

# REGULATION OF PUBLIC CHARGING STATIONS IN PROPOSED POLISH LAW ON ELECTROMOBILITY AND ALTERNATIVE FUELS

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## **Abstract**

Transport, as the core of the regional, national, and, undoubtedly, global economies, requires for undisturbed functioning a developed infrastructure; places where vehicles can be fueled, especially filling stations, are one of the most essential elements of this infrastructure. Electromobility, which is certainly becoming step by step the future of the wholly understood transport sector, will also need, like conventional transport, a specific infrastructure which will permit the refueling of electro-vehicles, too. Easily accessible public charging stations seem to be the most important element in developing electromobility in common transport. To assure such, complex legal regulations are necessary. The Polish legislature has responded to this necessity and is now pursuing work on laws regarding electromobility and alternative fuels. This article has two main emphases - analyze the proposed regulations in the matter of public charging stations and pinpoint the principal tasks in this score. The author hopes that this article will initiate larger interest in this developing institution in Poland.

## **Introduction**

The assertion of the growth of ecology requires nowadays the development of environment-friendly inventions which can thereafter be used by every economic sector. Transport is an indispensable element of the whole economy. Currently, one of the best compounds of environmentally friendly transport is electromobility. Electromobility may be defined as a road transport system based on vehicles that are propelled by electricity (Grauders, Sarasini, Karlström 2014: 10). The electricity to propel these vehicles may derive from clean sources, so electromobility is potentially a fully ecological means of road transport.

The efficient functioning of such areas as electromobility certainly needs state-based regulation, which should create the most essential institutions and procedures. As every conventional vehicle has to be cyclically fueled, running electric vehicles also have to be charged when necessary. As was already mentioned above, the goal of establishing the legal scope of electromobility is the enhancement of ecology in transport and fighting the harmful effects of polluting the environment. However, even the most environment-friendly means of transport will not run correctly without a well-developed and accessible infrastructure. As to electromobility and its common popularity, probably the most important factor is a network of public charging stations.

This article will broach the question of the legal basis of public charging stations, with focus on the proposed Polish law on electromobility and alternative fuels and its conformity with European Union law. Also, there will be undertaken an assay of indicating the general key elements that should be considered by state bodies in the creation and development of public charging stations infrastructure.

## **Public charging stations – definition, types, and brief history**

The description of public charging stations deserves reference to the opinions of researchers in this domain. Firstly, it is worth mentioning the general definition of public charging stations. J. Wirges defines public charging stations as charging stations which are

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publicly accessible to EV [electrovehicles - author's note] drivers (not taking required membership, a specific service provider, or similar limitations of use into account), usually set up at public curbsides (Wirges 2016: 88). J. Wirges considers that within the category of public charging stations semi-public charging stations should also be included, which can be characterized as charging stations accessible only to parts of the public, for instance the clients of a business, e.g. stations located in publicly accessible parking garages of supermarkets, cinemas, and other venues, that are open to the public (Wirges 2016: 88).

The history of charging stations is strictly connected with the history of electric vehicles. As the first electric cars were introduced in the 19th century (the first practical electric car was presented in 1884 by the British inventor Thomas Parker), so the need to create facilities permitting their charging was already present. C. D. Anderson and J. Anderson write, that “In 1895, a firm in London displayed a sign indicating it was prepared to charge ‘accumulators’ of all sizes at any hour of the day or night. At the same time, *L’Energie Électrique* in France painted a glowing picture of the future of electric vehicles, with charging stations being available at any of the 10,000 establishments that had electrical plants. By 1906 a battery exchange system had been developed in Hartford, Connecticut. A customer could purchase a vehicle without a battery and would then pay a flat fee for service and battery exchanging. The Philadelphia/Baltimore area, for example, had twenty-seven charging stations” (Anderson, Anderson 2010: 8).

