONOMOUS REGION OF THE AZORES

The Azores, officially the Autonomous Region of the Azores, is one of the two autonomous regions of Portugal, along with Madeira. It is an archipelago composed of nine volcanic islands in the North Atlantic Ocean. The main city of the Azores is Ponta Delgada and its main industries are agriculture, dairy farming, livestock, fishing, and tourism, becoming the major service activity in the region.

AZORES

300 EVs in a universe of 130.000 vehicles

19 public charging points, 28 predicted by the end of 2020, 16 of them fast ones

In the Autonomous Region of the Azores, e-mobility is not specifically addressed through a respective policy instrument, although it presents a strong untapped potential in a region where road transportation accounts for 32% of the final energy consumption, travel distances are short and there is a large share of renewable electricity production.

Currently, two major problems render the technology acceptance low: the high capital cost of vehicles and the lack of charging infrastructure. On the other hand, pricing during charging should largely follow the MOBI.E Portuguese framework, although the regional energy specifics should be taken into consideration. In order to tackle the existing high capital costs and the lack of EV charging infrastructure, Azores aim to introduce supporting funding mechanisms into the Azores Operational Program 2020 (priority axis 4 – low-carbon economy, namely axis 4.5 – Promotion of low-carbon strategies for all territories, namely urban areas, including the promotion of sustainable urban multimodal mobility), for the acquisition of EVs and installation of a charging station network in every island. The Azores 2020 Operational Program should be also improved to better integrate the different policy and regional planning instruments, namely the Azorean Energy Strategy for 2030 as well as the Regional Action Plans for Climate Change, Electric Mobility, Energy Efficiency, among others. All these policy instruments point out the need for increased electric mobility, thus aiming to low carbon transport and economy.

Particularly, the Plan for Electro mobility in the Azores (PMEA) was published on October 4th 2019. Within the PMEA framework, grant proposals for the acquisition of EVs and charging points are under public consultation. Installation of 26 public charging stations, including 16 fast ones, is underway following an international tender. In addition, the Azorean Government announced a half a million budget allocation for year 2020; it will be probably available under the form of non-refundable grants for EV acquisition and charging stations.

Currently, the legislation framework to set the grants for the acquisition of EVs and charging stations in Azores is under public consultation. The criteria of funding are proposed by the Azorean Directorate for Energy, for later approval and publication by the President of the Azorean Government. Any compulsory documents to apply for grants are to be defined.

In the Azores, all public charging points must work within the MOBI.E network, allowing any user to charge its vehicle anywhere in the network. Public charging points must be operated by a licensed Charging Point Operator. At the moment there are no recorded issues regarding the grid stability. Predictions, however, show peak load increase already by 2024.

ROMANIA

ROMANIA
2. 608 EVs

In Romania the number of motor vehicles has increased substantially in recent years, many of them with high emissions, leading to a high level of pollution in the larger urban areas. Consequently, a new approach to sustainable urban development is needed; promoting low-emissions, especially low emission vehicles like electric cars.

Policies

In Romania, the entities responsible for policies regarding electric mobility are: the Ministry of the Environment, administering the Environmental Fund and the Ministry of Regional Development and Public Administration, responsible for the implementation of the Regional Operational Programme 2014-2020. The legislative framework operating in Romania towards the promotion of electric mobility is:

- ORDER No. 1559/2016 of July 29, 2016 for the approval of the Financing Guide for the Program on reducing greenhouse gas emissions in transport, by promoting the infrastructure for energy-efficient road transport vehicles: charging stations for electric and plug-in hybrid electric vehicles;
- Law no. 34/2017 regarding the installation of the infrastructure for alternative fuels;
- DE MINIMIS AID for programs aiming to reduce greenhouse gas emissions in transport, by promoting energy-efficient road transport vehicles - Provision of the President of the Administration of the Environmental Fund, no. NO. 242 of 22.05.2017 regarding the approval of the modification of the de minimis aid scheme for the Programme on reducing greenhouse gas emissions in transport, by promoting non-polluting and energy efficient road transport vehicles;
- ORDER no. 278/2018 of March 21, 2018 for the modification of the Financing Guide of the Programme on reducing greenhouse gas emissions in transport, by promoting non-polluting and energy efficient road transport vehicles, 2017-2019, approved by the Deputy Prime Minister's Order and the Minister of the Environment (order no. 660/2017);
- Order no. 964/2018 of September 13, 2018, regarding the approval of the Financing Guide for the Programme for stimulating the renewal of the National Car Park 2018-2019, published in the Official Gazette of Romania no. 791 of September 14, 2018. - ISSUER: MINISTRY OF THE ENVIRONMENT.

