I

(Legislative acts)

REGULATIONS

REGULATION (EU) 2023/1804 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 13 September 2023

on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 91 thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee ([1]),

Having regard to the opinion of the Committee of the Regions ([2]),

Acting in accordance with the ordinary legislative procedure ([3]),

Whereas:

(1) Directive 2014/94/EU of the European Parliament and of the Council ([4]) laid down a framework for the deployment of alternative fuels infrastructure. The Commission Communication of 9 December 2020 entitled 'Sustainable and Smart Mobility Strategy – putting European transport on track for the future' points to the uneven development of recharging and refuelling infrastructure across the Union and the lack of interoperability and user friendliness. It notes that the absence of a clear common methodology for setting targets and adopting measures under the national policy frameworks required by Directive 2014/94/EU has led to a situation whereby the level of ambition in target setting and supporting policies differs greatly among Member States. Those differences have hindered the establishment of a comprehensive and complete network of alternative fuels infrastructure across the Union.

(2) Union law already set targets for renewable fuels. For example, Directive (EU) 2018/2001 of the European Parliament and of the Council ([5]) sets a market share target of 14 % of renewables in transport fuels.

([1]) OJ C 152, 6.4.2022, p. 138.
([2]) OJ C 270, 13.7.2022, p. 38.
([3]) Position of the European Parliament of 11 July 2023 (not yet published in the Official Journal) and decision of the Council of 25 July 2023.
([4]) Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure (OJ L 307, 28.10.2014, p. 1).
([5]) Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (OJ L 328, 21.12.2018, p. 82).

(3) Regulations (EU) 2019/631 ([6]) and (EU) 2019/1242 ([7]) of the European Parliament and of the Council already set CO_2 emission performance standards for new passenger cars and for new light-duty vehicles, as well as for certain new heavy-duty vehicles. Those Regulations should accelerate the uptake of, in particular, zero-emission vehicles and thereby create demand for recharging and refuelling infrastructure. It is important that Regulations (EU) 2019/631 and (EU) 2019/1242 and this Regulation ensure a coherent framework for the use and deployment of alternative fuels in road transport.

(4) Regulation of the European Parliament and of the Council on ensuring a level playing field for sustainable air transport and Regulation (EU) 2023/1805 of the European Parliament and of the Council ([8]) should boost the production and uptake of sustainable alternative fuels in aviation and maritime transport. While the fuel use requirements for sustainable aviation fuels can largely rely on the existing refuelling infrastructure, investments are needed for the electricity supply of stationary aircraft. Regulation (EU) 2023/1805 sets requirements in particular for the use of on-shore power that can only be fulfilled if an adequate level of shore-side electricity supply is deployed in the trans-European transport network (TEN-T) ports. However, those Regulations do not contain any requirements concerning fuel infrastructure, although such requirements are a prerequisite for achieving the targets.

(5) Therefore, all modes of transport should be addressed in a single legal act which should take into account a variety of alternative fuels. The use of zero-emission powertrain technologies is at different stages of maturity in the different modes of transport and in the different Member States. In particular, in the road sector, a rapid uptake of battery electric vehicles and plug-in hybrid vehicles is taking place. Hydrogen-powered vehicles are available on the market, as well. In addition, smaller hydrogen-powered vessels and battery electric vessels and hydrogen-powered trains are currently being deployed in different projects and in first commercial operations, with full commercial roll-out expected in the coming years. In contrast, the aviation and waterborne sectors continue to be dependent on liquid and gaseous fuels, as zero- and low-emission powertrain solutions are expected to enter the market only by approximately 2030 or even later, in particular for the aviation sector, with full commercialisation taking its time. The use of fossil gaseous or liquid fuels is only possible if it is clearly embedded into a clear decarbonisation pathway that is in line with the long-term objective of climate neutrality in the Union, requiring increasing blending with or replacement by renewable fuels such as bio-methane, advanced biofuels or renewable and low-carbon synthetic, paraffinic, gaseous and liquid fuels.

(6) Such biofuels, synthetic and paraffinic fuels, substituting diesel, petrol and jet fuels, can be produced from different feedstock and can be blended into fossil fuels at very high blending ratios. Those fuels are especially important for the reduction of greenhouse gas emissions in the aviation and maritime transport sectors, in which electrification is expected to be slower. Those fuels are technically compatible with the current vehicle technology, with minor adaptations. Moreover, renewable methanol can, among other things, be used for inland navigation and short-sea shipping. Synthetic and paraffinic fuels have the potential to reduce the use of fossil fuel sources in the transport sector. All of those fuels can be distributed, stored and used with the existing infrastructure or, where necessary, with infrastructure of the same kind.

(7) Liquefied methane is likely to continue to play a role in maritime transport, where no economically viable zero-emission powertrain technology is currently available. However, liquefied methane from fossil sources should be phased out in maritime transport as soon as possible and substituted by more sustainable alternatives. The Smart and Sustainable Mobility Strategy points to zero-emission seagoing ships becoming market ready by 2030 and projects for such ships are already underway. Fleet conversion is expected to take place gradually due to the long lifetime of seagoing ships. In contrast with the situation in maritime transport, in inland waterway transport, with normally smaller vessels and shorter distances, zero-emission powertrain technologies, such as for hydrogen and electricity, are becoming mature technologies and are therefore expected to enter the market more quickly. However, those zero-emission powertrain technologies could play an important role for maritime transport in

([6]) Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO_2 emission performance standards for new passenger cars and for new light commercial vehicles, and repealing Regulations (EC) No 443/2009 and (EU) No 510/2011 (OJ L 111, 25.4.2019, p. 13).

([7]) Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO_2 emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (OJ L 198, 25.7.2019, p. 202).

([8]) Regulation (EU) 2023/1805 of the European Parliament and of the Council of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC (See page 48 of this Official Journal).

terms of creating scale regarding zero-emission propulsion solutions. Liquefied methane is expected to no longer play a significant role in that sector. Transport fuels such as liquefied methane need increasingly to be decarbonised by blending or by being substituted with, for example, liquefied biomethane or renewable and low-carbon synthetic gaseous e-fuels (e-gas). The same infrastructure can be used for those decarbonised fuels as for fossil gaseous fuels, thereby allowing for a gradual shift towards decarbonised fuels.

(8) In the heavy-duty road transport sector, technologies for liquefied methane driven trucks are fully mature. The common scenarios underpinning the Sustainable and Smart Mobility Strategy and the Commission Communication of 17 September 2020 entitled 'Stepping up Europe's 2030 climate ambition - Investing in a climate-neutral future for the benefit of our people' (the 'Climate Target Plan') as well as the revised 'Fit for 55' package modelling scenarios suggest a limited role for gaseous fuels, that will increasingly be decarbonised in heavy-duty road transport and especially in the long-haul segment. Furthermore, liquefied petroleum gas (LPG) and compressed natural gas (CNG) vehicles, for which sufficient infrastructure network already exists across the Union are expected gradually to be replaced by zero-emission powertrains and therefore only a limited targeted policy for liquefied methane infrastructure deployment that can equally supply decarbonised fuels is considered necessary to close remaining gaps in the main networks.

(9) This Regulation should lay down mandatory minimum targets for the deployment of publicly accessible recharging and refuelling infrastructures for road vehicles.

(10) A recharging station is a physical installation for the recharging of electric vehicles. Every recharging station has a theoretical maximum power output, expressed in kW, and has at least one recharging point that can serve only one vehicle at a time. The number of recharging points at a recharging station determines the number of vehicles that can be recharged at that station at any given time. Where more than one vehicle recharges at a recharging station at a given time, the maximum power output is distributed to the different recharging points in such a way that the power provided at each individual recharging point is lower than the power output of that recharging station. A recharging pool consists of one or more recharging stations at a specific location, including, as the case may be, the dedicated parking places adjacent to them. With regard to the targets set out in this Regulation for recharging pools, the minimum power output required for recharging pools could be provided by one or more recharging stations.

(11) Publicly accessible recharging or refuelling points include, for example, privately owned recharging or refuelling points accessible to the public that are located on public or private property, such as public parking areas or parking areas of supermarkets. A recharging or refuelling point located on private property that is accessible to the public should be considered to be publicly accessible also in cases where access is restricted to a certain general group of users, for example to clients. Recharging or refuelling points for car-sharing schemes should only be considered to be publicly accessible if they explicitly allow access for third party users. Recharging or refuelling points located on private property to which access is restricted to a limited and determinate group of persons, such as parking places in an office building to which only employees or authorised persons have access, should not be considered to be publicly accessible recharging or refuelling points.

(12) With a view to increasing consumer convenience, it is important that operators of publicly accessible recharging or refuelling points ensure that the opening hours of such points and uptime of their services fully meet the needs of end users.

(13) The deployment of publicly accessible recharging infrastructure for light-duty electric vehicles has been uneven across the Union. The continued uneven distribution of publicly accessible recharging infrastructure would jeopardise the uptake of light-duty electric vehicles, thereby limiting connectivity across the Union. Continuing divergence in policy ambitions and approaches at national level hinders the much-needed sustainable transition of the transport sector and is not conducive to creating the long-term certainty needed for substantive market investment. Mandatory minimum targets for Member States at national level should therefore provide policy orientations and should complement national policy frameworks. That approach should combine national fleet-based targets with distance-based targets for the TEN-T. National fleet-based targets should ensure that uptake of light-duty electric vehicles in each Member State is matched by the deployment of sufficient publicly accessible recharging infrastructure. Distance-based targets for the TEN-T network should ensure full coverage of recharging points along the Union's main road networks and thereby ensure easy and seamless travel throughout the Union.

(14) National fleet-based targets should be established on the basis of the total number of electric vehicles registered in the Member State concerned. Those targets should be established on the basis of a common methodology that accounts for technological developments such as the increased driving range of electric vehicles or an increase in the number of fast recharging points, at which a greater number of electric vehicles can recharge than at a normal-power recharging point in a given period. That common methodology should also take into account the different recharging patterns of battery electric vehicles and plug-in hybrid vehicles. A methodology that sets out national fleet-based targets according to the total maximum power output of the publicly accessible recharging infrastructure would allow for flexibility in the implementation of different recharging technologies in Member States.

(15) Implementation by Member States of the national fleet-based targets should ensure that a sufficient number of publicly accessible recharging points is installed in a manner that also guarantees the accessibility of recharging points in their entire territory, in particular at public transport stations, such as port passenger terminals, airports or railway stations. Deployment of those publicly accessible recharging points is particularly important in residential areas where off-street parking is scarce and in areas where, typically, vehicles are parked for extended periods of time. A sufficient number of publicly accessible fast recharging points dedicated to light-duty electric vehicles should also be deployed to increase consumer convenience, in particular, across the TEN-T network to ensure full cross-border connectivity and to enable electric vehicles to circulate throughout the Union. It is important that the deployment of publicly accessible recharging infrastructure primarily be the result of private market investment. However, Member States should, subject to Union State aid rules, be able to support the deployment of the necessary publicly accessible recharging infrastructure in cases where, due to market conditions, public support is needed before a fully competitive market is established.

(16) Depending on the specific circumstances in a Member State, the requirements in terms of the level of fixed total power output to be provided through publicly accessible recharging stations for each light-duty battery electric vehicle registered in that Member State might no longer be justified where those requirements could have adverse effects by discouraging private investments or, in particular, by resulting in oversupply in the medium term. The risk of such adverse effects could arise due to the installation of a high number of private recharging points. The needs of users or the use-rate of publicly accessible recharging stations might be lower compared to initial assumptions, with the consequence that the total power output available through publicly accessible recharging stations reaches a disproportionately high level compared to the actual use of such stations. In such cases, the Member State concerned should be able to request authorisation to apply lower requirements than the ones laid down in this Regulation in terms of level of total power output or to cease to apply such requirements. For the Member State to be able to make such a request, the share of light-duty battery electric vehicles compared to the total fleet of light-duty vehicles registered in the Member State should have reached at least 15 % and the Member State should duly justify its request.