Although it seemed that electric vehicles would dominate the market of means of transport, in the 1920s, due to a series of technological and economic developments that incentivized the deployment of gas-powered vehicles, the popularity of electric vehicles started to decline (Safak Bayram, Tajer 2017:5). And it was until the 1990s when a revival of interest in electric vehicles could be observed; societal reasons for the revival of electric vehicles (EV’s) are the monetary cost of energy and its cost in national dependence, coupled with the more recent focus on the environmental damage inflicted by internal combustion engines (Chan, Chau 1997: 3). With the revival of EV technology, there is also a need for providing an efficient infrastructure that includes charging stations.

Currently public charging stations may fall into two fundamental contexts:

- “charging while parked”, which usually means a commercial venture for a fee or free, offered in partnership with the owners of the parking lot (it can be also associated with semi-public charging stations), examples include charging stations placed in parking lots, shopping malls, etc.;
- fast charging at public charging stations with a charging force of more than 40 kW, delivering over 60 miles (100 km) of range in 10–30 minutes – these chargers may be at rest stops to allow for longer distance trips, but they may also be used regularly by commuters in metropolitan areas, and for charging while parked for shorter or longer periods. The fast charging technology is nowadays the most common type used in public charging stations.

Finally, it is legitimate to describe briefly the technology used in the chargers at public charging stations. The modern one, called “DC fast charging” or commonly “level 3 chargers” in relation to technologically lower-level chargers, are chargers which charge an EV through a 480 V and direct-current (DC) plug typically up to 80% charge of a vehicle’s battery in 30 minutes (EVTown 2017). The main advantage of this technology is the drastic reduction of charge time, nearly to that of refueling a gasoline car (Northeast Utilities 2017).

### **Proposed regulation of public charging stations in Polish law on electromobility and alternative fuels**

The Polish legislature, in reference to the usual position of EU institutions, has decided to regulate the matter of public charging stations in the national law. The proposed law on electromobility and alternative fuels (in a version from 22.11.2017) sets norms concerning the area of creation, functioning, and other essential issues in article 2 points 6, 7, 8, 28, 30 and in chapter 2 subsequently. These regulations will be in turn analyzed in the below mentioned subsections.

#### Basic terms

The project law on electromobility and alternative fuels envisages the setting up of a few important, in terms of the institution of public charging stations, terms, which are:

- **charging** (pol. *ładowanie*), defined in article 2 point 6 on electromobility and alternative fuels project, which is electricity consumption by an electric vehicle, a hybrid electric vehicle, a zero-emission bus, a motor vehicle that is not an electric vehicle, a moped, a bicycle, or a bicycle cart within the meaning of the Act of 20 June 1997 – Road Traffic Law, carried out at a charging point, for the purpose of driving this vehicle;
- **public charging station** (pol. *ogólnodostępna stacja ładowania*), defined in article 2 point 7 on electromobility and alternative fuels project, which is a charging station available on an equal footing basis for each user of an electric vehicle, hybrid electric vehicle, motor vehicle other than an electric vehicle, moped, bicycle or bicycle cart within the meaning of the Act of 20 June 1997 – Road Traffic Law;
- **operator of a public charging station** (pol. *operator ogólnodostępnej stacji ładowania*), defined in article 2 point 8 on electromobility and alternative fuels project, which is an entity responsible for the construction, management, operational safety, operation, maintenance, and repair of a generally available charging station or a point of power supply for ships;
- **charging station** (pol. *stacja ładowania*), defined in article 2 point 28 on electromobility and alternative fuels project, which is:
  - a) a construction device related to construction work, or
  - b) a detached building with at least one charging point installed,
  - c) equipped with software enabling the provision of charging services, including a parking stand and an installation leading from the charging point to the power connection;
- **charging service** (pol. *usługa ładowania*), defined in article 2 point 30 on electromobility and alternative fuels project, which is the chargeable charge for charging in a public charging station.

