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Data on charging stations

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Outline

- 1) Regulation on the deployment of alternative fuels infrastructure:** Overview of main changes: definitions, targets, reporting, data provisions
- 2) European Alternative Fuels Observatory:** Data on charging infrastructure

Regulation on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU (AFIR)

- Overview of changes:
 - Changes in the scope and definition
 - Mandatory infrastructure deployment targets for road, maritime and aviation
 - Improving the quality of / user experience at electric recharging and hydrogen refuelling infrastructure
 - Technical specifications to improve interoperability
 - Reporting mechanisms to ensure that targets are met
- Will come into force on the 20th day after its publication in the official Journal, but date of application is 6 month later; will be binding in its entirety and directly applicable

Mandatory targets road

- **Electricity Recharging LDV (Art 3)**
 - Fleet based target, expressed in power installed (kW) per registered electric vehicle
 - Distance based target along TEN-T core and comprehensive network (maximum distance and power)
- **Electricity Recharging HDV (Art 4)**
 - Distance based target along TEN-T core and comprehensive network (maximum distance and power)
 - Safe and Secure parking areas (overnight recharging)
 - Urban nodes (in particular for urban delivery)
- **Hydrogen Refuelling, HDV / LDV (Art 6)**
 - Distance based target along TEN-T core network (maximum distance and capacity)
 - Urban nodes (in particular for urban delivery)
- **Liquified methane, limited until 2025 (Art 8)**

Art 3, Electric Recharging LDV

- **Fleet based target**

- 1.3 kW power output per BEV and 0.8 kW power output per PHEV
- Target to be met on 31 December of every year, starting from year after legislation comes into force
- “Sunset clause”: target no longer applies once share of BEV in national LDV fleet reaches 15%

- **Distance based target**

- TEN-T core, every 60 km in each direction:

- 400 kW power output (at least one 150 kW recharging point) by 31st December 2025
- 600 kW power output (at least two 150 kW recharging points) by 31st December 2027

- TEN-T comprehensive, every 60 km in each direction:

- 300 kW power output (at least one 150 kW recharging point) by 31st December 2027 on 50% of the network
- 300 kW power output (at least one 150 kW recharging point) by 31st December 2030 (100% of the network)
- 600 kW power output (at least two 150 kW recharging points) by 31st December 2035 (100% of the network)

- **Derogations (to be requested by Member States)**

- 50% reduced power output on roads with less than 8,500 LDV/day
- Increased distance of up to 100 km on roads with less than 3,000 LDV/day

Art 4, Electric Recharging HDV

- **By 31st December 2025, on at least 15% of TEN-T Core and Comprehensive network:**
 - Maximum 120 km between recharging pools
 - 1,400 kW power output, at least one 350 kW recharging point
- **By 31st December 2027, on at least 50% of TEN-T Core and Comprehensive network:**
 - Maximum 120 km between recharging pools
 - TEN-T Core: 2,800 kW output, at least two 350 kW recharging points
 - TEN-T Comprehensive: 1,400 kW output, at least one 350 kW recharging point
- **By 31st December 2030, on the whole TEN-T core and comprehensive network:**
 - Maximum 60 km between recharging pools on TEN-T Core, 100km on TEN-T Comprehensive
 - TEN-T Core: 3,600 kW output, at least two 350 kW recharging points
 - TEN-T Comprehensive: 1,400 kW output, at least one 350 kW recharging point
- **Derogations** (to be requested by Member States)
 - 50% reduced power output on roads with less than 2,000 HDV/day
 - Distance up to 100 km on TEN-T core roads with less than 800 HDV/day

Art 4, Electric Recharging HDV

Location based target

- **Recharging stations at Safe and secure Parking Areas:**
 - At least two 100 kW recharging stations at every safe and secure parking area by 2027
 - At least four 100 kW recharging stations at every safe and secure parking area by 2030
- **Recharging stations at Urban Nodes:**
 - Min. 900 kW installed power per urban node by 2025
 - Min. 1,800 kW installed power per urban node by 2030
 - Targets to be met through recharging stations with individual power output of min. 150 kW

Art 6, Hydrogen refuelling (LDV & HDV)

- **Location based target**
 - 1 refuelling station in every urban node by 2030 with 1 t/day capacity, 700 bars
- **Distance based target** (can be counted towards the target in urban nodes)
 - TEN-T core network, every 200 km serving both directions by 2030 (1 t/day capacity, 700 bars)
- **Derogations** (to be requested by Member States)
 - Reduced capacity to 500 kg/day on roads with less than 2,000 HDV/day
- **Trajectory and future development**
 - Member States shall set out a clear linear trajectory towards meeting the 2030 target under their national policy framework, outlining a clear indicative target for 2027
 - TEN-T comprehensive network as well as the deployment of refuelling stations serving liquified hydrogen will be analysed under the review foreseen for 2026