(17) As part of the review of this Regulation, it is important that the Commission assess the need to include requirements for recharging infrastructure to serve electrically power-assisted bicycles and L-category vehicles such as powered electric bicycles and electric mopeds, and in particular the opportunity to equip recharging infrastructure with a household power socket that makes it possible for such vehicles to be easily charged, since they represent a mode of transport that can help further reduce CO_2 emissions and air pollution.

(18) Heavy-duty electric vehicles need a distinctively different recharging infrastructure than light-duty electric vehicles. Currently, however, there is almost no available publicly accessible infrastructure for heavy-duty electric vehicles in the Union and the deployment of such infrastructure needs to be accelerated. A combined approach of distance-based targets along the TEN-T network, with appropriate distinction between the TEN-T core network and TEN-T comprehensive network, targets for overnight recharging infrastructure and targets at urban nodes should ensure that a sufficient publicly accessible recharging infrastructure coverage for heavy-duty electric vehicles is established throughout the Union to support the expected market-share increase of heavy-duty battery electric vehicles.

(19) A sufficient number of publicly accessible fast recharging points dedicated to heavy-duty vehicles should be deployed along the TEN-T network to ensure full connectivity throughout the Union. That infrastructure should have sufficient power output for heavy-duty vehicles to be recharged within the driver's legal break time. In order to take into account the time needed for the planning, design and implementation of recharging infrastructure, which might include extending or upgrading the electricity grid in certain areas, land acquisition, environmental authorisations, and, if necessary, the awarding of public contracts, and in order to adapt to the progressive uptake of heavy-duty electric vehicles, publicly accessible recharging infrastructure for such vehicles should be deployed progressively from 2025 with a view to covering the entire TEN-T network by 2030.

(20) For the purposes of deployment of recharging infrastructure along the TEN-T road network, all recharging stations to be deployed along the TEN-T road network should be located on the TEN-T road network or within 3 km driving distance from the nearest exit of a TEN-T road.

(21) Some Member States are in the process of upgrading sections of the TEN-T network in order to meet the requirements laid down in Regulation (EU) No 1315/2013 of the European Parliament and of the Council ([9]). In doing so, Member States should strive to ensure that the requirements for the deployment of recharging and refuelling infrastructure along the TEN-T network set out in this Regulation are implemented in a comprehensive manner in order to avoid stranded assets and in a way that ensures the coordinated implementation of Regulation (EU) No 1315/2013 and this Regulation.

(22) New recharging infrastructure standards for heavy-duty electric vehicles are currently being developed. Therefore, the Commission should consider increasing the individual power output of recharging stations at recharging pools once the new common technical specifications are available.

(23) The recharging infrastructure along the TEN-T network should be complemented with publicly accessible fast recharging infrastructure in urban nodes. That infrastructure is necessary in particular for providing charging opportunities for delivery trucks and for destination charging for long-haul trucks. Recharging points for light-duty electric vehicles in urban areas, however, should fall within the national fleet-based target. In addition to fast recharging points along the TEN-T network and in urban nodes, heavy-duty electric vehicles should also be able to use publicly accessible recharging infrastructure for overnight recharging along the main transport network to specifically support the electrification of the long-haul sector.

(24) In order to avoid investments that would be disproportionate compared to the traffic volumes on some roads of the TEN-T network in cases where the deployment of recharging infrastructure cannot be justified in socio-economic cost-benefit terms, Member States should be able to provide that one publicly accessible recharging pool serves both directions of travel, provided that the other applicable requirements are met in terms of the maximum distance between recharging pools, the total power output of the recharging pool and the number of recharging points at the recharging pools that are applicable for a single direction of travel. Alternatively, Member States should be able to reduce the total power output of the recharging pools dedicated to light-duty electric vehicles or heavy-duty electric vehicles located along the TEN-T road network with low traffic volumes of respectively light-duty electric vehicles or heavy-duty electric vehicles. For the same purpose, Member States should also be able to allow a higher maximum distance between the publicly accessible recharging pools dedicated to light-duty electric vehicles or heavy-duty electric vehicles along roads of the TEN-T core network with very low traffic volumes.

(25) Given the insular character of Cyprus, the absence of any land connection with other Member States and the mainland and the limited extent of its TEN-T road network, the long-distance heavy-duty traffic circulating in that Member State is limited. In addition, given the limited daily mileage of heavy-duty electric vehicles in Cyprus, their recharging needs will mostly be covered by overnight recharging capacities in private locations, such as depots. Cyprus would therefore be under a disproportionate and unnecessary obligation if it had to meet the requirements set out in this Regulation concerning minimum coverage of publicly accessible recharging pools dedicated to heavy-duty vehicles in its territory in terms of the level of total power output of such recharging pools located along the

([9]) Regulation (EU) No 1315/2013 of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU (OJ L 348, 20.12.2013, p. 1).

TEN-T network and the maximum distance between those recharging pools. Consequently, Cyprus should be able to submit to the Commission a reasoned request for authorisation to apply lower requirements in that respect, provided that such lower requirements would not impede the circulation of heavy-duty electric vehicles in that Member State.

(26) Owners of electric vehicles are expected to make use to a large extent of recharging points at their own premises or in collective parking places in residential and non-residential buildings. While the deployment of ducting infrastructure and of recharging points in such buildings is regulated by Directive 2010/31/EU of the European Parliament and of the Council ([10]), it is important that Member States take into account the availability of such private infrastructure when planning the deployment of publicly accessible recharging points.

(27) The deployment of recharging infrastructure for heavy-duty electric vehicles is equally important in private locations that are not accessible to public, such as in private depots and at logistics centres to ensure overnight and destination charging. Public authorities should consider taking measures in the context of setting up their revised national policy frameworks to ensure that appropriate infrastructure is provided for overnight and destination charging for heavy-duty electric vehicles.

(28) In accordance with the principles laid down in the Commission Communication of 23 March 2017 entitled 'European Interoperability Framework – Implementation Strategy', the possibility to develop advanced digital services, including contract-based payment solutions, and to ensure transparent user information by digital means depends on the deployment of digitally connected and smart recharging points that support the creation of a digitally connected and interoperable infrastructure. Those smart recharging points should comprise a set of physical attributes and technical specifications (hardware and software) that are necessary for sending and receiving data in real-time and enabling the flow of information between market actors that are dependent on those data for fully developing the recharging experience, including recharging point operators, mobility service providers, e-roaming platforms, distribution systems operators and, ultimately, end users.

(29) Smart metering systems as defined in Directive (EU) 2019/944 of the European Parliament and of the Council ([11]) enable real-time data to be produced, which is needed to ensure the stability of the electricity grid and to encourage rational use of recharging services. By providing energy metering in real-time and accurate and transparent information on cost, the smart metering systems encourage, in combination with smart recharging points, recharging at times of low general electricity demand and low energy prices. The use of smart metering systems in combination with smart recharging points can optimise recharging, with benefits for the electricity system and for the end user. Member States should encourage the use of smart metering systems for the recharging of electric vehicles at publicly accessible recharging stations, where technically feasible and economically reasonable, and should ensure that those systems comply with the requirements laid down in Article 20 of Directive (EU) 2019/944.

(30) The increasing number of electric vehicles in road, rail, maritime and other transport modes will require recharging operations to be optimised and managed in such a way that does not cause congestion and takes full advantage of the availability of renewable electricity and low electricity prices in the system. Smart recharging in particular can facilitate the further integration of electric vehicles into the electricity system as it enables a demand response through aggregation. System integration can be further facilitated through bidirectional recharging (vehicle-to-grid), while smart and bi-directional recharging can also reduce recharging costs for the consumer. All recharging points built or renovated after 13 April 2024 should therefore support smart recharging. In addition, communication standards supporting smart and bidirectional recharging should be adopted to ensure interoperability.

([10]) Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings (OJ L 153, 18.6.2010, p. 13).

([11]) Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (OJ L 158, 14.6.2019, p. 125).

(31) The development of on-grid and off-grid infrastructure for electric vehicles, the interaction of that infrastructure with the electricity system, and the rights and responsibilities assigned to the different actors in the electric mobility market have to be consistent with the principles established by Directive (EU) 2019/944. In that context, distribution system operators should cooperate on a non-discriminatory basis with any person establishing or operating publicly accessible recharging points. The access of Union electricity suppliers to recharging points should be without prejudice to the derogations provided for in Article 66 of Directive (EU) 2019/944.

(32) The establishment and operation of recharging points for electric vehicles should be developed as a competitive market with open access to all parties interested in rolling-out or operating recharging infrastructure. In view of the limited alternative locations for recharging points for electric vehicles on motorways, existing motorway concessions such as for conventional refuelling stations or rest areas are a particular cause for concern, since they can run for very long periods or, sometimes, even lack a specific end-date altogether. Member States should seek, to the extent possible and in compliance with Directive 2014/23/EU of the European Parliament and of the Council ([12]), to competitively award new concessions specifically for recharging stations on or adjacent to existing motorway rest areas in order to prevent the encroachment of green spaces, as well as to limit deployment costs and to enable new market entrants.

(33) Price transparency is crucial to ensuring seamless and easy recharging and refuelling. Users of alternative fuel vehicles should be provided with accurate price information before the start of the recharging or refuelling session. The price should be communicated in a clearly structured manner to allow end users to identify the different price components charged by the operator when calculating the price of a recharging or refuelling session and to anticipate the total cost. The operators of recharging stations should also be allowed to charge additional fees with a view, inter alia, to avoiding blocking the recharging point from being used by other users, as long as those fees are clearly indicated and communicated before the start of the recharging session. If the price for the recharging on an ad hoc basis is provided on a dedicated webpage, it should be clearly provided on the same webpage as the one used for the payment of the session. Laying down requirements for operators and mobility service providers would provide guarantees and predictability for consumers and thus contribute to ensuring confidence during the initial stages of uptake of electric mobility. It would also encourage the rapid uptake of battery electric vehicles and hydrogen-powered vehicles, which is essential for achieving the increased climate ambitions of the Union and the priorities set out in Commission Communication of 11 December 2019 entitled 'The European Green Deal'. Prices should be reasonable and should not exceed the costs incurred plus a reasonable profit margin. Those price requirements are without prejudice to the right of Member States to determine the applicable unit price of the electricity charged from a recharging station in accordance with Directive 98/6/EC of the European Parliament and of the Council ([13]).

(34) New services emerge over time in support of the use of electric vehicles. Incentives provided by Member States, as well as binding measures adopted by them, such as mandatory roaming capability on designated recharging points, have played a significant role in the development of such new services. Entities offering those new services, such as mobility service providers, should be able to operate under fair market conditions. In particular, operators of recharging points should not give unduly preferential treatment to some mobility service providers, for instance through unjustified price differentiation, that may impede competition and ultimately lead to higher prices for consumers. In order to ensure the transition to new services and to ensure that users of such vehicles can easily and without hindrance use recharging infrastructure everywhere in the Union, Member States should monitor the development of the recharging market. When reviewing this Regulation, the Commission should take action where required by market developments such as limitations of services for end users, services misguiding consumers and hampering price transparency, or business practices that may limit competition.

(35) Hydrogen-powered vehicles have at present very low market penetration rates. However, a deployment of sufficient hydrogen refuelling infrastructure is essential in order to make large-scale use of hydrogen-powered vehicles possible as envisaged in the Commission Communication of 8 July 2020 entitled 'A hydrogen strategy for a climate-neutral Europe'. Currently, hydrogen refuelling points are only deployed in a few Member States and are largely unsuitable for heavy-duty vehicles. It is therefore not possible for hydrogen-powered vehicles to circulate throughout the Union. Mandatory deployment targets for publicly accessible hydrogen refuelling points should ensure a sufficiently

([12]) Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts (OJ L 94, 28.3.2014, p. 1).

