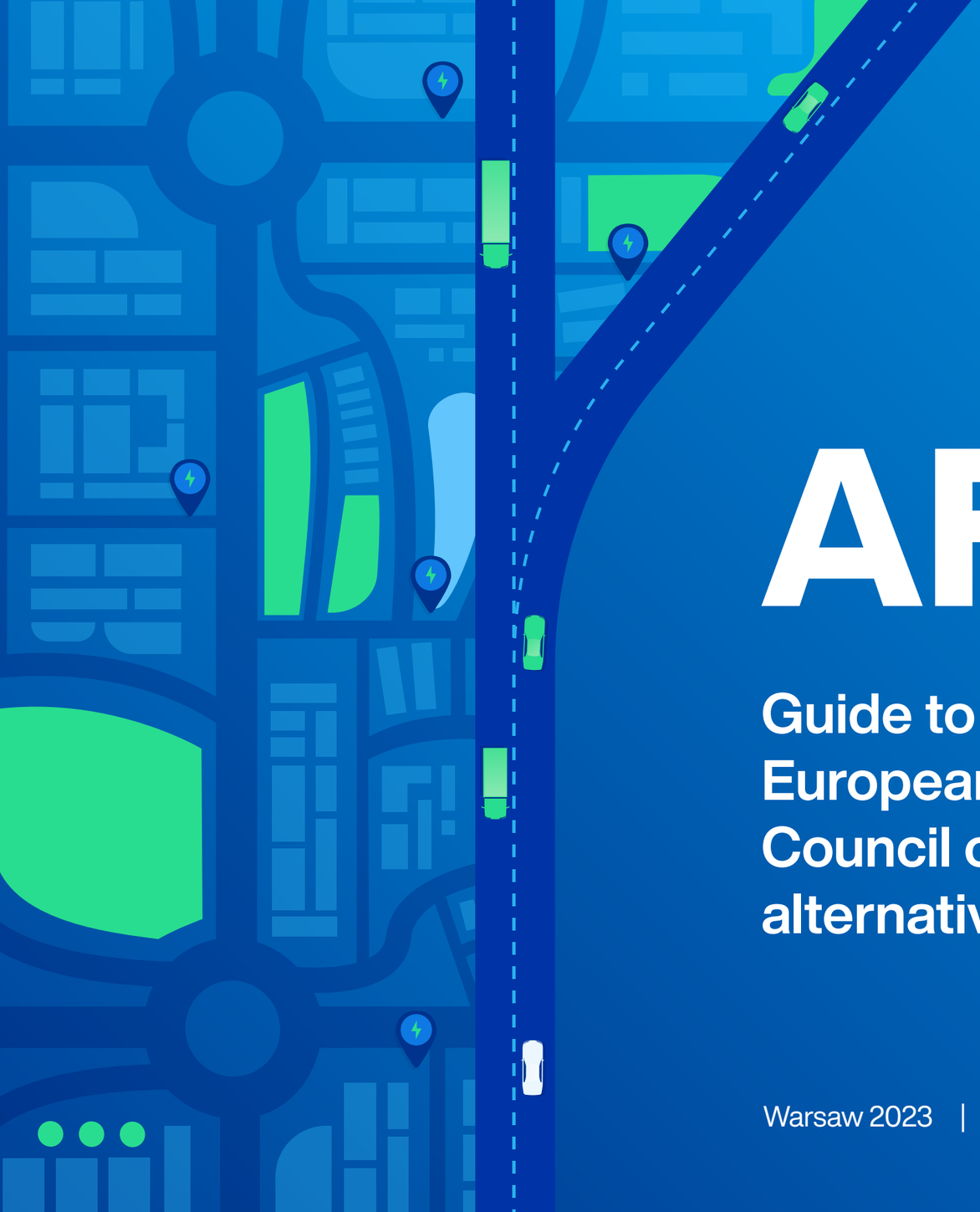

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AVERE
The European Association for Electromobility

AFIR

Guide to the Regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure

Warsaw 2023 | pspa.com.pl

Cooperation F5A New Mobility Research & Consulting

Ladies and Gentelman,

roughly two years after the presentation of the initial draft of AFIR as part of the "Fit for 55" package, the EU Council has now approved the final version of the new regulation. This could potentially serve as a significant step towards expanding the charging infrastructure in the European Union.