In the explanation to the projected law on electromobility and alternative fuels, the law's proposer, the Minister of Energy, has indicated that the introduction to the Polish legal system of these new terms will liquidate barriers to the progress of the Polish alternative fuels market (Ministerstwo Energii, 2017: 9). What is more, these definitions should contribute to the main aims of this regulation, which is low-carbon emission transport development and alternative fuel infrastructure (RCL 2017: 2).

Rules for the development and operation of alternative fuels infrastructure – specific regulation for public charging stations

Specific regulation is undoubtedly necessary for almost all legal institutions, especially for those expanding, like public charging stations. At the beginning, it is needful to mention that the Polish legislature (through the Minister of Energy) is heading to its target in this area which is “defining the path of development and construction of generally accessible charging stations for electric vehicles” which “should enable the emergence of a core infrastructure network for these fuels, and thus contribute to the implementation of the objectives set by the project promoter and the objectives of the National Framework.” (Ministerstwo Energii 2017: 10). What is more, it is proposed to dissociate the regulations of public charging stations and the infrastructure for vehicles powered by natural gas - the reasons of such dissociation follow (Ministerstwo Energii 2017: 10):

- different properties of both alternative fuels, which affects different principles of particular infrastructure operation;
- differences in the number of infrastructure planned to deploy;
- various costs of building a charging station and a natural gas station;
- the different structures of the electricity and natural gas market and, what is connected with it, the different number of entities interested in economic activity related to the construction of infrastructure and the sale of alternative fuels.

*The duties of an operator of a public charging station*

Article 3 of the proposed law on electromobility and alternative fuels contains the main duties of the operator of a public charging station, which are the following:

- ensuring that:
  - a) at least one charging service provider operates at a public charging station,
  - b) a public charging station fulfills the technical requirements referred to in the regulations issued on the basis of art. 18;
- ensuring that the Office of Technical Inspection, hereinafter referred to as “UDT”, conducts tests of the public charging station;
- responsibility for the proper technical condition and ensured safe operation of a generally accessible charging station;
- concluding an agreement for the provision of electricity distribution services, referred to in art. 5 para. 2 point 2 of the Act of April 10, 1997 - Energy Law;

- providing the operator of the electricity distribution system, the charging service provider and the seller of electricity, with data on the amount of electricity consumed;
- concluding a contract for the sale of electricity to ensure the functioning of the charging station;
- accounting for electricity losses resulting from the operation of the charging station;
- providing information on the rules of using this station in the public charging station and instructions for its use;
- providing charge providers with access to a public charging station on an equal treatment basis.

The next essential article in the matter of the duties of an operator of public charging stations is article 8 point 1, which restricts the use of energy from public charging stations just to charging, recharging, or replacing the battery for driving an electric vehicle, a hybrid electric vehicle, a zero-emission bus, a motor vehicle, not being an electric vehicle, moped, bicycle or bicycle cart within the meaning of the Act of 20 June 1997 - Road Traffic Law - at the charging point. This provision should be rated positively as it composes a legal norm which counteracts any eventual abuses in the public charging stations operation.

#### *Supplier of charging service*

In article 3 paragraph 2 the Polish legislature proposes creation of an entity called “supplier of charging service” (pol. *dostawca usługi ładowania*). This construction creates *de facto* a division of the wholly understood charging of electric vehicles into two activities - operating of a public charging station and supplying a charging service. It is proposed that the supplier of the charging service will have two primary duties:

- provision of the charging service;
- contract sale of electricity with an electricity seller.

The Ministry of Energy does not explain precisely this idea. Taking into consideration the objectives of the proposed law on electromobility and alternative fuels it seems that this solution is worthless, because of undue contradistinction between the duties of a public charging station operator and the supplier of a charging service, especially that article 6 provides that the operator of the public charging station, excluding the power distribution system operator, may act as a charging service provider. From the point of lucidity of the functioning of the provision of the charging service for owners of electrovehicles, i.e. the EV’s fuel market, the entity of public charging stations operator is sufficient. The Polish legislator exhibits here overregulation, which will lead to many misunderstandings and even conflicts.