([13]) Directive 98/6/EC of the European Parliament and of the Council of 16 February 1998 on consumer protection in the indication of the prices of products offered to consumers (OJ L 80, 18.3.1998, p. 27).

dense network of hydrogen refuelling points across the TEN-T core network to allow for the seamless travel of hydrogen-powered light-duty and heavy-duty vehicles throughout the Union. For the purposes of deployment of hydrogen refuelling infrastructure along the TEN-T network, all hydrogen refuelling stations to be deployed along the TEN-T road network should be located on the TEN-T road network or within 10 km driving distance from the nearest exit of a TEN-T road.

(36) Users of alternative fuel vehicles should be able to recharge or refuel on an ad hoc basis and pay easily and conveniently at all publicly accessible recharging and refuelling points, without the need to enter into a contract with the operator of the recharging or refuelling point or a mobility service provider. Therefore, for recharging or refuelling on an ad hoc basis, all publicly accessible recharging and refuelling points should accept payment instruments that are widely used in the Union, and in particular electronic payments through terminals and devices used for payment services. As regards infrastructure deployed before the date of application of this Regulation, the application of those requirements should be deferred. That ad hoc payment method should always be available to consumers, even when contract-based payments are offered at the recharging or refuelling point.

(37) Regardless of the brand of their vehicle, end users should be able to access and use publicly accessible recharging stations in a user-friendly and non-discriminatory way.

(38) Transport infrastructure should allow seamless mobility and accessibility for all users, including older persons, persons with reduced mobility and persons with disabilities. In principle, the location of all recharging and refuelling stations, as well as the recharging and refuelling stations themselves, should be designed in such a way that they are accessible to and user-friendly for as much of the public as possible, in particular older persons, persons with reduced mobility and persons with disabilities. This should include, for example, providing sufficient space around the parking place, ensuring that the recharging station is not installed on a kerbed surface, ensuring that the buttons or screen of the recharging station are at an appropriate height and the weight of the recharging and refuelling cables is such that persons with limited strength can handle them with ease. In addition, the user interface of the related recharging stations should be accessible. In that sense, the accessibility requirements set out in Directive (EU) 2019/882 of the European Parliament and of the Council ([14]) should be applicable to recharging and refuelling infrastructure.

(39) The safety and security of users, particularly at unattended recharging stations, could be addressed by equipping the recharging stations with emergency buttons, displaying emergency services contact information, ensuring adequate lighting or by any other appropriate measures.

(40) Hydrogen-powered vehicles should be able to refuel at or close to the destination, which is usually located in an urban area. To ensure that publicly accessible destination refuelling is possible at least in the main urban areas, such hydrogen refuelling stations should be provided for in all urban nodes as defined in Regulation (EU) No 1315/2013. Within the urban nodes, public authorities should consider deploying the hydrogen refuelling stations within multimodal hubs, as such hubs are a typical destination for heavy-duty vehicles and because they could also supply hydrogen to other transport modes, such as rail and inland shipping. It should be possible for one publicly accessible hydrogen refuelling station located within an urban node to be taken into account to fulfil the TEN-T requirement, provided the capacity target is achieved.

(41) At this early stage of market deployment there is still a degree of uncertainty with regard to the kind of vehicles that will come onto the market and to the kind of technologies that will be widely used. In the hydrogen strategy for a climate-neutral Europe, the heavy-duty segment was identified as the most likely segment for the early mass deployment of hydrogen-powered vehicles. Therefore, hydrogen refuelling infrastructure should focus on that segment initially, while also allowing light-duty vehicles to fuel at publicly accessible hydrogen refuelling stations. To ensure interoperability, all publicly accessible hydrogen stations should at least serve gaseous hydrogen at 700 bar. The roll out of the infrastructure should also take into account the emergence of new technologies, such as liquid hydrogen technology, that allow for a larger range for heavy-duty vehicles and are expected to be the preferred technology choice of some vehicle manufacturers.

([14]) Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services (OJ L 151, 7.6.2019, p. 70).

(42) The development of new technologies will require coordination among all stakeholders. For example, the Clean Hydrogen Joint Undertaking, set up by Council Regulation (EU) 2021/2085 ([15]), should also be used with a view to facilitating and leveraging private funding so that the relevant targets identified in this Regulation can be reached.

(43) A number of liquefied methane refuelling points are established in the Union, already providing a backbone for the circulation of liquefied methane driven heavy-duty vehicles. The TEN-T core network should remain the basis for the deployment of liquefied methane infrastructure as it covers the main traffic flows and allows cross-border connectivity throughout the Union. Directive 2014/94/EU recommended that such refuelling points be deployed every 400 km along the TEN-T core network. However, the existence of a limited number of gaps along the network has prevented that target from being reached. Member States should reach that target and fill the remaining gaps by 2025, after which the target should cease to apply.

(44) For the purposes of this Regulation, the term 'liquefied methane' should be understood to mean 'LNG, liquefied biogas or synthetic liquefied methane, including blends of these fuels'. The use of the defined term 'liquefied methane' does not alter the definition or composition of the separate fuels (LNG, liquefied biogas or synthetic liquefied methane), as defined in other Union legal acts.

(45) Shore-side electricity facilities, either fixed or mobile, can serve maritime transport and inland navigation in providing a clean power supply and can contribute to reducing the environmental, climate and health impact of seagoing ships and inland waterway vessels, in particular in terms of air quality for urban areas surrounding ports. Under Regulation (EU) 2023/1805 ship operators of seagoing container ships and seagoing passenger ships are to reduce the amount of emissions produced by their ships while moored at the quayside. Mandatory deployment targets should ensure that the sector finds sufficient shore-side electricity supply for ships that are moored at the quayside in TEN-T core maritime ports and TEN-T comprehensive maritime ports to comply with those requirements. Therefore, it is important to lay down clear targets for shore-side electricity infrastructure deployment in TEN-T ports. In view of the fact that Member States have different governance models for ports, in order to reach those targets, Member States should be able to decide on the best way for them in which to deploy infrastructure within their ports and in the different terminals according to their needs. It is important that within ports, and where relevant between terminals, infrastructure be deployed where the maximum return on investment and occupancy rate result in the highest environmental benefits in terms of greenhouse gas emissions reductions and air pollution reductions.

(46) The planning, development and deployment of shore-side electricity supply for seagoing ships requires a coordinated approach to match supply and demand. Therefore, all public and private stakeholders on both the ship side and the port side, as well as any other relevant market actors, should coordinate to allow for smooth operation on an everyday basis.

(47) It is important to avoid stranded assets and to make sure that the public and private investments that are made today are future-proof and contribute to the transition to climate neutrality as set out in the European Green Deal. The deployment of shore-side electricity supply in maritime ports has to be seen together with the current and future deployment of equivalent alternative zero-greenhouse gas emissions technologies and zero-pollution technologies, in particular those technologies that deliver emission and pollution reductions both at berth and during navigation.

(48) As a priority, seagoing container ships and seagoing passenger ships, being the ship categories which produce the highest amount of emissions per ship while moored at the quayside, should be provided with a shore-side electricity supply. In order to take into account the power demand characteristics of different seagoing passenger ships moored at the quayside, as well as port operational characteristics, it is necessary to distinguish between the seagoing passenger ship requirements for ro-ro passenger ships and high-speed passenger crafts on the one hand, and those for other seagoing passenger ships, on the other.

([15]) Council Regulation (EU) 2021/2085 of 19 November 2021 establishing the Joint Undertakings under Horizon Europe and repealing Regulations (EC) No 219/2007, (EU) No 557/2014, (EU) No 558/2014, (EU) No 559/2014, (EU) No 560/2014, (EU) No 561/2014 and (EU) No 642/2014 (OJ L 427, 30.11.2021, p. 17).

(49) The mandatory deployment targets should take into account the types of vessels served and traffic volumes of maritime ports. In order to avoid the installation of capacity that will be underused, maritime ports with low traffic volumes of certain ship categories based on the average annual number of port calls should not be subject to the mandatory deployment targets for the corresponding ship categories. Similarly, the mandatory targets should not aim to target maximum demand, but a sufficiently high volume, in order to avoid underused capacity and to take account of port operational characteristics.

(50) When determining the number of the port calls, port calls of short duration, port calls of ships that use zero-emission technologies, unscheduled port calls for reasons of safety or saving lives at sea, port calls under exceptional circumstances requiring the use of on-board energy generation, port calls under emergency situations that represent immediate risk to life, the ship or the environment or port calls for other reasons of force majeure should not be taken into account.

(51) Maritime transport is an important factor in the cohesion and economic development of islands and the outermost regions of the Union, as well as for Ceuta and Melilla. Electricity production capacity in those islands, regions and territories may not always be sufficient to account for the power demand required to support the provision of shore-side electricity supply. In such cases, those islands, regions and territories are to be exempted from the requirement to provide shore-side electricity supply unless and until such an electrical connection with the mainland or neighbouring countries, as the case may be, has been completed or there is sufficient locally generated capacity from non-fossil energy sources.

(52) An appropriate number of refuelling points for liquefied methane in TEN-T core maritime ports should be available by 2025. The deployment of that infrastructure should be driven by market demand. Refuelling points for liquefied methane include liquefied methane terminals, tanks, tank truck trailers, truck tankers, mobile containers, bunker vessels and barges.

(53) Installations providing shore-side electricity supply should also be deployed in inland waterway ports of the TEN-T network.

(54) The use of an external electricity supply should replace the use of the engines when aircraft are stationary at airports. This should reduce pollutant and noise emissions, improve air quality and reduce the impact of aircraft on climate change. Therefore, for all commercial transport operations, an external electricity supply should be provided while aircraft are parked at the aircraft contact stands or aircraft remote stands at airports of the TEN-T network. The external electricity supply to aircraft could be ensured by fixed or mobile ground power units, both at aircraft contact stands and aircraft remote stands. While aircraft should be able to make use of external electricity supply at all aircraft contact stands and aircraft remote stands used for commercial air transport operations, it is not necessary for each stand to be equipped with a fixed or mobile ground power unit, since a single ground power unit, whether fixed or mobile, is capable of serving multiple stands and of being deployed to meet operational needs.

(55) When ensuring that stationary aircraft are provided with access to an electricity supply in airports, Member States should, where appropriate, promote cooperation of the airport managing body with suppliers of ground-handling services, as well as, where relevant, with self-handling airport users. Member States should in particular do so through the Airport Users' Committee set up pursuant to Council Directive 96/67/EC ([16]).

(56) Members States should be able to exempt airports of the TEN-T network with less than 10 000 commercial flight movements per year, calculated as an average over the previous three years, from the obligation to provide electricity to stationary aircraft at all remote stands. In view of the number of flights concerned, the investment and maintenance costs for providing the aircraft remote stands with electricity in those airports of the TEN-T network might not be proportionate to the environmental benefit, especially in comparison with more efficient investments to tackle airports' CO_2 emissions.

([16]) Council Directive 96/67/EC of 15 October 1996 on access to the groundhandling market at Community airports (OJ L 272, 25.10.1996, p. 36).

(57) In accordance with Directive 2014/94/EU, Member States have established national policy frameworks outlining their objectives and plans to ensure that those objectives are met. Both the assessment of the national policy frameworks and the evaluation of Directive 2014/94/EU have highlighted the need for higher ambition and a better coordinated approach across Member States in view of the expected acceleration in the uptake of alternative fuel vehicles, in particular of electric vehicles. Furthermore, alternatives to fossil fuels will be needed in all transport modes to meet the ambitions of the European Green Deal and the Union climate objectives. The existing national policy frameworks should be revised to clearly describe how the much greater need for publicly accessible recharging and refuelling infrastructure as expressed in the mandatory targets is going to be met by the Member States. The revised national policy frameworks could also address transport modes for which no mandatory deployment targets exist. Member States should regularly report on the progress made with regard to the implementation of those revised national policy frameworks.