The AFIR, being a regulation that does not require implementation into national law, will come into effect in the first half of 2024. This new legislative act imposes highly ambitious requirements on each Member State, primarily centered around expanding infrastructure. The key requirement is the obligation to adjust the total power of publicly available charging stations to the number of registered electric cars (1.3 kW for each BEV and 0.8 kW for each PHEV). Given the rapid growth anticipated in the Polish e-mobility market, this means that within less than three years, the power output of charging infrastructure in Poland will need to increase fivefold compared to the levels in 2022. This presents an enormous challenge for all stakeholders in the e-mobility sector, particularly the government administration.

AFIR also includes requirements pertaining to the installation of charging hubs for both light-duty and heavy-duty vehicles along the TEN-T network, the provision of payment terminals for the chargers or smart charging functions and obligations concerning information about charging rates and reporting by the Member States.

The purpose of this guide is to present, in an accessible, infographic form, the objectives of the AFIR that are most relevant to drivers, operators and Member States.

We hope you will enjoy our report,

Maciej Mazur

Managing Director, PSPA
President, AVERE

What is AFIR?

AFIR

Regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU of the European Parliament and of the Council

Applicability of the AFIR

Commencement of application of the AFIR provisions

April 13, 2024

Direct applicability of the provisions of the AFIR that do not define any targets

No need to implement Polish regulations

AFIR regulations supersede all provisions of the Electromobility and Alternative Fuels Act that are contrary to AFIR

Main definitions

Mobility service provider

A legal person who provides services in return for remuneration to an end user, including the sale of a charging service

Operator of a charging point

The entity responsible for the management and operation of a charging point, which provides a charging service to end users, including in the name and on behalf of a mobility service provider

TEN-T core network

A network as defined in Article 38 of Regulation (EU) No 1315/2013

TEN-T comprehensive network

A network as defined in Article 9 of Regulation (EU) No 1315/2013

Along the TEN-T network

In the context of charging stations, this means that the stations are located along the TEN-T network or within 3 km from the nearest exit from a TEN-T road and in the case of hydrogen refueling stations – at the TEN-T network or within 10 km of the nearest exit from the TEN-T road

Heavy-duty vehicle – HDV

A motor vehicle of categories M2, M3, N2 or N3 as defined in Regulation 2018/858

Light-duty vehicle – LDV

A motor vehicle of categories M1 or N1 as defined in Regulation 2018/858

Battery electric vehicle

An electric vehicle that exclusively runs on the electric motor, with no secondary source of propulsion

Main definitions

Electric vehicle

Electric vehicle' means a motor vehicle equipped with a powertrain containing at least one non-peripheral electric machine as energy converter with an electric rechargeable energy storage system, which can be recharged externally

Plug-in hybrid vehicle

An electric vehicle equipped with a conventional combustion engine combined with an electric propulsion system, which can be charged from an external electric power source

Safe and secure parking

A parking area available for drivers who transport items or persons that has been accordingly certified according to Commission Regulation 2022/1012

Urban node

An urban area where the transport infrastructure of the trans-European transport network, located in and around an urban area, is connected with other parts of that infrastructure and with the infrastructure for regional and local traffic

Public alternative fuels infrastructure

Alternative fuels infrastructure which is located at a site or premise that is open to the general public, irrespective of whether the alternative fuels infrastructure is located on public or on private property, whether limitations or conditions apply in terms of access to the site or premise and irrespective of the applicable use conditions of the alternative fuels infrastructure

Charging service

Sale or provision of electricity, including related services, through a public charging point

Charge on an ad hoc basis

A charging service purchased by an end user without the need for that end user to register, conclude a written agreement, or enter into a longer-lasting commercial relationship with the operator of that charging point beyond the mere purchase of the service

Refueling on an ad hoc basis

Refueling service purchased by the end user without the need to register at the operator of a given fuel refueling point, conclude a written contract with him or establish long-term business relations with him that go beyond the simple purchase of the service

Main definitions

Ad hoc price

The price charged by an operator of a charging point to an end user for charging on an ad hoc basis

Contract-based payment

A payment for a charging service from the end user to a mobility service provider on the basis of a contract between the end user and the mobility service provider

Smart charging

A charging operation in which the intensity of electricity delivered to the battery is adjusted in real-time, based on information received through electronic communication

Charging hub

One or more charging stations at a specific location

Charging station

A physical installation at a specific location, consisting of one or more charging points