Reporting

- National Policy frameworks (Art 14)
 - Member States to draft National Policy Frameworks (draft by 1.1.2025, final version 1.1.2026)
 - Detailed Target setting in line with mandatory targets
 - Measures to support the roll out of that infrastructure
 - Development of detailed strategies for the use of clean fuels in waterborne transport and aviation
- National Reporting (Art 15)
 - National progress reports (details in annex I) every two years
 - Annual reporting on electric vehicle uptake and deployment of recharging points to ensure compliance with fleet based targets
- Assessment of the NPFs and NPRs (Art 17)
 - reports issued by the Commission: assessment report of the NPFs, assessment of the NPRs (recommendations);
 - information to be made publicly available and regularly updated

Progress Tracking (fleet based target) (Art 18)

- Member States shall annually submit data on:
 - Electric vehicles: Battery electric vehicles and PHEV
 - Recharging points:
 - Category 1 (AC): slow ($P < 7.4$ kW), medium (b. 7.4 kW and 22 kW), fast (>22 kW)
 - Category 2 (DC): slow ($P < 50$ kW), fast (b. 50 kW and 150 kW), level 1 ultra-fast (b. 150 kW and 350 kW), and level 2 ultra-fast (>350 kW),
 - Recharging infrastructure:
 - Number of recharging points (for each category)
 - Number of recharging stations (for each category)
 - Total aggregated power output

Data provisions (Art 20)

- Member States to appoint an Identification Registration Organisation ('IDRO')
- Operators of recharging and refuelling points to provide static and dynamic data through the National Access Points at no costs
 - Static: geographic location, number of connectors, no. of parkings for persons with disabilities, contact information, opening hours. For recharging only: identification code of operator, type of connector, current (DC or AC), max power output of station and point (kW), vehicle type compatibility.
 - Dynamic: operational status, availability, ad hoc price, 100% renewable electricity supply contract
- Member States to ensure non-discriminatory access to that data through their National Access Points (Directive 2010/40EU and delegated Regulation 2022/670)
- Common European Access point- as gateway facilitating the access to the data to be established by 2027
- Commission is empowered to adopt delegated acts for additional data types and implementing acts for data format/frequency/quality and for procedures to provide and exchange data

European Alternative Fuel Observatory

- Important tool to monitor the implementation of the Alternative Fuels Infrastructure Directive (2019/94/EU) / the proposed Alternative Fuels Infrastructure Regulation, as well as the Clean Vehicles Directive; will gradually include progress trackers, as the new legislation is implemented.
- EAFO 3.0 launched in March 2022
- Close collaboration with Eurostat to ensure more robust data quality
- Content:
 - Data & graphs on alternative fuel infrastructure and fleet, and measures: road, rail, maritime, IWW, aviation
 - Information for consumers
 - Information for policymakers
 - General information: methodology, glossary, sources
- Definitions and methodology: in line with **AFIR**

“Publicly accessible”

- Publicly Accessible recharging points
 - All **recharging points that are located in areas that are open to the general public**, incl. on-street, in publicly accessible parking lots, private retail or restaurant parkings, irrespective if the parking is reserved for clients or if parking fees apply
 - Non publicly accessible are only recharging points that are located in areas where **access is restricted to a limited, determinate circle of persons**, such as parking lots in office or apartment buildings, private depots, dedicated car-sharing parking lots, parking lots reserved for pre-registered hotel guests, sports club members etc.

- If publicly accessible



Article 5 and 18 conditions of AFIR apply:

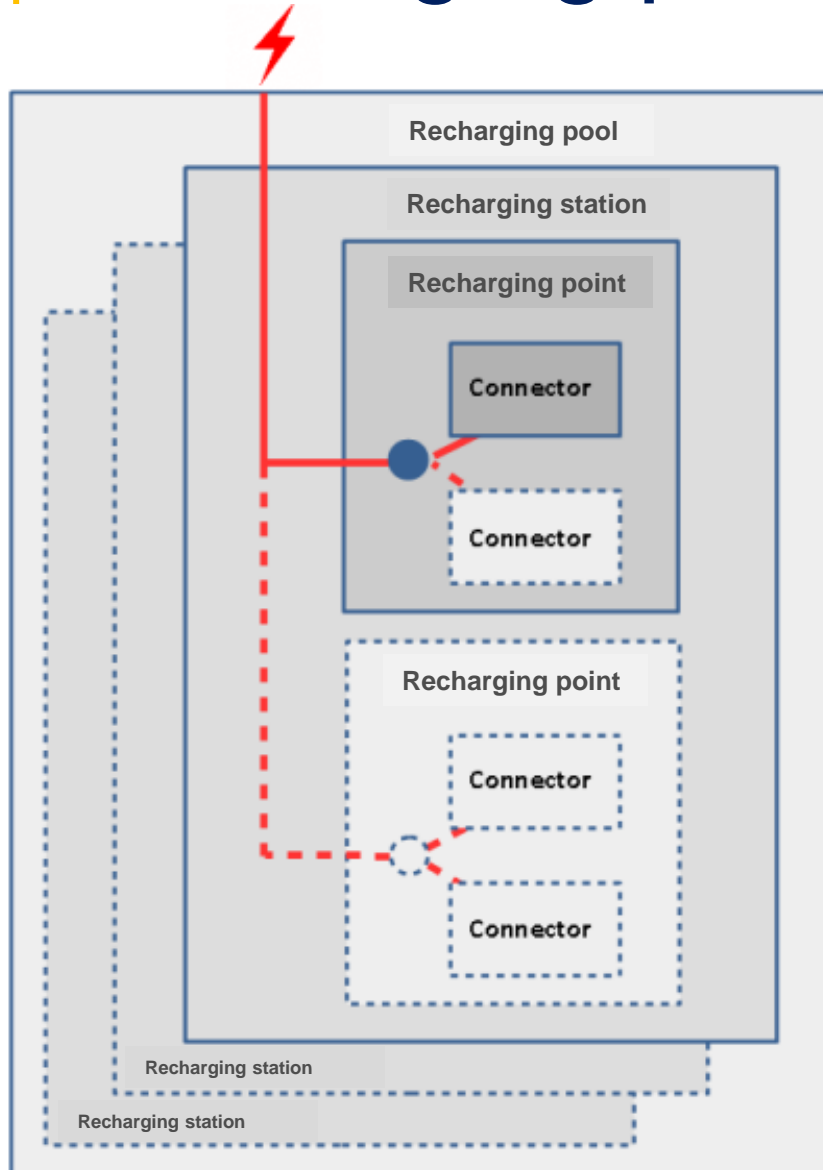
- Offer ad hoc payment
- Be digitally connected
- For AC: offer smart recharging
- For DC: offer fixed recharging cable
- Make static and dynamic data available

Recharging point, station or pool

Article 2:

- (44) ‘**recharging pool**’ means one or more recharging stations at a specific **location**;
- (45) ‘**recharging station**’ means a **single physical installation** at a specific location, consisting of one or more recharging points;
- (41) ‘**recharging point**’ means a **fixed or mobile interface** that allows for the transfer of electricity to an electric vehicle, which, whilst it may have one or several connectors to accommodate different connector types, is capable of recharging only one electric vehicle at a time and excludes devices with a power output less than or equal to 3,7 kW the primary purpose of which is not recharging electric vehicles.

Recharging point, station or pool



- A recharging pool can contain several recharging stations
- A recharging station can contain several recharging points
- A recharging point can contain several connectors
- Per recharging point, not more than one connector can be active (used for EV recharging) at a time

A recharging pool contains at least:

- 1 recharging station
- 1 recharging point
- 1 connector

Concept: Recharging point, station and pool

STATION

Physical installation

Total max. Power to all vehicles connected



POINT

One or more points per station

Connection to vehicle

Power of all recharging points = power of recharging station

AFIR use of Recharging point, station or pool

- ‘recharging pool’



Used mainly for **TEN-T deployment targets**: “along the TEN-T core network, publicly accessible recharging pools dedicated to light-duty vehicles ... are deployed in each direction of travel with a maximum distance of 60 km in-between them”

- ‘recharging station’



Used mainly for **Article 5 obligations**, when referring to conditions of the single physical installation

- ‘recharging point’



Also used for deployment targets (minimum individual installation), for Article 5 obligations, in context of standards, and **for the counting of recharging points**

The measure for counting Member States’ progress towards AFIR deployment targets are **publicly accessible recharging points**

AFIR Annex II - standard AC recharging points

1.1. Normal power recharging points for motor vehicles: alternating current (AC) normal power recharging points for electric vehicles shall be equipped, for interoperability purposes, **at least with socket outlets or vehicle connectors of Type 2** as described in standard EN 62196-2:2017.