(58) Moreover, Member States should regularly assess how the deployment and operation of recharging points could enable electric vehicles to further contribute to the flexibility of the energy system and to the further absorption of renewable electricity. That assessment should identify the appropriate measures to be implemented to ensure consistency of the infrastructure planning with the respective grid planning in order to meet the requirements set out in this Regulation. Without prejudice to Regulation (EU) 2019/943 of the European Parliament and of the Council ([17]) and Directive (EU) 2019/944, Member States should take all necessary steps to ensure that the electricity grid meets the power demand of the recharging infrastructure provided for in this Regulation. To that end, Member States should upgrade and maintain the electricity grid so that it is able to handle present and future demand from the transport sector for electricity.

(59) The revised national policy frameworks should include support measures for the development of the market as regards alternative fuels, including the deployment of the necessary alternative fuels infrastructure to be put into place, in close cooperation with regional and local authorities and with the industry concerned, while taking into account the needs of small and medium-sized enterprises. Additionally, the revised national policy frameworks should describe the overall national framework for planning, permitting and procuring of such infrastructure, identify any obstacles and the actions that will be taken to remove them so that the time between the deployment and use of the infrastructure is reasonable and a faster rollout of infrastructure can be achieved. When revising the national policy frameworks, it is important to observe the general principles of technological neutrality and energy efficiency first. Member States should list all measures that have been adopted or are planned.

(60) The development and implementation of the revised national policy frameworks of the Member States should be facilitated by the Commission by means of exchanges of information and best practices between the Member States. Each Member State should also be able to decide to appoint a national coordinator for the deployment of alternative fuels infrastructure with the task of overseeing the national coordination and implementation of the national policy framework.

(61) In order to promote alternative fuels and develop the relevant infrastructure, the national policy frameworks should provide an overview of the state of play, perspectives and planned initiatives to promote alternative fuels in sectors that are difficult to decarbonise such as aviation, maritime transport, inland navigation, as well as rail transport on rail sections that cannot be electrified. In particular, Member States should provide an overview of the state of play, perspectives and planned initiatives for the decarbonisation of inland navigation along the TEN-T network in close cooperation with the Member States concerned. Long term decarbonisation strategies could also be developed for ports of the TEN-T network and airports of the TEN-T network, in particular with a focus on the deployment of infrastructure for low- and zero-emission vessels and aircraft, as well as for railway lines that are not going to be electrified. On the basis of those strategies, and taking into consideration the national market and traffic share data and market projections, the Commission should review this Regulation with a view to setting additional mandatory targets for those sectors.

([17]) Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (OJ L 158, 14.6.2019, p. 54).

(62) The development of alternative fuel technologies is also important for railways, where direct electrification of a rail section might not be possible for reasons such as the cost-efficiency of the service. Different technologies are available to which the rail sector can switch from diesel trains, including direct electrification, battery-powered trains and hydrogen applications. The development of those technologies requires the deployment of suitable recharging and refuelling infrastructure in Member States.

(63) Member States should make use of a wide range of regulatory and non-regulatory incentives and measures to reach the mandatory targets and implement their national policy frameworks, in close cooperation with private sector actors, who should play a key role in supporting the development of alternative fuels infrastructure.

(64) Pursuant to Directive 2009/33/EC of the European Parliament and of the Council ([18]), minimum national shares of public procurement are reserved for clean buses and zero-emission buses, where a clean bus uses alternative fuels as defined in this Regulation. With ever more public transport authorities and operators switching to clean buses and zero-emission buses in order to reach those mandatory targets, it is important that Member States include the targeted promotion and development of the necessary recharging and refuelling infrastructure for buses as a key element in their national policy frameworks. It is also important that Member States establish and maintain appropriate instruments to promote the deployment of recharging and refuelling infrastructure for buses also for captive fleets, in particular for clean buses and zero-emission buses at local level.

(65) In light of the increasing diversity in the type of fuels for motorised vehicles coupled with on-going growth in the road mobility of citizens across the Union, it is necessary to provide consumers with clear and easy-to-understand information on the fuels available at refuelling stations and on the compatibility of their vehicles with different fuels or recharging points on the Union market.

(66) Simple and easy-to-compare information on price of different fuels could play an important role in enabling consumers to better evaluate the relative cost of individual fuels available on the market. Therefore, a unit price comparison of certain alternative fuels and conventional fuels, expressed as 'fuel price per 100 km', should be shown for information purposes at all relevant refuelling stations. It should be made clear to consumers that such comparisons concern the average fuel prices in the Member State, which might differ from the actual prices charged at the refuelling station concerned. Moreover, the Commission should, if appropriate, review Directive 1999/94/EC of the European Parliament and of the Council ([19]) in order to ensure that consumer information on fuel economy and CO_2 emissions in respect of the marketing of new passenger cars, as provided for by that Directive, takes into account and reflects the developments related to the transition to alternative fuels.

(67) It is necessary to provide consumers with sufficient information regarding the geographic location, characteristics and services offered at the publicly accessible recharging and refuelling points of alternative fuels covered by this Regulation. Therefore, Member States should ensure that operators or owners of publicly accessible recharging and refuelling points make relevant static data and dynamic data available. Requirements on data types regarding the availability of and accessibility to relevant data related to recharging and refuelling should be laid down, building on the outcomes of the Programme Support Action on 'Data collection related to recharging/refuelling points for alternative fuels and the unique identification codes related to e-mobility actors' ('IDACS'), that was concluded in 2022.

(68) This Regulation addresses data types that are necessary for the functioning of a competitive and open market, and essential for end users to make informed decisions on their recharging and refuelling sessions including through high-quality information services developed by relevant market actors. The data types requirements laid down in this Regulation should apply only to the data that are available in a digital machine-readable format.

([18]) Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean road transport vehicles in support of low-emission mobility (OJ L 120, 15.5.2009, p. 5).

([19]) Directive 1999/94/EC of the European Parliament and of the Council of 13 December 1999 relating to the availability of consumer information on fuel economy and CO_2 emissions in respect of the marketing of new passenger cars (OJ L 12, 18.1.2000, p. 16).

(69) Data should play a fundamental role in the adequate functioning of recharging and refuelling infrastructure. The format, the frequency and the quality in which those data should be made available and accessible determine the overall quality of an alternative fuels infrastructure that meets user needs. Moreover, those data should be accessible in a coherent manner in all Member States. Member States should make the data concerning alternative fuels infrastructure available as open data through their national access point in accordance with Commission Delegated Regulation (EU) 2022/670 ([20]) and in compliance with the additional specifications that are complementary to those set out in that Delegated Regulation. It should also be possible for such data to be provided to a common European access point that the Commission should establish, which should function as a single Union data gateway for the data made available by operators in the national access points. The common European access point should, where possible, build on the existing structures and functions of the European Alternative Fuels Observatory ('EAFO') in conjunction with the TENtec Information System or, for example, be made accessible through a dedicated web portal. The common European access point should enable data users to easily access data, to compare information on price and to obtain information on the characteristics of the alternative fuels infrastructure, such as accessibility, availability or power capacity.

(70) It is crucial that all actors in the electric mobility sector can interact easily through digital means to provide the best service quality to end users. Such interaction requires unique identifiers for the actors in the value chain. To that end, all Member States should establish an Identification Registration Organisation ('IDRO') for issuing and managing unique identification ('ID') codes to identify, as a minimum, operators of recharging points and mobility service providers. Each IDRO should collect information on e-mobility ID codes that are already in use in its Member State, issue new e-mobility ID codes, where needed, to recharging point operators and mobility service providers under an Union-wide common agreed logic in which e-mobility ID codes are formatted, and enable the exchange of those e-mobility codes and the verification of their uniqueness via a potential future common Identification Registration Repository ('IDRR'). The Commission should issue technical guidance on the set up of such organisations, drawing on the outcome of IDACS.

(71) Technical specifications for interoperability of recharging and refuelling points should be specified in European or international standards. The European standardisation organisations should adopt European standards in accordance with Article 10 of Regulation (EU) No 1025/2012 of the European Parliament and of the Council ([21]). It is important that those standards be based on current international standards or ongoing international standardisation work, where applicable. To that end, it is important that European standardisation processes for recharging and refuelling infrastructure proceed quickly, supporting prompt adherence to the timeline necessary for planning, tendering and building the infrastructure required under this Regulation. It is also important to initiate or accelerate the standardisation processes for a Union-wide harmonised recharging infrastructure for stationary and dynamic recharging.

(72) Maritime transport and inland navigation need new standards to facilitate and consolidate the entry into the market of alternative fuels, in relation to electricity supply and hydrogen, methanol and ammonia bunkering, as well as standards for communication exchange between vessels and infrastructure.

(73) The International Maritime Organization ('IMO') develops uniform and internationally recognised safety and environmental standards for maritime transport. Conflicts with international standards should be avoided in view of the global nature of maritime transport. Therefore, the Union should ensure that technical specifications for maritime transport adopted pursuant to this Regulation are consistent with international rules adopted by the IMO.

([20]) Commission Delegated Regulation (EU) 2022/670 of 2 February 2022 supplementing Directive 2010/40/EU of the European Parliament and of the Council with regard to the provision of EU-wide real-time traffic information services (OJ L 122, 25.4.2022, p. 1).

([21]) Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council (OJ L 316, 14.11.2012, p. 12).

(74) In the application of this Regulation, the Commission should consult relevant expert groups, and in particular the Sustainable Transport Forum ('STF') and the European Sustainable Shipping Forum ('ESSF'). Such expert consultation is of particular importance when the Commission intends to adopt delegated or implementing acts under this Regulation.

(75) Alternative fuels infrastructure is a rapidly developing area. The lack of common technical specifications constitutes a barrier for the creation of a single market of alternative fuels infrastructure. Therefore, it is necessary to lay down technical specifications for areas where common technical specifications are necessary but do not yet exist. In particular, those technical specifications should cover the communication between the electric vehicle and the recharging point, the communication between the recharging point and the recharging software management system (back-end), the communication related to the electric vehicle roaming service and the communication with the electricity grid, while ensuring the highest level of cybersecurity protection and protection of final customers' personal data. It is also necessary to establish a suitable governance framework and the roles of the different actors involved in the vehicle-to-grid communication sector. Moreover, emerging technological developments, such as electric road systems, in particular dynamic overhead power supply via a pantograph, dynamic ground level power supply through conductive rails and inductive power supply through coils in the road, have to be accounted for. As regards data provision, it is necessary for additional data types, such as the data related to the existence of facilities offering associated services to end users, the data related to the accepted payment methods, the data related to the available languages on the infrastructure and the data related to providing smart and bidirectional recharging services, to be added to the data on publicly accessible recharging.

(76) In order to supplement this Regulation by establishing further technical specifications and to amend this Regulation by adding additional data types, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union (TFEU) should be delegated to the Commission in respect of common technical requirements for a common application programme interface to enable an automated and uniform data exchange between the operators of publicly accessible recharging and refuelling points and data users. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making ([22]). In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.

(77) In order to ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission with respect to the development of labelling provisions, to the format, frequency and quality of data on publicly accessible recharging and refuelling points to be made available and accessible under this Regulation and to the procedure enabling that availability and accessibility. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council ([23]).

(78) The market for alternative fuels and in particular for zero-emission fuels is still in the early stages of development and technology is evolving fast. This development is likely to affect the demand for alternative fuels and consequently for alternative fuels infrastructure across all transport modes. The Commission should therefore, by 31 December 2024, present a technology and market readiness report dedicated to heavy-duty vehicles. That report should take into account the first indications of the preferences of the market and consider the technological development and the development of the technical specifications. By 31 December 2026 and every five years thereafter, the Commission should carry out a review of this Regulation.