Charging point

A fixed or mobile physical interface, whether connected or unconnected to the grid, designed for the transfer of electricity to an electric vehicle. While it may have one or several connectors, it is capable of charging only one electric vehicle at a time. This definition excludes devices with a power output less than or equal to 3.7 kW, whose primary purpose is not the charging of electric vehicles

Digitally-connected charging point

A charging point that can send and receive information in real time, communicate bi-directionally with the electricity grid and the electric vehicle, and that can be remotely monitored and controlled, including to start and stop the charging session and to measure electricity flows

Targets for charging infrastructure for eLDVs

Power output of public charging stations

1

Power output of public charging stations proportionate to the number of registered EVs

1.3 kW power output
/ every light-duty BEV

0.8 kW power output
/ every light-duty PHEV

2

An obligation imposed on Member States **to ensure the fulfilment of the above requirements at the end of each year**, starting from 2024

3

Share of light-duty BEVs registered in the country ≥15%:

- The Member State can demonstrate that the continued applicability of the requirements is unfavourable and unreasonable
- The Member State can obtain permission from the European Commission to apply less stringent requirements
- Period for the EC to issue the decision: **6 months**

Targets for charging infrastructure for eLDVs

Distribution of public charging hubs – TEN-T core network

By the end of 2025

Power output of every charging hub:

≥ 400 kW

including at least
1 charging point with a power of **≥ 150 kW**

Public charging hubs
in each direction of travel

Public charging hubs
at intervals of up to 60 km

By the end of 2027

Power output of every charging hub:

≥ 600 kW

including at least
2 charging points with a power of **≥ 150 kW**

Targets for charging infrastructure for eLDVs

Distribution of public charging hubs – TEN-T comprehensive network

By the end of 2027

At least along **50%** of the length of a TEN-T comprehensive network a power output of each charging hub

≥ 300 kW

including at least
1 charging point with a power of

≥ 150 kW

Public charging hubs
in each direction of travel

Public charging hubs
at intervals of up to 60 km

By the end of 2030

Along **100%** of the length of a TEN-T comprehensive network a power output of each charging hub

≥ 300 kW

including at least
1 charging point with a power of

≥ 150 kW

By the end of 2035

Along **100%** of the length of a TEN-T comprehensive network a power output of each charging hub

≥ 600 kW

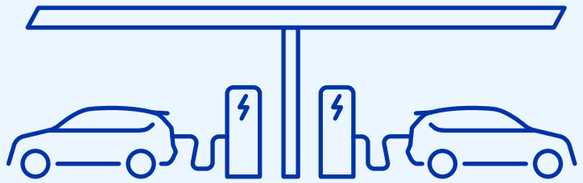
including at least
2 charging points with a power of

≥ 150 kW

Targets for charging infrastructure for eLDVs

Distribution of public charging hubs

General requirements for the TEN-T network



A single public charging hub can be set up for two directions of travel if:

- It is readily accessible on both sides of the road
- It is marked accordingly
- The same requirements as for 2 directions of travel have been met regarding the following:
  - → distance
  - → total power output of the charging hub
  - → number and power output of charging points

Targets for charging infrastructure for eLDVs

Distribution of public charging hubs

Derogations

Targets can be reduced by the Member States if:

- Traffic volume on a TEN-T network road

  < 8,500 LDVs

  per day

- No social and economic justification

Required notification of the derogation to the European Commission:

- **Every 2 years**

  another verification of the justification for the derogation

Permissible derogations:

- A public charging hub can be used for both directions of travel if:

  a) the total power output of public charging hubs, the number of charging points and their power outputs are met as for 1 direction of travel and

  b) the charging hub is accordingly marked and readily accessible from both directions of travel

- Reduction of the total power output of public charging hubs

  to 50% if:

  a) the hub is used for only 1 direction of travel and

  b) the requirements for the maximum distance between charging hubs, the number of charging points and the power output of individual charging

Targets for charging infrastructure for eLDVs

Distribution of public charging hubs

Derogations

Targets can be reduced by the Member States if:

- Traffic volume on a TEN-T network road

  < 3,000 LDVs

  per day

Required notification of the derogation to the European Commission:

- **Every 2 years**

  another verification of the justification for the derogation

Permissible derogations:

- Increasing the distance between public charging hubs

  to 100 km

  if the distance between charging hubs is marked accordingly

Targets for charging infrastructure for eHDVs

Distribution of public charging hubs – TEN-T core network

By the end of 2025

At least **15%** of the length of the TEN-T network must be provided with charging hubs with a power of