#### *Other provisions*

In the proposed law on electromobility and alternative fuels, Polish authorities have introduced also other regulations concerning technical and safety requirements. Many aspects, especially those constructional, are planned to be placed under the supervision of the special government’s body – the Technical Supervision Office (pol. *Urząd Dozoru Technicznego*).

What is understandable, many specific issues will be concretized in delegated acts by the relevant ministers, thus the minister relevant to the energy (article 18) eventually in accord with the minister relevant to the maritime economy and the minister relevant to the inland waterway shipping (article 19).

### **Conformity of the proposed law on electromobility and alternative fuels with the European Union law**

Accession of the Republic of Poland to the European Union on 1st May 2004 has brought a specific legal dualism, where two legal orders take effect. The laws of each Member State of the European Union has to be compatible with the acts of the EU's institutions.

In the scope of electromobility, the most important EU legal act is Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of an alternative fuels infrastructure (O. J. of the EU L 307 from 28.10.2014, p. 1). In point 25 of the preamble to this directive, where the reasons for adopting such a legal act are stated, it is indicated that “Electro-mobility is a fast developing area. Current recharging interface technologies include cable connectors, but future interface technologies such as wireless charging or battery swapping need to be considered as well. Legislation needs to ensure that technological innovation is facilitated.” The EU legislation states also in point 27 of the preamble to the directive 2014/94/EU, that “Electro-mobility is an important contributor to meeting the Union’s ambitious climate and energy targets for 2020.” What is more, points 24 and 26 state that “Member States should ensure that publicly accessible infrastructure for the supply of electricity to motor vehicles is built up. To define an appropriate number of recharging points accessible to the public in their national policy frameworks, it should be possible for Member States to take into consideration the number of existing recharging points accessible to the public on their territory and their specifications, and to decide whether to concentrate deployment efforts on normal or high power recharging points.” and “A recharging or refueling point accessible to the public may include, for example, privately owned recharging or refueling points or devices accessible to the public through registration cards or fees, recharging or refueling points of car-sharing schemes which allow access for third party users by means of subscription, or recharging or refueling points in public parking. Recharging or refueling points which allow private users physical access with an authorization or a subscription should be considered to be recharging or refueling points accessible to the public.” Taking in all of the above-mentioned statements, it is necessary to conclude that the European Union organs see well the benefits of electromobility for the environment and economy. They also see that without a special surrounding infrastructure electromobility will never become as developed as desired.

The main points of the 2014/94/EU Directive essential for the public charging stations facilities are:

- shaping of the definition of “recharging or refueling point accessible to the public”, which means a recharging or refueling point to supply an alternative fuel which provides Union-wide non-discriminatory access to users. Non-discriminatory access may include different

- terms of authentication, use, and payment (article 2 point 7 of the directive 2014/94/EU);
- imposing of a few obligations to Member States like designation of urban/suburban agglomerations, of other densely populated areas, and of networks which, subject to market needs, are to be equipped with recharging points accessible to the public (article 3 point 1 indent 5), or ensuring that an appropriate number of recharging points accessible to the public are put in place by 31 December 2020 (article 4 point 1).

The Directive on the deployment of alternative fuels infrastructure permits the adoption of elastic regulations concerning the matter of public charging stations. As shown in the table of accordance between Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure and the proposed Polish law on electromobility and alternative fuels, the articles are not a direct implementation of the directive (RCLa 2017: 1 – 6). This method remains in accordance with the sense of the Directive and should be rated positively.

### **Conclusion**

Current trends in environmental issues suggest that electromobility will probably become an essential part of world's economy. As it concerns the prevalent conveyances, electromobility also needs a capably functioning infrastructure in which public charging stations, like filling stations currently are one of the most important elements. However, the regulation of a public charging station, in order to be effective and ensure the success of the complete transition to electric transport, must be transparent and ancillary to the mentioned objectives. Complete analysis and evaluation of the regulation of public charging stations will be possible after implementation of the law on electromobility and alternative fuels.

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