([22]) OJ L 123, 12.5.2016, p. 1.

([23]) Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

(79) Given that this Regulation will result in additional adjustment and administrative costs, the overall regulatory burden for the sectors covered by this Regulation should be kept under close review. Against that backdrop, in its report evaluating the functioning of this Regulation the Commission should assess the extent to which the objectives of this Regulation have been met and the extent to which it has impacted the competitiveness of the relevant sectors. That review should also cover the interaction of this Regulation with other relevant Union legal acts, including possible actions and measures that have been or could be taken to reduce the total cost pressure on the relevant sectors.

(80) Since the objective of this Regulation, namely to ensure the deployment of sufficient alternative fuels infrastructure in the Union, in particular for road vehicles, trains, vessels and stationary aircraft, cannot be sufficiently achieved by the Member States but can rather, by reason of the need to enable Union-wide mobility of alternative fuel vehicles, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve that objective.

(81) Directive 2014/94/EU should therefore be repealed. Commission Delegated Regulations (EU) 2019/1745 ([24]) and (EU) 2021/1444 ([25]) set out undated technical specifications for certain types of alternative fuels infrastructure and those specifications are now dated and listed in Annex II to this Regulation. Therefore, those Delegated Regulations should also be repealed,

HAVE ADOPTED THIS REGULATION:

Article 1

Subject matter

1. This Regulation establishes mandatory national targets leading to the deployment of sufficient alternative fuels infrastructure in the Union for road vehicles, trains, vessels and stationary aircraft. It lays down common technical specifications and requirements on user information, data provision and payment requirements for alternative fuels infrastructure.

2. This Regulation also establishes rules for the national policy frameworks referred to in Article 14 to be adopted by the Member States, including rules for the deployment of alternative fuels infrastructure in areas where no mandatory Union-wide targets are set and for reporting on the deployment of such infrastructure.

3. This Regulation establishes a reporting mechanism to encourage cooperation and ensures robust tracking of progress. The reporting mechanism shall take the form of a structured, transparent and iterative process taking place between the Commission and Member States for the purpose of finalising the national policy frameworks, taking into account existing local and regional strategies for the deployment of alternative fuels infrastructure, and their subsequent implementation and corresponding Commission action to support the coherent and more rapid deployment of alternative fuels infrastructure in the Member States.

Article 2

Definitions

For the purposes of this Regulation, the following definitions apply:

(1) 'accessibility of data' means the possibility to request and obtain data at any time in a machine readable format;

([24]) Commission Delegated Regulation (EU) 2019/1745 of 13 August 2019 supplementing and amending Directive 2014/94/EU of the European Parliament and of the Council as regards recharging points for L-category motor vehicles, shore-side electricity supply for inland waterway vessels, hydrogen supply for road transport and natural gas supply for road and waterborne transport and repealing Commission Delegated Regulation (EU) 2018/674 (OJ L 268, 22.10.2019, p. 1).

([25]) Commission Delegated Regulation (EU) 2021/1444 of 17 June 2021 supplementing Directive 2014/94/EU of the European Parliament and of the Council with regards standards for recharging points for electric buses (OJ L 313, 6.9.2021, p. 1).

(2) 'ad hoc price' means the price charged by the operator of a recharging or refuelling point to an end user for recharging or refuelling on an ad hoc basis;

(3) 'along the TEN-T road network' means:

(a) with regard to electric recharging stations: that they are located on the TEN-T road network or within 3 km driving distance from the nearest exit of a TEN-T road; and

(b) with regard to hydrogen refuelling stations: that they are located on the TEN-T road network or within 10 km driving distance from the nearest exit of a TEN-T road;

(4) 'alternative fuels' means fuels or power sources which serve, at least partly, as a substitute for fossil oil sources in the energy used for transport and which have the potential to contribute to its decarbonisation and enhance the environmental performance of the transport sector, including:

(a) 'alternative fuels for zero-emission vehicles, trains, vessels or aircraft':

— electricity,

— hydrogen,

— ammonia,

(b) 'renewable fuels':

— biomass fuels, including biogas, and biofuels as defined in Article 2, points (27), (28) and (33), respectively, of Directive (EU) 2018/2001,

— synthetic and paraffinic fuels, including ammonia, produced from renewable energy,

(c) 'non-renewable alternative fuels and transitional fossil fuels':

— natural gas in gaseous form (compressed natural gas (CNG)) and liquefied form (liquefied natural gas (LNG)),

— liquefied petroleum gas (LPG),

— synthetic and paraffinic fuels produced from non-renewable energy;

(5) 'aircraft contact stand' means a stand in a designated area of the airport apron equipped with a passenger boarding bridge;

(6) 'aircraft remote stand' means a stand in a designated area of the airport apron not equipped with a passenger boarding bridge;

(7) 'airport of the TEN-T core network or airport of the TEN-T comprehensive network' means an airport as listed and categorised in Annex II to Regulation (EU) No 1315/2013;

(8) 'automatic authentication' means the authentication of a vehicle at a recharging point through the recharging connector or telematics;

(9) 'availability of data' means the existence of data in a digital machine-readable format;

(10) 'battery electric vehicle' means an electric vehicle that runs exclusively on the electric motor, with no secondary source of propulsion;

(11) 'bi-directional recharging' means a smart recharging operation where the direction of the electricity flow can be reversed, allowing that electricity flows from the battery to the recharging point it is connected to;

(12) 'connector' means the physical interface between the recharging or refuelling point and the vehicle through which the fuel or electric energy is exchanged;

(13) 'commercial air transport' means 'commercial air transport' as defined in Article 3, point (24), of Regulation (EU) 2018/1139 of the European Parliament and of the Council ([26]);

(14) 'container ship' means a ship designed exclusively for the carriage of containers in holds and on deck;

([26]) Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1).

(15) 'contract-based payment' means a payment for a recharging or refuelling service from the end user to a mobility service provider on the basis of a contract concluded between that end user and that mobility service provider;

(16) 'data user' means any public authority, road authority, road operator, recharging and refuelling point operator, research or non-governmental organisation, mobility service provider, e-roaming platform, digital map provider or any other entity interested in using data to provide information, create services or perform research or analysis on alternative fuels infrastructure;

(17) 'digitally-connected recharging point' means a recharging 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 in order to start and stop the recharging session and to measure electricity flows;

(18) 'distribution system operator' means a 'distribution system operator' as defined in Article 2, point (29), of Directive (EU) 2019/944;

(19) 'distributor' means a 'distributor' as defined in Article 3, point (43), of Regulation (EU) 2018/858 of the European Parliament and of the Council ([27]);

(20) 'dynamic data' means data that change often or on a regular basis;

(21) 'electric road system' means a physical installation along a road for the transfer of electricity to an electric vehicle while the vehicle is in motion;

(22) '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;

(23) 'electricity supply to stationary aircraft' means the supply of electricity through a standardised fixed or mobile interface to an aircraft when stationed at an aircraft contact stand or at an aircraft remote stand;

(24) 'end user' means a natural or legal person purchasing an alternative fuel for direct use in a vehicle;

(25) 'e-roaming' means the exchange of data and payments between the operator of a recharging or refuelling point and a mobility service provider from which an end user purchases a recharging or refuelling service;

(26) 'e-roaming platform' means a platform connecting market actors, notably mobility service providers and operators of recharging or refuelling points, to enable the provision of services between them, including e-roaming;

(27) 'European standard' means a 'European standard' as defined in Article 2, point (1)(b), of Regulation (EU) No 1025/2012;

(28) 'general aviation' means all civil aviation operations other than scheduled air services and non-scheduled air transport operations for remuneration or hire;

([27]) Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC (OJ L 151, 14.6.2018, p. 1).

(29) 'gross tonnage' (GT) means 'gross tonnage' as defined in Article 3, point (e), of Regulation (EU) 2015/757 of the European Parliament and of the Council ([28]);

(30) 'heavy-duty vehicle' means a Category M_2 motor vehicle as described in Article 4(1), point (a)(ii), a Category M_3 motor vehicle as described in Article 4(1), point (a)(iii), a Category N_2 motor vehicle as described in Article 4(1), point (b)(ii) or a Category N_3 motor vehicle as described in Article 4(1), point (b)(iii), of Regulation (EU) 2018/858;

(31) 'high-power recharging point' means a recharging point with a power output of more than 22 kW for the transfer of electricity to an electric vehicle;

(32) 'high-speed passenger craft' means a 'high-speed craft' as defined in Regulation 1 of Chapter X of the International Convention for the Safety of Life at Sea, 1974 (SOLAS 74), which carries more than 12 passengers;

(33) 'light-duty vehicle' means a Category M_1 motor vehicle as described in Article 4(1), point (a)(i) or a Category N_1 motor vehicle as described Article 4(1), point (b)(i), of Regulation (EU) 2018/858;

(34) 'liquefied methane' means LNG, liquefied biogas or synthetic liquefied methane, including blends of those fuels;

(35) 'manufacturer' means a 'manufacturer' as defined in Article 3, point (40), of Regulation (EU) 2018/858;

(36) 'mobility service provider' means a legal person that provides services in return for remuneration to an end user, including the selling of recharging or refuelling services;

(37) 'normal power recharging point' means a recharging point with a power output less than or equal to 22 kW for the transfer of electricity to an electric vehicle;

(38) 'National Access Point' means a digital interface set up by a Member State that constitutes a single point of access to data;

(39) 'operator of a recharging point' means the entity that is responsible for the management and operation of a recharging point and that provides a recharging service to end users, including in the name and on behalf of a mobility service provider;

(40) 'operator of a refuelling point' means the entity that is responsible for the management and operation of a refuelling point and that provides a refuelling service to end users, including in the name and on behalf of a mobility service provider;

(41) 'passenger ship' means a ship which carries more than 12 passengers, including cruise ships, high-speed passenger crafts and ro-ro passenger ships;

(42) 'payment service' means a 'payment service' as defined in Article 4, point (3), of Directive (EU) 2015/2366 of the European Parliament and of the Council ([29]);

(43) 'plug-in hybrid vehicle' means an electric vehicle with a conventional combustion engine combined with an electric propulsion system which can be recharged from an external electric power source;

(44) 'power output' means the theoretical maximum power, expressed in kW, that a recharging point, station or pool, or a shore-side electricity supply installation can provide to vehicles or vessels connected to that recharging point, station, pool or installation;

(45) 'publicly accessible alternative fuels infrastructure' means an alternative fuels infrastructure which is located at a site or premises that are open to the general public, irrespective of whether the alternative fuels infrastructure is located on public or 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;

(46) 'Quick Response code' (QR code) means an ISO/IEC 18004:2015-compliant encoding and visualisation of data;

([28]) Regulation (EU) 2015/757 of the European Parliament and of the Council of 29 April 2015 on the monitoring, reporting and verification of greenhouse gas emissions from maritime transport, and amending Directive 2009/16/EC (OJ L 123, 19.5.2015, p. 55).

([29]) Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC (OJ L 337, 23.12.2015, p. 35).