≥ 1,400 kW each

including at least
1 charging point with a power of

≥ 350 kW

Charging hubs
in every direction of travel

By the end of 2027

At least **50%** of the length of the TEN-T network must be provided with charging hubs with a power of

≥ 2,800 kW each

including at least
2 charging points with a power of

≥ 350 kW

By the end of 2030

Charging hubs must be provided at intervals of **up to 60 km** with a power output

≥ 3,600 kW each

including at least
2 charging points with a power of

≥ 350 kW

Targets for charging infrastructure for eHDVs

Distribution of public charging hubs – TEN-T comprehensive network

By the end of 2025

At least **15%** of the length of the TEN-T network must be provided with charging hubs with a power of

≥ 1,400 kW each

including at least
1 charging point with a power of

≥ 350 kW

Charging hubs
in every direction of travel

By the end of 2027

At least **50%** of the length of the TEN-T network must be provided with charging hubs with a power of

≥ 1,400 kW each

including at least
1 charging point with a power of

≥ 350 kW

By the end of 2030

Charging hubs must be provided at intervals of **up to 100 km** with a power output

≥ 1,500 kW each

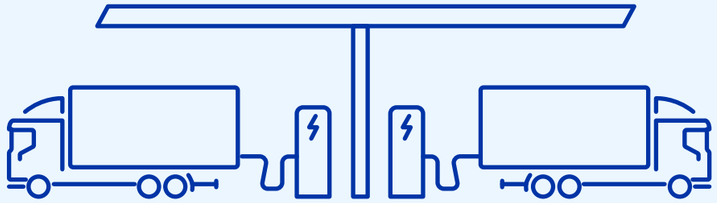
including at least
1 charging point with a power of

≥ 350 kW

Targets for charging infrastructure for eHDVs

Distribution of public charging hubs

General requirements for the TEN-T network



A single public charging hub can be set up for two directions of travel if:

- It is readily accessible on both sides of the road
- It is marked accordingly
- The same requirements as for 2 directions of travel have been met regarding the following:
  - → distance
  - → total power output of the charging hub
  - → number and power output of charging points

Targets for charging infrastructure for eHDVs

Distribution of public charging hubs

Derogations

Targets can be reduced by the Member States if:

- Traffic volume on a TEN-T network road

  < 2,000 HDVs

  per day

- No social and economic justification

Required notification of the derogation to the European Commission:

- **Every 2 years**

  another verification of the justification for the derogation

Permissible derogations:

- A public charging hub can be used for both directions of travel if:

  a) the total power output of public charging hubs, the number of charging points and their power outputs are met as for 1 direction of travel and

  b) the charging hub is accordingly marked and readily accessible from both directions of travel

- Reduction of the total power output of public charging hubs

  to 50% if:

  a) the hub is used for only 1 direction of travel and

  b) the requirements for the maximum distance between charging hubs, the number of charging points and the power output of individual charging

Targets for charging infrastructure for eHDVs

Distribution of public charging hubs

Derogations

Targets can be reduced by the Member States if:

- Traffic volume on a TEN-T core network road

  < 800 HDVs

  per day

Required notification of the derogation to the European Commission:

- **Every 2 years**

  another verification of the justification for the derogation

Permissible derogations:

- Increasing the distance between public charging hubs

  to 100 km

  if the distance between charging hubs is marked accordingly

Targets for charging infrastructure for eHDVs

Safe and secure parking

By the end of **2027**

In every safe and secure parking area, at least

2 public charging stations

for eHDVs with a power of

≥ 100 kW each

By the end of **2030**

In every safe and secure parking area, at least

4 public charging stations

for eHDVs with a power of

≥ 100 kW each

Targets for charging infrastructure for eHDVs

Urban nodes

By the end of 2025

In each urban node, public charging points for eHDVs with a total power output

≥ 900 kW

each charging station with a power of

≥ 150 kW

By the end of 2030

In each urban node, public charging points for eHDVs with a total power output

≥ 1,800 kW

each charging station with a power of

≥ 150 kW

Requirements for operators of public charging infrastructure

Payments

From April 13, 2024, operators of charging points shall, at all public charging points operated by them, provide end users with the possibility to charge their electric vehicle on an

ad hoc basis

At charging points put into operation from April 13, 2024, the operators of public charging stations shall enable ad hoc payments through at least the following:

- Payment card readers
- Devices with a contactless functionality that are at least able to read payment cards
- Devices using an Internet connection enabling secure payments, e.g., QR (for public charging points with a power output below 50 kW)

From the beginning of 2027

In all public charging points with a power output of **at least 50 kW** installed along and on the TEN-T network or in safe and secure parking areas, operators of public charging stations shall enable payment at least through the following:

- → Payment card readers
- → Devices with a contactless functionality that are at least able to read payment cards

Requirements for operators of public charging infrastructure

≥ 50 kW

Operators of public charging stations enabling ad hoc payments

Payments related to the ad hoc price:

- → Made based on the price per kWh
- → Can be combined with the payment per minute

(the obligation applies to charging points put into operation from April 13, 2024)

Obligation of the operators of public charging stations to communicate ad hoc prices at charging stations in such a way that:

- → They are known to the user before they initiate a charging session
- → They are easy to compare

(the obligation applies to charging points put into operation from April 13, 2024)

Prices:

- → Reasonable
- → Easily and clearly comparable
- → Transparent
- → Non-discriminatory

Requirements for operators of public charging infrastructure

< 50 kW

Operators of public charging stations enabling ad hoc payments

Obligation of operators of public charging stations to provide clear and easy access to information about the ad hoc price, including all price components, at all public charging stations, in such a way that:

- They are known to the user before they initiate a charging session
- They are easy to compare

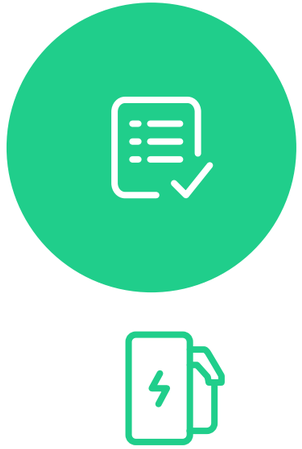
Obligation to display the applicable price components in the following order:

- Price per kWh
- Price per minute
- Price per session
- All other price components that may apply

Prices:

- Reasonable
- Easily and clearly comparable
- Transparent
- Non-discriminatory

Other requirements for operators of public charging infrastructure



1. Operators of charging points that offer automatic authentication at their public charging points shall **enable the end users the right not to use automatic authentication** and **enable them to charge on an ad hoc basis** or use another contract-based charging solution. Operators of charging points shall transparently display that option and offer it in a convenient manner to the end user, at each public charging point that they operate and where they make automatic authentication available.

2. Operators **shall not discriminate between the prices charged to end users** and prices charged to mobility service providers nor between prices charged to different mobility service providers
   → The level of prices may only be differentiated in a proportionate manner, according to an objective justification

3. Member States shall **monitor the market**, including, in particular, **the manner of displaying and calculating rates** for charging

4. By **October 14, 2024** the operators shall ensure that all public charging points are **digitally-connected charging points**

5. The operators shall ensure that all public charging points built or repaired after April 13,2024 are capable of **smart charging**

6. By **April 14, 2025** the operators of public charging points shall provide all of their DC public charging points with a **fixed charging cable**

Targets for hydrogen refueling infrastructure for road vehicles

Distribution of public hydrogen refueling stations – TEN-T core network

By the end of **2030**

Along the TEN-T core network, the obligation to operate publicly accessible hydrogen refueling stations with a planned total capacity of

≥ 1 tonne per day

equipped with a

≥ 700 bars pressure distributor

At least one public hydrogen refueling station **in each urban node**

Public hydrogen refueling stations maximum every

200 km

Targets for hydrogen refueling infrastructure for road vehicles

An obligation imposed on every **Member State**

to define a clear trajectory towards the 2030 target as part of national policy

- Obligation to provide a **clear indicative target for 2027** ensuring sufficient network coverage to meet evolving market needs

An obligation imposed on **neighboring Member States**

to ensure that the maximum distance between public hydrogen refueling stations is not exceeded in the case of cross-border sections of the TEN-T core network

An obligation imposed on **the operator of a public refueling station or**, if the operator is not the owner, **the owner of a public station**

to ensure that the station is adapted to serve light and heavy vehicles

Targets for hydrogen refueling infrastructure for road vehicles

Derogations

Targets can be reduced by the Member States if:

- Traffic volume on a TEN-T core network road

  < 2,000 HDVs

  per day

- No social and economic justification

Required notification of the derogation to the European Commission:

- **Every 2 years**

  another verification of the justification for the derogation

Permissible derogations:

- Reducing the total capacity of public hydrogen refueling stations

  to 50%

  if the requirements regarding the distance and pressure of dispensers are met

National policy frameworks

An obligation imposed on every Member State

to prepare and send to the European Commission by the end of 2024 a draft national policy framework for the development of the market as regards alternative fuels in the transport sector and the deployment of the relevant infrastructure:

- Obligation to consider the recommendations of the European Commission
- Selected, required elements:
  - → Review of the current situation, perspectives and planned initiatives regarding the implementation of infrastructure
  - → National general and detailed objectives
  - → Policies and means required to fulfil the objectives
  - → Planned and implemented projects designed to achieve the objectives

An obligation imposed on every Member State

to submit to the European Commission by the end of 2027 and every 2 years thereafter, a standalone national progress report on the implementation of its national policy framework in a legible and comprehensible form:

- Publication of the report by the European Commission

Analytics and reporting by Member States

By June 2024
and every 3 years thereafter

Member States assess how the development and functioning of charging points can facilitate the contribution of electric vehicles to the increased flexibility of the power system (including their share in the balancing market and their contributions to the increased use of electricity from renewable sources)

By March 31 of each successive year

Member States shall report to the EC the total aggregated charging power output, the number of commissioned public charging points and the number of registered battery electric and plug-in hybrid vehicles deployed on their territory on 31 December of the previous year

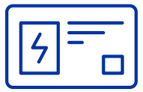
By June 30, 2024
and every 3 years thereafter

On the basis of input from transmission system operators and distribution system operators, the regulatory authority of a Member State shall assess the potential contribution of bidirectional charging to the reduction of user costs and system costs and penetration of renewable electricity into the electricity system (that assessment shall be made publicly available)

Identification codes and data sharing

IDRO

Every Member State shall **appoint an Identification Registration Organization** (“IDRO”) no later than **April 14, 2025**



- Competencies of IDRO:
  - → Issue of numbers to identify operators of public charging stations and charging service providers

- By April 14, 2025 the operators shall have to provide static and dynamic data concerning the alternative fuels infrastructure of their station using a dedicated application program interface (API) for free

- Scope of shared data:

  1) Static data for public charging points:
     1. Geographic location
     2. Number of connectors
     3. Number of parking spaces for persons with disabilities
     4. Contact information of the owner and operator of the charging station
     5. Business hours

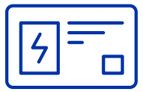
  2) Further static data for public charging points:
     1. Identification codes, at least of the operator of the charging point
     2. Type of connector
     3. Type of current (AC/DC)
     4. Maximum power output (kW) of the charging station
     5. Maximum power output (kW) of the charging point
     6. Compatibility with vehicle types

  3) Dynamic data for all public charging points
     1. Operational status (operational/out of order)
     2. Availability (in use / not in use)
     3. Ad hoc price
     4. Electricity supplied 100% from renewable sources (yes/no)

Identification codes and data sharing

IDRO

Every Member State shall **appoint an Identification Registration Organization** (“IDRO”) no later than **April 14, 2025**



- The obligation becomes effective by 14 Aprili, 2025
- By the end of 2024, Member States shall provide data in an open, non-discriminatory manner, to all data users such as:
  1. Public bodies
  2. Road administration bodies
  3. Road operators
  4. Operator of charging and refueling points
  5. Research organizations and NGOs
  6. Mobility service providers, (vii) e-roaming platforms
  7. Digital map providers
  8. Other parties interested in using the data to provide information, create services or conduct research or analyses regarding the alternative fuels infrastructure
- Establishment of a common access point by the European Commission by 2026, to be used as a data portal to facilitate access to data from various national access points

PUBLISHER

Polish Alternative Fuels Association (PSPA)

pspa.com.pl

EDITORIAL TEAM

Filip Opoka, Jan Wiśniewski

Łukasz Witkowski
Dyrektor Operacyjny PSPA

LEGAL PARTNER

Octo Legal

DATA AGGREGATION

F5A New Mobility Research and Consulting

GRAPHIC DESIGN AND TYPESETTING

Magda Furmanek

PARTNER

The European Association for Electromobility (AVERE)

avere.org

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