National Policy Framework for the Market Development of Alternative Fuels in the Transport Sector and the Installation of the Relevant Infrastructure in Romania, elaborated by the Ministry of Energy, in collaboration with the Ministry of Transport, the Ministry of the Environment , the Ministry of Regional Development, Public Administration and European Funds and the Ministry of Economy is a strategic document elaborated in accordance with the Law 34 of March 27, 2017 on the installation of the alternative fuel infrastructure and is transposing Directive 2014/94/EU of the European Parliament and of the Council (October 22, 2014) into the Romanian legislation. The purpose of this document is to support the development of alternative fuels infrastructure in Romania, so that all relevant modes of

transport, methods and technologies can be used in a non-discriminatory manner in accordance with their efficiency, applicability and cost-effectiveness to ensure a high quality and efficient transport system, high continuity and minimal impact on the environment and the health of the population, both in urban agglomerations and along inter-urban infrastructure and European roads, naval and air transport networks.

Law no. 37/2018 regarding the promotion of ecological transport obliges local public authorities, publicly owned companies and companies subordinated to the administrative-territorial units to ensure that at least 30% of their newly purchased passenger vehicles are powered by electric propulsion engines, green technologies such as Electric, Hybrid, Hybrid Plug-In, Hydrogen (FCV) propulsion engines, compressed natural gas, liquefied natural gas or biogas engines. The percentage will be calculated from the total number of vehicles purchased in a year.

Moreover, in 2018, the Ministry of Regional Development and Public Administration has initiated a government debate aimed to modify the general urban planning regulation, obliging developers of shopping centers, office buildings and collective housing units to provide at least one charging point for electric vehicles for every three parking spaces. The initiator of the regulation wants to comply with the requirements of the Directive 2014/94/EU on the installation of the alternative fuel infrastructure, although the European legislator requires only one charging point for 10 cars. The aforementioned document also obliges state owned as well as privately owned public transport companies, including taxi companies, to ensure that at least 30% of their newly purchased vehicles are electric. The draft law is debated within the Government, together with the Romanian Association of Automobile Manufacturers and the Association of Automobile Manufacturers and Importers.

In addition, currently a new law is under elaboration, to introduce an obligation for all entities mentioned, so that if they purchase more than 10 vehicles per year, at least 10% of them have to be electric.

At a local level, the decision of the General Council of the Municipality of Bucharest, adopted in June 2017, stipulates fines from 3,000 lei to 5,000 lei (600 – 1000 euros) for the owners or administrators of commercial spaces and offices that have more than 100 parking places and have not installed charging points for electric vehicles.

Incentives

In Romania, except for trolley busses and trams, the adoption of EVs is at the beginning due to both the high purchase price of such vehicles and the lack of necessary charging infrastructure all over the country. These two factors represent strong barriers for electric cars to penetrate the Romanian market. However, the Romanian government has started to tackle the legislative aspects regarding this pressing issue and recently issued a new regulation, ”environmental tax/stamp”, which makes it possible for EVs to be subject to tax cuts. According to the Fiscal Code in force, electric vehicles are exempted from vehicle taxes.

In 2016, a national programme for subsidies, called “Rabla plus”, was put into force, providing grants for the acquisition of EVs. In 2019, the Rabla plus programme had an allocated budget

of over 75 million lei (16M euros), out of which over 15 million lei (3M euros) for individuals and 60 million lei (13M euros) for legal entities. The programme is formulated as follows:

- LEI 45.000 (approx. EUR 10.000) for pure EVs but not more than 50% of the price for the purchase of a new pure EV; and
- LEI 20.000 (approx. EUR 5.000) for plug-in hybrid EVs but no more than 50% of the purchase price, for the purchase of a new hybrid EV with an external power source, which generates a CO2 emissions of less than 50 g / km NEDC with CO2 emissions of less than 50 g CO2 / km. If CO2 emissions under the WLTP standard are entered in the Certificate of Conformity, it is granted for the new hybrid electric vehicle that generates a maximum of 70 g CO2 / km NEDC in mixed mode.