(47) 'recharge on an ad hoc basis' means a recharging service purchased by an end user without the need for that end user to register, conclude a written agreement or enter into a commercial relationship with the operator of that recharging point that goes beyond the mere purchase of the recharging service;

(48) 'recharging point' means a fixed or mobile, on-grid or off-grid interface for the transfer of electricity to an electric vehicle which, although it may have one or more connectors to accommodate different connector types, is capable of recharging only one electric vehicle at a time, and which excludes devices with a power output less than or equal to 3,7 kW the primary purpose of which is not the recharging of electric vehicles;

(49) 'recharging point, station or pool dedicated to light-duty vehicles' means a recharging point, station or pool intended for the recharging of light-duty vehicles, due to the specific design of the connectors/plugs or the design of the parking space adjacent to the recharging point, station or pool, or both;

(50) 'recharging point, station or pool dedicated to heavy-duty vehicles' means a recharging point, station or pool intended for the recharging of heavy-duty vehicles, either due to the specific design of the connectors/plugs or to the design of the parking space adjacent to the recharging point, station or pool, or both;

(51) 'recharging pool' means one or more recharging stations at a specific location;

(52) 'recharging station' means a physical installation at a specific location, consisting of one or more recharging points;

(53) 'recharging service' means the sale or provision of electricity, including related services, through a publicly accessible recharging point;

(54) 'recharging session' means the full process of recharging a vehicle at a publicly accessible recharging point from the moment the vehicle is connected to the moment the vehicle is disconnected;

(55) 'refuel on an ad hoc basis' means a refuelling service purchased by an end user without the need for that end user to register, conclude a written agreement, or enter into a commercial relationship with the operator of that refuelling point that goes beyond the mere purchase of the refuelling service;

(56) 'refuelling point' means a refuelling facility for the provision of any liquid or gaseous fuel, through a fixed or a mobile installation, which is capable of refuelling only one vehicle, one train, one vessel or one aircraft at a time;

(57) 'refuelling service' means the sale or provision of any liquid or gaseous fuel through a publicly accessible refuelling point;

(58) 'refuelling session' means the full process of refuelling a vehicle at a publicly accessible refuelling point from the moment the vehicle is connected to the moment the vehicle is disconnected;

(59) 'refuelling station' means a single physical installation at a specific location, consisting of one or more refuelling points;

(60) 'regulatory authority' means a regulatory authority designated by each Member State pursuant to Article 57(1) of Directive (EU) 2019/944;

(61) 'renewable energy' means 'energy from renewable sources' as defined in Article 2, second paragraph, point (1), of Directive (EU) 2018/2001;

(62) 'ro-ro passenger ship' means a ship with facilities to enable road or rail vehicles to roll on and roll off the vessel which carries more than 12 passengers;

(63) 'safe and secure parking area' means a parking area accessible to drivers engaged in the carriage of goods or passengers which has been certified in accordance with Commission Delegated Regulation (EU) 2022/1012 ([30]);

(64) 'shore-side electricity supply' means the provision of shore-side electrical power through a standardised fixed or mobile interface to seagoing ships or inland waterway vessels, moored at the quayside;

(65) 'smart recharging' means a recharging operation in which the intensity of electricity delivered to the battery is adjusted in real-time, based on information received through electronic communication;

(66) 'static data' means data that do not change often or on a regular basis;

(67) 'TEN-T comprehensive network' means a comprehensive network within the meaning of Article 9 of Regulation (EU) No 1315/2013;

(68) 'TEN-T core network' means a core network within the meaning of Article 38 of Regulation (EU) No 1315/2013;

(69) 'TEN-T core inland waterway port or TEN-T comprehensive inland waterway port' means an inland waterway port of the TEN-T core network or TEN-T comprehensive network, as listed and categorised in Annex II to Regulation (EU) No 1315/2013;

(70) 'TEN-T core maritime port or TEN-T comprehensive maritime port' means a maritime port of the TEN-T core network or TEN-T comprehensive network, as listed and categorised in Annex II to Regulation (EU) No 1315/2013;

(71) 'transmission system operator' means a 'transmission system operator' as defined in Article 2, point (35), of Directive (EU) 2019/944;

(72) 'urban node' means an 'urban node' as defined in Article 3, point (p), of Regulation (EU) No 1315/2013.

Article 3

Targets for recharging infrastructure dedicated to light-duty electric vehicles

1. Member States shall ensure that, in their territory, publicly accessible recharging stations dedicated to light-duty electric vehicles are deployed in a way that is commensurate with the uptake of light-duty electric vehicles and that they provide sufficient power output for those vehicles.

To that end, Member States shall ensure that, at the end of each year, starting from 2024, the following power output targets are met cumulatively:

(a) for each light-duty battery electric vehicle registered in their territory, a total power output of at least 1,3 kW is provided through publicly accessible recharging stations; and

(b) for each light-duty plug-in hybrid vehicle registered in their territory, a total power output of at least 0,80 kW is provided through publicly accessible recharging stations.

2. When the share of light-duty battery electric vehicles compared to the total fleet of light-duty vehicles registered in the territory of a Member State reaches at least 15 % and the Member State demonstrates that the implementation of the requirements set out in paragraph 1, second subparagraph, has adverse effects in that Member State, in that it is discouraging private investments, and is no longer justified, that Member State may submit to the Commission a reasoned request for authorisation to apply lower requirements in terms of level of total power output or to cease to apply such requirements.

3. The Commission shall, within six months of receipt of a reasoned request submitted pursuant to paragraph 2, adopt a decision as justified in each case.

([30]) Commission Delegated Regulation (EU) 2022/1012 of 7 April 2022 supplementing Regulation (EC) No 561/2006 of the European Parliament and of the Council with regard to the establishment of standards detailing the level of service and security of safe and secure parking areas and to the procedures for their certification (OJ L 170, 28.6.2022, p. 27).

4. Member States shall ensure a minimum coverage of publicly accessible recharging points dedicated to light-duty electric vehicles on the road network in their territory.

To that end, Member States shall ensure that:

(a) along the TEN-T core road network, publicly accessible recharging pools dedicated to light-duty electric vehicles and meeting the following requirements are deployed in each direction of travel with a maximum distance of 60 km between them:

   (i) by 31 December 2025, each recharging pool offers a power output of at least 400 kW and includes at least one recharging point with an individual power output of at least 150 kW;

   (ii) by 31 December 2027, each recharging pool offers a power output of at least 600 kW and includes at least two recharging points with an individual power output of at least 150 kW;

(b) along the TEN-T comprehensive road network, publicly accessible recharging pools dedicated to light-duty electric vehicles and meeting the following requirements are deployed in each direction of travel with a maximum distance of 60 km between them:

   (i) by 31 December 2027, along at least 50 % of the length of the TEN-T comprehensive road network, each recharging pool offers a power output of at least 300 kW and includes at least one recharging point with an individual power output of at least 150 kW;

   (ii) by 31 December 2030, each recharging pool offers a power output of at least 300 kW and includes at least one recharging point with an individual power output of at least 150 kW;

   (iii) by 31 December 2035, each recharging pool offers a power output of at least 600 kW and includes at least two recharging points with an individual power output of at least 150 kW.

5. The calculation of the percentage of the length of TEN-T comprehensive road network referred to in paragraph 4, point (b)(i), shall be based on the following elements:

(a) for the calculation of the denominator: the total length of the TEN-T comprehensive road network within the territory of the Member State;

(b) for the calculation of the numerator: the cumulated length of the sections of the TEN-T comprehensive road network between two publicly accessible recharging pools dedicated to light-duty electric vehicles meeting the requirements set out in paragraph 4, point (b)(i), excluding any sections of the TEN-T comprehensive road network between two of those recharging pools that are more than 60 km apart.

6. A single publicly accessible recharging pool dedicated to light-duty electric vehicles may be deployed along the TEN-T road network for both directions of travel provided that:

(a) that recharging pool is easily accessible from both directions of travel;

(b) that recharging pool is adequately signposted; and

(c) the requirements set out in paragraph 4 in terms of the maximum distance between recharging pools, total power output of the recharging pool, number of recharging points and power output of single recharging points applicable for a single direction of travel are complied with for both directions of travel.

7. By way of derogation from paragraph 4 of this Article, along roads of the TEN-T network with total annual average daily traffic of fewer than 8 500 light-duty vehicles and where the deployment of infrastructure cannot be justified in socio-economic cost-benefit terms, Member States may provide that a publicly accessible recharging pool dedicated to light-duty electric vehicles serves both directions of travel provided that the requirements set out in paragraph 4 of this Article, in terms of the maximum distance between recharging pools, the total power output of the recharging pool, the number of recharging points and the power output of single recharging points applicable for a single direction of travel, are complied with, and that the recharging pool is easily accessible from both directions of travel and adequately signposted. Member States shall notify the Commission of any cases in which they have made use of the derogation referred to in this paragraph. Member States shall review those cases every two years as part of the national progress reporting referred to in Article 15.

8. By way of derogation from paragraph 4 of this Article, along roads of the TEN-T network with a total annual average daily traffic of fewer than 8 500 light-duty vehicles and where the deployment of infrastructure cannot be justified in socio-economic cost-benefit terms, Member States may reduce, by up to 50 %, the total power output of a publicly accessible recharging pool dedicated to light-duty vehicles required pursuant to paragraph 4 of this Article, provided that that recharging pool serves only one direction of travel and that the other requirements set out in paragraph 4 of this Article, in terms of the maximum distance between recharging pools, the number of recharging points and the power output of single recharging points, are complied with. Member States shall notify the Commission of any cases in which they have made use of the derogation referred to in this paragraph. Member States shall review those cases every two years as part of the national progress reporting referred to in Article 15.

9. By way of derogation from the requirement relating to the maximum distance of 60 km between the publicly accessible recharging pools dedicated to light-duty vehicles set out in paragraph 4, points (a) and (b), of this Article, Member States may allow a longer distance, of up to 100 km, for such recharging pools along roads of the TEN-T network with a total annual average daily traffic of fewer than 3 000 light-duty vehicles, provided that the distance between recharging pools is adequately signposted. Member States shall notify the Commission of any cases in which they have made use of the derogation referred to in this paragraph. Member States shall review those cases every two years as part of the national progress reporting referred to in Article 15.

10. Where a Member State has notified the Commission of a case in which it has made use of a derogation referred to in paragraph 7, the requirements set out in paragraph 4, points (a) and (b), in terms of the maximum distance between recharging pools shall be deemed to have been complied with.

11. Neighbouring Member States shall ensure that the maximum distances referred to in paragraph 4, points (a) and (b), are not exceeded for cross-border sections of the TEN-T core road network and TEN-T comprehensive road network.

Article 4

Targets for recharging infrastructure dedicated to heavy-duty electric vehicles

1. Member States shall ensure a minimum coverage of publicly accessible recharging points dedicated to heavy-duty electric vehicles in their territory.

To that end, Member States shall ensure that:

(a) by 31 December 2025, along at least 15 % of the length of the TEN-T road network, publicly accessible recharging pools dedicated to heavy-duty electric vehicles are deployed in each direction of travel and that each recharging pool offers a power output of at least 1 400 kW and includes at least one recharging point with an individual power output of at least 350 kW;

(b) by 31 December 2027, along at least 50 % of the length of the TEN-T road network, publicly accessible recharging pools dedicated to heavy-duty electric vehicles are deployed in each direction of travel and that each recharging pool:

   (i) along the TEN-T core road network, offers a power output of at least 2 800 kW and includes at least two recharging points with an individual power output of at least 350 kW;

   (ii) along the TEN-T comprehensive road network, offers a power output of at least 1 400 kW and includes at least one recharging point with an individual power output of at least 350 kW;

(c) by 31 December 2030, along the TEN-T core road network, publicly accessible recharging pools dedicated to heavy-duty electric vehicles are deployed in each direction of travel with a maximum distance of 60 km between them and that each recharging pool offers a power output of at least 3 600 kW and includes at least two recharging points with an individual power output of at least 350 kW;

(d) by 31 December 2030, along the TEN-T comprehensive road network, publicly accessible recharging pools dedicated to heavy-duty electric vehicles are deployed in each direction of travel with a maximum distance of 100 km between them and each recharging pool offers a power output of at least 1 500 kW and includes at least one recharging point with an individual power output of at least 350 kW;

(e) by 31 December 2027, in each safe and secure parking area at least two publicly accessible recharging stations dedicated to heavy-duty electric vehicles with an individual power output of at least 100 kW are deployed;

(f) by 31 December 2030, in each safe and secure parking area at least four publicly accessible recharging stations dedicated to heavy-duty electric vehicles with an individual power output of at least 100 kW are deployed;

(g) by 31 December 2025, in each urban node publicly accessible recharging points dedicated to heavy-duty electric vehicles with an aggregated power output of at least 900 kW are deployed, provided by recharging stations with an individual power output of at least 150 kW;

(h) by 31 December 2030, in each urban node publicly accessible recharging points dedicated to heavy-duty electric vehicles with an aggregated power output of at least 1 800 kW are deployed, provided by recharging stations with an individual power output of at least 150 kW.