1.2. High power recharging points for motor vehicles: – alternating current (AC) high power recharging points for electric vehicles shall be equipped, for interoperability purposes, **at least with connectors of Type 2** as described in standard EN 62196-2:2017;



The total number of AC recharging points is never higher than the total number of Type 2 connectors

AFIR Annex II - standard DC recharging points

1.2. direct current (DC) high power recharging points for electric vehicles shall be equipped, for interoperability purposes, **at least with connectors of the combined charging system 'Combo 2'** as described in standard EN 62196-3:2014.



The total number of DC recharging points is never higher than the total number of CCS connectors

AFIR Annex III: categorisation of recharging points

Category	Sub-category	Maximum power output	Definition pursuant to Article 2 of this Regulation
Category (AC)	Slow AC recharging point, single-phase	$P < 7.4 \text{ kW}$	Normal power recharging point
	Medium-speed AC recharging point, triple-phase	$7.4 \text{ kW} \leq P \leq 22 \text{ kW}$	
	Fast AC recharging point, triple-phase	$P > 22 \text{ kW}$	High power recharging point
Category (DC)	Slow DC recharging point	$P < 50 \text{ kW}$	
	Fast DC recharging point	$50 \text{ kW} \leq P < 150 \text{ kW}$	
	Level 1 - Ultra-fast DC recharging point	$150 \text{ kW} \leq P < 350 \text{ kW}$	
	Level 2 - Ultra-fast DC recharging point	$P \geq 350 \text{ kW}$	

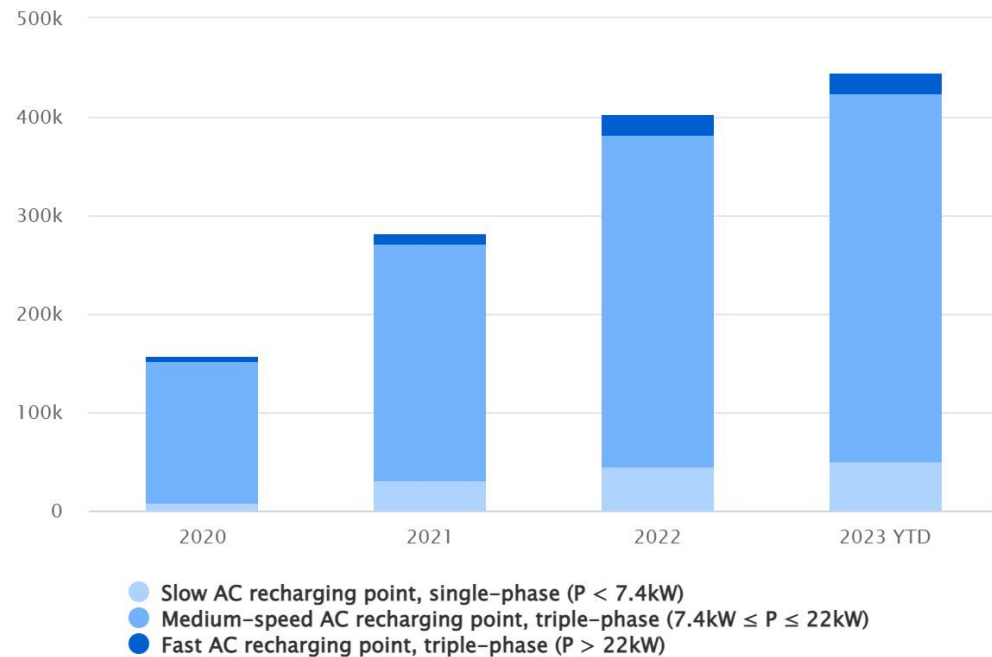
Categorisation used for:

- Member State reporting (progress tracking)
- EAFO counting

EAFO detailed counting

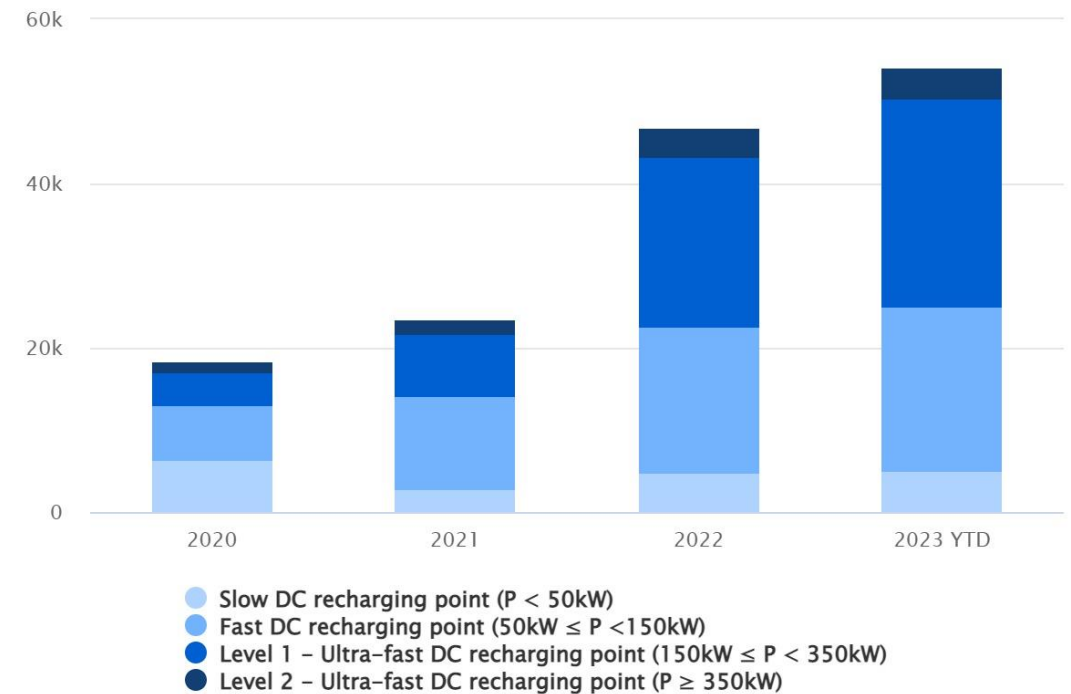
AC recharging points

Total number of publicly accessible AC recharging points, according to the AFIR categorization.



DC recharging points

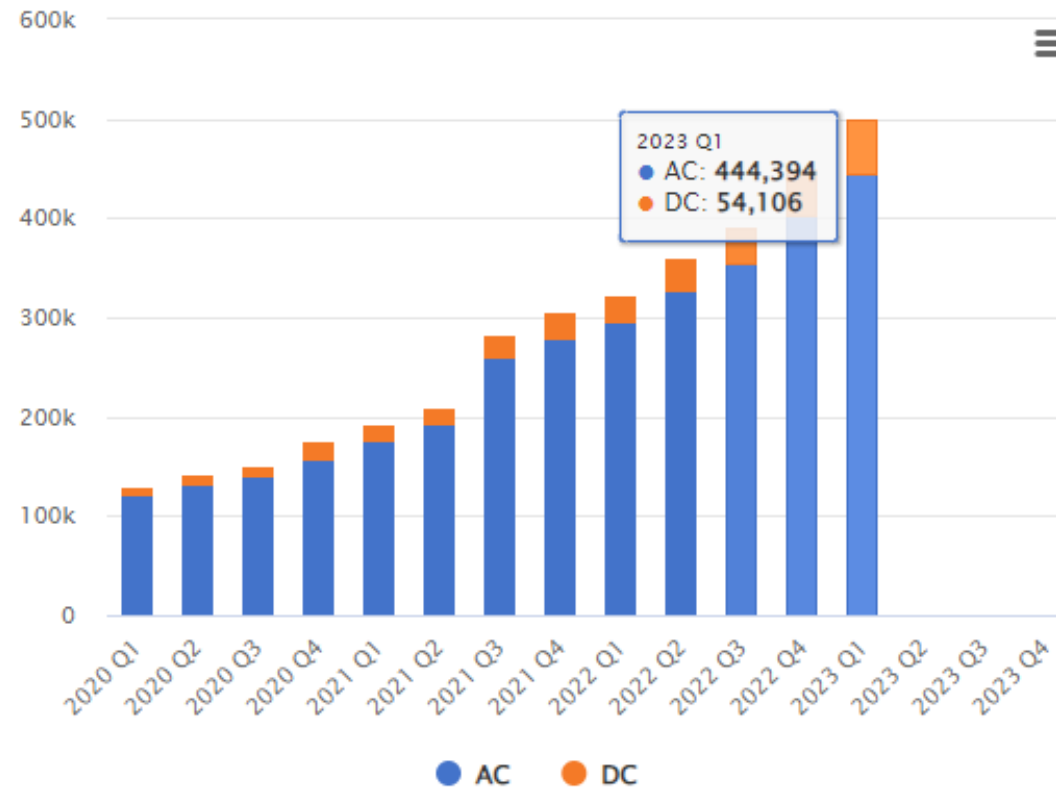
Total number of publicly accessible DC recharging points, according to the AFIR categorization.



EAFO aggregated counting

Recharging points (2020 - ...)

Total number of recharging points, according to the AFIR classification.





Thank you !

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