Public authorities and institutions can purchase EVs of up to € 35.000 (VAT included).

Accessing Rabla plus is not conditional upon the scrapping and scrapping of a used vehicle. However, if the beneficiaries will scrap a used vehicle and purchase an EV within the Rabla plus Program, they will have the possibility to cumulate the scrapping premium, worth 6.500 Lei (1.400 euros).

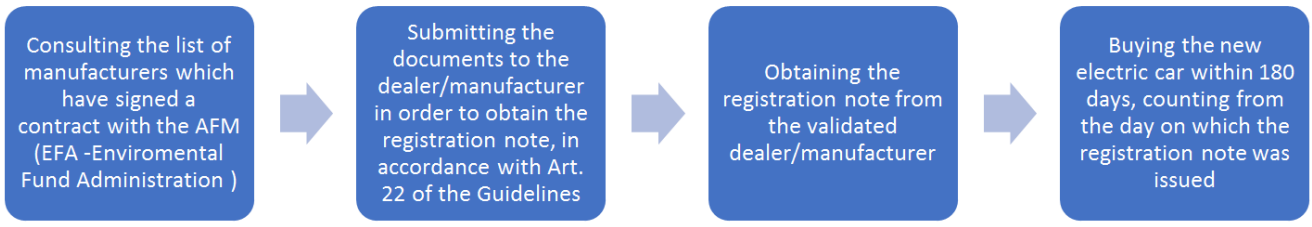
At regional level, 148.690.000 € were allocated at the North-West Region of Romania within Priority Axis 4.1 of the 2014-2020 Regional Operational Program for big cities (county seat municipalities), in order to buy new Electric busses or Hybrid busses, trolleys and trams as well as the necessary infrastructure for recharging stations.

Conditions for subsidies

In general, the private beneficiaries need to fulfill the following conditions to receive grants:

- domicile or residence in Romania;
- no payment obligations to the local budget;
- registered with a validated dealer for the purchase of a new electric vehicle or a new hybrid electric vehicle, obtaining the registration note;
- Purchase the new pure electric vehicle or the new hybrid electric vehicle from the validated dealer who issued the registration note.

In the case of private individuals, the application procedure for subsidies is described at the following diagram:

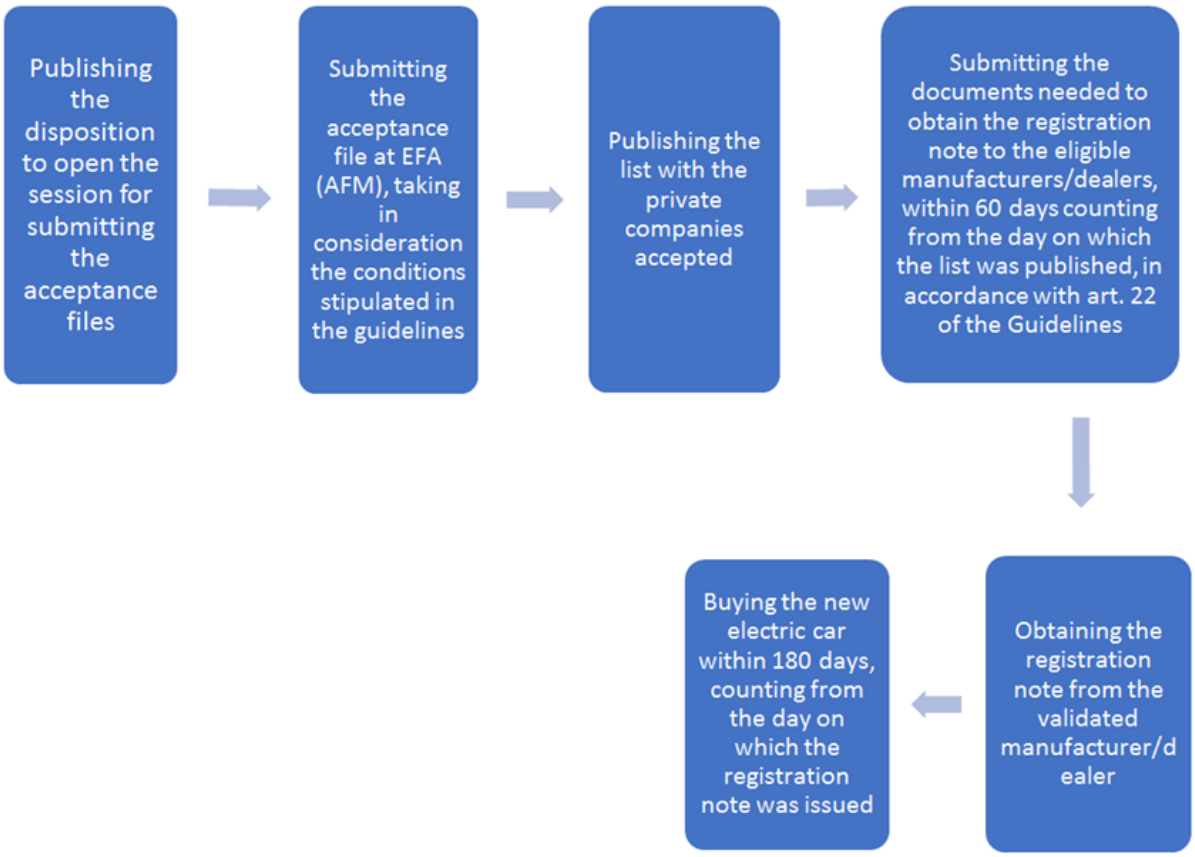


If the beneficiary is a private company:

- approval of the acceptance file from the Environment Fund Administration;

- registered with a validated dealer in order to purchase a new electric vehicle or the new hybrid electric vehicle, obtaining the registration note;
- Purchase the new pure electric vehicle or the new hybrid electric vehicle from the validated dealer who issued the registration note.

In the case of private companies, the application procedure for subsidies is as follows:



In the case of public authorities, for the acquisition of EVs and charging stations, within Priority Axis 4.1 of the 2014-2020 Regional Operational Programme, the eligibility criteria for subsidies are the following:

- the legal status of the applicant has to be public (must be a public authority – county capital cities or other associative structures which involve the county capital cities);
- The applicant and / or his / her legal representative, including his / her partner and / or his / her legal representative, if applicable, does NOT fit in any of the situations presented in the Declaration of eligibility;
- Proof of ownership over the building, object of the project;
- Proof of ownership over the means of public transport and other movable goods;
- Proof of ownership over the buildings and public transport vehicles, such as e-ticketing systems, traffic management systems and others smart systems used in public transportation.

Required documents for subsidies

For private beneficiaries:

- invoices issued to the beneficiaries when purchasing new vehicles;
- declarations on their own responsibility, in a form authenticated by the notary public, by which the beneficiaries explicitly express their option to purchase the new vehicles at the end of the lease period;
- the fiscal attestation certificate regarding the payment obligations to the state budget, issued on behalf of the manufacturer validated by the specialized territorial body of the Ministry of Public Finance;
- the fiscal attestation certificate regarding local taxes and other incomes of the local budget, issued on behalf of the producer validated by the local public authority in whose territorial area the producer has its registered office;
- the certificate of attestation regarding the obligations to the Environmental Fund, issued on behalf of the manufacturer validated by the Authority;
- The certificate of conformity of the new vehicle.

For public beneficiaries within Priority Axis 4.1 of the 2014-2020 Regional Operational Programme:

- The address regarding the opening of the account available to the Treasury, for the collection of the amounts from the payment requests (at the first payment request);
- Financial identification form (in original);
- Declaration on the own responsibility of the beneficiary regarding the non-deductibility of the VAT related to the eligible expenses included in the budget of the project proposed for financing;
- Declaration on own responsibility regarding the correctness of the amounts representing the VAT included in the invoices;
- Declaration on the own responsibility of the beneficiary regarding the non-deductibility of the VAT related to the expenses included in the payment request, certified by the competent fiscal body;
- Copy of the Certificate regarding the non-deductibility of VAT related to the expenses included in the payment request, issued by ANAF, according to the procedure approved by order of the Minister of Public Finance;
- copies according to the contracts concluded by the beneficiary and the additional documents;
- copies of invoices;
- copy of the Advance Guarantee (if applicable);
- copy of the Good Performance Guarantee (if applicable);
- copies of customs declarations (for imported goods), from countries other than EU members;
- copies after the minutes of receipt of the purchased goods (if applicable);
- copies after the minutes of commissioning the purchased goods (it is attached to the final payment request);
- Copies of the documents attesting the payment (eg payment orders, statements of account, etc.) that prove the payment of the own contribution related to the eligible expenses.