2. The calculation of the percentage of the length of TEN-T road network referred to in paragraph 1, points (a) and (b), shall be based on the following elements:

(a) for the calculation of the denominator: the total length of the TEN-T road network within the territory of the Member State;

(b) for the calculation of the numerator: the cumulated length of the sections of the TEN-T road network between two publicly accessible recharging pools dedicated to heavy-duty electric vehicles meeting the requirements set out in paragraph 1, points (a) or (b) respectively, excluding any sections of the TEN-T road network between two of those recharging pools that are more than 120 km apart.

3. A single publicly accessible recharging pool dedicated to heavy-duty electric vehicles may be deployed along the TEN-T road network for both directions of travel provided that:

(a) that recharging pool is easily accessible from both directions of travel;

(b) that recharging pool is adequately signposted; and

(c) the requirements set out in paragraph 1 in terms of the maximum distance between recharging pools, total power output of the recharging pool, number of recharging points and power output of single points applicable for a single direction of travel are complied with for both directions of travel.

4. By way of derogation from paragraph 1 of this Article, along roads of the TEN-T network with a total annual average daily traffic of fewer than 2 000 heavy-duty vehicles and where the deployment of infrastructure cannot be justified in socio-economic cost-benefit terms, Member States may provide that a publicly accessible recharging pool dedicated to heavy-duty electric vehicles serves both directions of travel provided that the requirements set out in paragraph 1 of this Article, in terms of the maximum distance between recharging pools, the total power output of the recharging pool, the number of recharging points and the power output of single recharging points applicable for a single direction of travel, are complied with, and that the recharging pool is easily accessible from both directions of travel and adequately signposted. Member States shall notify the Commission of any cases in which they have made use of the derogation referred to in this paragraph. Member States shall review those cases every two years as part of the national progress reporting referred to in Article 15.

5. By way of derogation from paragraph 1 of this Article, along roads of the TEN-T network with a total annual average daily traffic of fewer than 2 000 heavy-duty vehicles and where the deployment of infrastructure cannot be justified in socio-economic cost-benefit terms, Member States may reduce by up to 50 % the total power output of a publicly accessible recharging pool dedicated to heavy-duty electric vehicles required pursuant to paragraph 1 of this Article, provided that that recharging pool serves only one direction of travel and that the other requirements set out in paragraph 1 of this Article, in terms of the maximum distance between recharging pools, the number of recharging points and the

power output of single recharging points, are complied with. Member States shall notify the Commission of any cases in which they have made use of the derogation referred to in this paragraph. Member States shall review those cases every two years as part of the national progress reporting referred to in Article 15.

6. By way of derogation from the requirement relating to the maximum distance of 60 km between the publicly accessible recharging pools dedicated to heavy-duty electric vehicles set out in paragraph 1, point (c), of this Article, Member States may allow a longer distance, of up to 100 km, for such recharging pools along roads of the TEN-T core network with a total annual average daily traffic of fewer than 800 heavy-duty vehicles, provided that the distance between recharging pools is adequately signposted. Member States shall notify the Commission of any cases in which they have made use of the derogations referred to in this paragraph. Member States shall review those cases every two years as part of the national progress reporting referred to in Article 15.

7. Where a Member State has notified the Commission of a case in which it has made use of a derogation referred to in paragraph 6, the requirement set out in paragraph 1, point (c), in terms of the maximum distance between recharging pools, shall be deemed to have been complied with.

8. By way of derogation from the requirements set out in paragraph 1, points (a), (b), (c) and (d), relating to the total power output of publicly accessible recharging pools dedicated to heavy-duty electric vehicles and from the requirement set out in paragraph 1, point (c), relating to the maximum distance between those recharging pools, Cyprus may submit to the Commission a reasoned request for authorisation to apply lower requirements in terms of level of total power output of publicly accessible recharging pools dedicated to heavy-duty electric vehicles or to apply a longer maximum distance, of up to 100 km, between those recharging pools, or both, provided that such request, if authorised, would not impede the circulation of heavy-duty electric vehicles in that Member State.

The Commission shall, within six months of receipt of a reasoned request submitted pursuant to the first subparagraph, adopt a decision as justified in each case. Any authorisation granted to Cyprus pursuant to such decision shall be valid for a maximum of four years. Where Cyprus seeks to extend the validity of the authorisation, it may submit a further reasoned request to the Commission before the expiry of the authorisation.

9. By 31 December 2030, neighbouring Member States shall ensure that the maximum distances between recharging pools referred to in paragraph 1, points (c) and (d), are not exceeded for cross-border sections of the TEN-T core road network and TEN-T comprehensive road network. Before that date, particular attention shall be paid to cross-border sections and neighbouring Member States shall make all possible efforts to respect those maximum distances as soon as they deploy the recharging infrastructure along the cross-border sections of the TEN-T road network.

Article 5

Recharging infrastructure

1. Operators of recharging points shall, at the publicly accessible recharging points operated by them, provide end users with the possibility to recharge their electric vehicle on an ad hoc basis.

At publicly accessible recharging points deployed from 13 April 2024, recharging on an ad hoc basis shall be possible using a payment instrument that is widely used in the Union. To that end, operators of recharging points shall accept electronic payments at those points through terminals and devices used for payment services, including at least one of the following:

(a) payment card readers;

(b) devices with a contactless functionality that is at least able to read payment cards;

(c) for publicly accessible recharging points with a power output below 50 kW, devices using an internet connection and allowing for secure payment transactions such as those generating a specific Quick Response code.

From 1 January 2027, operators of recharging points shall ensure that all publicly accessible recharging points operated by them, with a power output equal to or more than 50 kW deployed along the TEN-T road network or deployed on a safe and secure parking area, including recharging points deployed before 13 April 2024, comply with the requirements set out in points (a) or (b).

A single payment terminal or device referred to in the second subparagraph may serve a number of publicly accessible recharging points within a recharging pool.

The requirements laid down in this paragraph shall not apply to publicly accessible recharging points that do not require payment for the recharging service.

2. Operators of recharging points shall ensure that when they offer automatic authentication at a publicly accessible recharging point operated by them, end users always have the right to not make use of the automatic authentication and instead either to recharge their vehicle on an ad hoc basis, as provided for in paragraph 1, or to use another contract-based recharging solution offered at that recharging point. Operators of recharging points shall clearly show that option to end users and offer it to them in a convenient manner at each publicly accessible recharging point operated by them, at which they make available automatic authentication.

3. Prices charged by operators of publicly accessible recharging points shall be reasonable, easily and clearly comparable, transparent and non-discriminatory. Operators of publicly accessible recharging points shall not discriminate, through the prices charged, between end users and mobility service providers or between different mobility service providers. However, the level of prices may be differentiated, but only if the differentiation is proportionate and objectively justified.

4. At publicly accessible recharging points with a power output equal to or more than 50 kW, the ad hoc price charged by the operator shall be based on the price per kWh for the electricity delivered. In addition, the operators of those recharging points can charge an occupancy fee as a price per minute to discourage long occupancy of the recharging point.

Operators of publicly accessible recharging points with a power output equal to or more than 50 kW shall, at the recharging stations, show the ad hoc price per kWh and any possible occupancy fee expressed in price per minute so that that information is known to end users before they initiate a recharging session and price comparison is facilitated.

Operators of publicly accessible recharging points with a power output of less than 50 kW shall, at the recharging stations operated by them, make the information on the ad hoc price clearly and easily available, with all its price components, so that that information is known to end users before they initiate a recharging session and price comparison is facilitated. The applicable price components shall be presented in the following order:

— price per kWh;

— price per minute;

— price per session; and

— any other price component that applies.

The first and second subparagraphs shall apply to all recharging points deployed from 13 April 2024.

5. Prices charged by mobility service providers to end users shall be reasonable, transparent and non-discriminatory. Mobility service providers shall make available to end users, prior to the start of an intended recharging session, all price information specific to that recharging session, through freely available, widely supported electronic means, clearly distinguishing all price components, including applicable e-roaming costs and other fees or charges applied by the mobility service provider. The fees shall be reasonable, transparent and non-discriminatory. Mobility service providers shall not apply any extra charges for cross-border e-roaming.

6. Member States shall ensure that their authorities regularly monitor the recharging infrastructure market, and in particular, that they monitor the compliance of operators of recharging points and mobility service providers with paragraphs 3 and 5. Member States shall also seek to ensure that their authorities regularly monitor possibly unfair commercial practices affecting consumers.

7. By 14 October 2024, operators of recharging points shall ensure that all publicly accessible recharging points operated by them are digitally-connected recharging points.

8. Operators of recharging points shall ensure that all publicly accessible recharging points operated by them and built after 13 April 2024 or renovated after 14 October 2024 are capable of smart recharging.

9. Member States shall take the necessary measures to ensure that within parking and rest areas along the TEN-T road network where alternative fuels infrastructure is deployed, the exact location of the alternative fuels infrastructure is adequately signposted.

10. By 14 April 2025, the operators of publicly accessible recharging points shall ensure that all direct current (DC) publicly accessible recharging points operated by them have a fixed recharging cable installed.

11. Where the operator of a recharging point is not the owner of that point, the owner shall make available to the operator, in accordance with the arrangements between them, a recharging point with the technical characteristics which enable the operator to comply with the obligations set out in paragraphs 2, 7, 8 and 10.

Article 6

Targets for hydrogen refuelling infrastructure of road vehicles

1. Member States shall ensure that, in their territory, a minimum number of publicly accessible hydrogen refuelling stations are deployed by 31 December 2030.

To that end, Member States shall ensure that by 31 December 2030 publicly accessible hydrogen refuelling stations designed for a minimum cumulative capacity of 1 tonne per day and equipped with at least a 700 bar dispenser are deployed with a maximum distance of 200 km between them along the TEN-T core network.

Member States shall ensure that, by 31 December 2030, at least one publicly accessible hydrogen refuelling station is deployed in each urban node. Member States shall ensure that an analysis is carried out to determine the best location for such refuelling stations and that the analysis examines in particular the deployment of such refuelling stations in multimodal hubs where other transport modes could also be supplied.

Member States shall set out in their national policy frameworks a clear linear trajectory towards meeting the 2030 targets, along with a clear indicative target for 2027 that delivers sufficient coverage of the TEN-T core network with a view to meeting developing market demands.

2. Neighbouring Member States shall ensure that the maximum distance referred to in paragraph 1, second subparagraph, is not exceeded for cross-border sections of the TEN-T core network.

3. The operator of a publicly accessible refuelling station, or, where the operator is not the owner, the owner of that station in accordance with the arrangements between them, shall ensure that the station is designed to serve light-duty and heavy-duty vehicles.

4. By way of derogation from paragraph 1 of this Article, along roads of the TEN-T core network with a total annual average daily traffic of fewer than 2 000 heavy-duty vehicles and where the deployment of infrastructure cannot be justified in socio-economic cost-benefit terms, Member States may reduce by up to 50 % the capacity of a publicly accessible hydrogen refuelling station required pursuant to paragraph 1 of this Article, provided that the requirements set out in that paragraph in terms of the maximum distance between hydrogen refuelling stations and the dispenser pressure are complied with. Member States shall notify the Commission of any cases in which they have made use of the derogation referred to in this paragraph. Member States shall review those cases every two years as part of the national progress reporting referred to in Article 15.