E-mobility Market

In Romania, the authorities responsible for the management and regulation of the electricity mobility market are: the Ministry of Energy, the Ministry of Regional Development and Public Administration and the Ministry of Environment, with the two latest being responsible for the criteria set to purchase grants for charging points installation. Currently, there are private charging points available in the country, within parking spots of shopping malls, office buildings, hotels, gas stations, etc., as well as public charging stations within the public parking of the city halls. Owners of EVs can charge their vehicles at these public points for free. However, there are also a few public charging points that charge a fee for the EV owners (maximum 50 cents/1 kWh) and the owners have to pay on the spot with a credit/debit card. Up to now, no grid stability or power quality issues at the electricity network have been reported.

ROMANIA - NORTH WEST REGION

NORTH WEST REGION
67 charging stations

- **13 in Cluj-Napoca (CLUJ county)**
- **33 in Oradea (BIHOR county)**
- **8 in Satu Mare (Satu-Mare county)**
- **4 in Zalău (SĂLAJ county)**
- **9 in Baia Mare (Baia-Mare county)**
- **0 in Bistrița (Bistrița-Năsăud county)**

The North-West region of Romania was created through the voluntary association of the local and county level authorities from the counties Bihor, Bistrița-Năsăud, Cluj, Maramureș, Satu Mare and Sălaj. The surface area of the region is 34.160 km2, representing 14.3% of Romania's territory. The region has 15 cities, 28 towns and 403 communes (rural territorial administrative units). The strengths of the regional economy are based on the richness and diversity of natural resources, the potential for RES development, as well as its multicultural heritage along with great tourism potential.

Romania promotes e-mobility at national but also at regional level; Specifically, 148.690.000 € were allocated at the North-West Region of Romania within the 2014-2020 Regional Operational Program (Priority Axis 4 – Supporting sustainable urban development, Investment Priority 4.1 - Promotion of carbon reduction strategies for all types of territories, in particular urban areas, including the promotion of sustainable urban mobility plans and measures to mitigate climate change), in order to buy new Electric busses or Hybrid busses, trolleys and trams as well as the necessary infrastructure for recharging stations.

At a municipal level, Sustainable Urban Mobility Plans have been elaborated by all six county municipalities in the North-West Region, several of them – at least declaratively – promoting actions to introduce electric vehicles and appropriate charging infrastructure especially in public transport. Until now, electric cars have not really been a priority for the local authorities, due to insufficient knowledge combined with prejudices in the field, coupled by the very limited interest and high cost of developing the necessary infrastructure. This has made it clear that there is a need for different types of support (financial, fiscal, promotion of

mutual learning in the field) as well as a favorable legislative framework, since the Romanian EV market is still one of the most weakly developed ones in the EU. Nonetheless, with the appropriate measures the situation can slowly improve and catch up with the European trends, especially with financing through Policy Instruments, like the ROP, Priority Axis 4, Investment priority 4.1.

Investment priority 4.1 of Priority axis 4, targets three fields of action, namely the improvement of urban public transport (i.e. purchase of electric vehicles, improving the infrastructure); investments targeting electric and non-motorized transport (i.e. set up of electric transport infrastructure) and other investments for reducing CO2 emissions in urban areas. As e-mobility in Romania is at the beginning, local authorities have neither the capacity to make necessary investments to promote green transport, nor the experience to elaborate strong project proposals to successfully apply for funding through this policy instrument. The policy instrument requires measures promoting e-mobility to be well integrated into urban development strategies; in consequence, local authorities need knowledge about good practice cases related to implemented e-mobility measures in order to learn through sharing experience with peers throughout the EU. Thus, through well-tailored learning processes, local authorities will be able to build capacity to apply for funding, leading to a reduction of CO2 emissions at regional level. Definitely, the EMOBICITY project will provide added value through exchange of knowledge, experience and good practices, so that aforementioned issues can be tackled.

6 EU Partners, 5 action plans, 1 goal: Integration of e-mobility