5. By way of derogation from paragraph 1 of this Article, if the costs of the deployment of the infrastructure are disproportionate to the benefits, including the environmental benefits, Member States may decide not to apply paragraph 1 of this Article to:

(a) outermost regions of the Union referred to in Article 349 TFEU; or

(b) islands falling within the definition of small connected systems or small isolated systems according to Directive (EU) 2019/944.

In such cases, Member States shall justify their decisions to the Commission and shall make available all relevant information in their national policy frameworks.

Article 7

Hydrogen refuelling infrastructure

1. Operators of hydrogen refuelling points shall, at the publicly accessible refuelling points operated by them, provide end users with the possibility to refuel on an ad hoc basis.

Ad hoc refuelling shall be possible at all publicly accessible hydrogen refuelling points using a payment instrument that is widely used in the Union. To that end, operators of those points shall accept electronic payments through terminals and devices used for payment services, including at least one of the following:

(a) payment card readers;

(b) devices with a contactless functionality that is at least able to read payment cards.

For publicly accessible hydrogen refuelling points deployed after 13 April 2024, the requirements set out in this paragraph shall apply from their deployment. For publicly accessible refuelling points deployed before 13 April 2024, the requirements set out in this paragraph shall apply from 14 October 2024.

Where the operator of the hydrogen refuelling point is not the owner of that point, the owner shall make available to the operator, in accordance with the arrangements between them, hydrogen refuelling points with the technical characteristics which enable the operator to comply with the obligations set out in this paragraph.

2. Prices charged by the operators of publicly accessible hydrogen refuelling points shall be reasonable, easily and clearly comparable, transparent and non-discriminatory. Operators of publicly accessible hydrogen refuelling points shall not discriminate, through the prices charged, between end users and mobility service providers or between different mobility service providers. However, the level of prices may be differentiated, but only if the differentiation is objectively justified.

3. Operators of hydrogen refuelling points shall clearly show information on the ad hoc price per kg at the publicly accessible hydrogen refuelling stations operated by them, so that that information is known to end users before they initiate a refuelling session and price comparison is facilitated.

4. Operators of publicly accessible hydrogen refuelling stations may provide hydrogen refuelling services to customers on a contractual basis, including in the name and on behalf of other mobility service providers. Mobility service providers shall charge prices to end users that are reasonable, transparent and non-discriminatory. Mobility service providers shall make available to end users all price information specific to their intended refuelling session prior to its start, through freely available, widely supported electronic means, clearly distinguishing all price components charged by the operator of the hydrogen refuelling point, including applicable e-roaming costs and other fees or charges applied by them.

Article 8

Infrastructure for liquefied methane for road transport vehicles

Until 31 December 2024, Member States shall ensure that an appropriate number of publicly accessible refuelling points for liquefied methane are deployed, at least along the TEN-T core network, in order to allow heavy-duty motor vehicles using liquefied methane to circulate throughout the Union, where there is demand, unless the costs of doing so are disproportionate to the benefits, including environmental benefits.

Article 9

Targets for shore-side electricity supply in maritime ports

1. Member States shall ensure that a minimum shore-side electricity supply for seagoing container ships and seagoing passenger ships is provided in TEN-T maritime ports.

To that end, Member States shall take the necessary measures to ensure that by 31 December 2029:

(a) TEN-T core maritime ports and TEN-T comprehensive maritime ports for which the annual number of port calls of ships that are moored at the quayside, averaged over the last three years, by seagoing container ships above 5 000 gross tonnes is above 100 are equipped to provide each year shore-side electricity supply for at least 90 % of the total number of port calls of seagoing container ships above 5 000 gross tonnes that are moored at the quayside at the maritime port concerned;

(b) TEN-T core maritime ports and TEN-T comprehensive maritime ports for which the annual number of port calls of ships that are moored at the quayside, averaged over the last three years, by seagoing ro-ro passenger ships above 5 000 gross tonnes and seagoing high-speed passenger craft above 5 000 gross tonnes is above 40 are equipped to provide each year shore-side electricity supply for at least 90 % of the total number of port calls of seagoing ro-ro passenger ships above 5 000 gross tonnes and seagoing high-speed passenger craft above 5 000 gross tonnes that are moored at the quayside at the maritime port concerned;

(c) TEN-T core maritime ports and TEN-T comprehensive maritime ports for which the annual number of port calls of ships that are moored at the quayside, averaged over the last three years, by seagoing passenger ships above 5 000 gross tonnes other than seagoing ro-ro passenger ships and seagoing high-speed passenger craft is above 25 are equipped to provide each year shore-side electricity supply for at least 90 % of the total number of port calls of seagoing passenger ships above 5 000 gross tonnes other than seagoing ro-ro passenger ships and seagoing high-speed passenger craft that are moored at the quayside at the maritime port concerned.

2. The port calls of ships referred to in Article 6(5), points (a), (b), (c), (e) and (g) of Regulation (EU) 2023/1805 shall not be taken into account for the purposes of determining the total number of port calls of ships that are moored at the quayside at the maritime port concerned under paragraph 1 of this Article.

3. Where the TEN-T core maritime port or TEN-T comprehensive maritime port is located on an island, or in an outermost region referred to in Article 349 TFEU or on the territory of Ceuta and Melilla, which is not connected directly to the electricity grid of the mainland, or in the case of an outermost region or of Ceuta and Melilla to the electricity grid of a neighbouring country, paragraph 1 of this Article shall not apply until such a connection has been completed or there is sufficient locally generated electricity capacity from non-fossil energy sources to cover the needs of the island, the outermost region or of Ceuta and Melilla, whichever is relevant.

Article 10

Targets for shore-side electricity supply in inland waterway ports

Member States shall ensure that:

(a) at least one installation providing shore-side electricity supply to inland waterway vessels is deployed at all TEN-T core inland waterway ports by 31 December 2024;

(b) at least one installation providing shore-side electricity supply to inland waterway vessels is deployed at all TEN-T comprehensive inland waterway ports by 31 December 2029.

Article 11

Targets for supply of liquefied methane in maritime ports

1. Member States shall ensure that an appropriate number of refuelling points for liquefied methane are deployed at TEN-T core maritime ports referred to in paragraph 2 to enable seagoing ships to circulate throughout the TEN-T core network by 31 December 2024. Member States shall cooperate with neighbouring Member States where that is necessary in order to ensure adequate coverage of the TEN-T core network.

2. Member States shall designate in their national policy frameworks TEN-T core maritime ports that provide access to the refuelling points for liquefied methane referred to in paragraph 1, taking into consideration port development, existing liquefied methane refuelling points and actual market demand, both in the short- and long-term, as well as other developments.

Article 12

Targets for supply of electricity to stationary aircraft

1. Member States shall ensure that, at all airports of the TEN-T core network and TEN-T comprehensive network, the provision of electricity supply to stationary aircraft is ensured as follows:

(a) by 31 December 2024, at all aircraft contact stands used for commercial air transport operations to embark or disembark passengers or to load or unload goods;

(b) by 31 December 2029, at all aircraft remote stands used for commercial air transport operations to embark or disembark passengers or to load or unload goods.

2. Member States may exempt airports of the TEN-T network with fewer than 10 000 commercial flight movements per year, averaged over the last three years, from the obligation to supply electricity to stationary aircraft at all aircraft remote stands.

3. Paragraph 1 shall not apply to specially dedicated de-icing stands, stands inside designated military areas and stands specially dedicated to general aviation aircraft below 5,7 tonnes of maximum take-off weight.

4. As of 1 January 2030 at the latest, Member States shall take the necessary measures to ensure that the electricity supplied pursuant to paragraph 1 originates from the electricity grid or is generated on site without using fossil fuels.

Article 13

Railway infrastructure

As regards railway infrastructure that is not covered by Regulation (EU) No 1315/2013, Member States shall assess the development of alternative fuel technologies and propulsion systems for rail sections that cannot be fully electrified for technical or cost-efficiency reasons, such as hydrogen- or battery-powered trains, and, if relevant, any recharging and refuelling infrastructure needs.

Article 14

National policy frameworks

1. By 31 December 2024, each Member State shall prepare and transmit to the Commission 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.

2. The national policy framework shall contain at least the following elements:

(a) an assessment of the current state and future development of the market as regards alternative fuels in the transport sector, and of the development of alternative fuels infrastructure, considering intermodal access of alternative fuels infrastructure and, where relevant, cross-border continuity and the development of alternative fuels infrastructure on islands and in the outermost regions;

(b) national targets and objectives pursuant to Articles 3, 4, 6, 8, 9, 10, 11 and 12 for which mandatory national targets are set out in this Regulation;

(c) policies and measures necessary to ensure that the mandatory targets and objectives referred to in point (b) are reached;

(d) measures, planned or adopted, to promote the deployment of alternative fuels infrastructure for captive fleets, in particular for recharging stations and hydrogen refuelling stations for public transport services and recharging stations for car sharing;

(e) measures, planned or adopted, to encourage and facilitate the deployment of recharging stations for light-duty and heavy-duty vehicles in private locations that are not accessible to the public;

(f) measures, planned or adopted, to promote alternative fuels infrastructure in urban nodes, in particular with respect to publicly accessible recharging points;

(g) measures, planned or adopted, to promote a sufficient number of publicly accessible high-power recharging points;

(h) measures, planned or adopted, necessary to ensure that the deployment and operation of recharging points, including the geographical distribution of bidirectional recharging points, contribute to the flexibility of the energy system and to the penetration of renewable electricity into the electric system;

(i) measures to ensure that publicly accessible recharging and refuelling points for alternative fuels are accessible to older persons, persons with reduced mobility and persons with disabilities in accordance with the accessibility requirements of Directive (EU) 2019/882;

(j) measures, planned or adopted, to remove possible obstacles with regard to planning, permitting, procuring and operating of alternative fuels infrastructure;

(k) an overview of the state of play, perspectives and planned measures in respect of the deployment of alternative fuels infrastructure in maritime ports other than for liquefied methane and shore-side electricity supply for use by seagoing vessels, such as for hydrogen, ammonia, methanol and electricity;

(l) an overview of the state of play, perspectives and planned measures in respect of deployment of alternative fuels infrastructure including targets, key milestones and financing needed, for hydrogen- or battery-powered trains on TEN-T rail sections that cannot be electrified;

(m) an overview of the state of play, perspectives and planned measures in respect of deployment of alternative fuels infrastructure in airports other than for electricity supply to stationary aircraft, such as for electric recharging and hydrogen refuelling for aircrafts;

(n) an overview of the state of play, perspectives, and planned measures in respect of deployment of alternative fuels infrastructure in inland navigation, such as for electricity and hydrogen.

3. The national policy framework may contain the following elements:

(a) an overview of the state of play, perspectives and planned measures for the deployment of alternative fuels infrastructure in maritime ports, such as for electricity and hydrogen, for port services as defined in Regulation (EU) 2017/352 of the European Parliament and of the Council ([31]);

(b) national targets and measures to promote alternative fuels infrastructure along the road networks which are not included in the TEN-T core network or TEN-T comprehensive network, in particular with respect to publicly accessible recharging points;

(c) measures to guarantee accessibility of recharging and refuelling infrastructure in the entire territory of the Member State, paying particular attention to rural areas to ensure their accessibility and territorial cohesion;

(d) measures to ensure that the density of publicly accessible alternative fuels infrastructure available at national level takes into account population density;

(e) national targets and objectives for the deployment of alternative fuels infrastructure related to points (a), (b), (c) and (d) for which no mandatory targets are laid down in this Regulation.

4. Member States shall ensure that the national policy frameworks take into account the needs of the different transport modes existing on their territory.

5. Member States shall ensure that national policy frameworks take into account, as appropriate, the interests of regional and local authorities, in particular where recharging and refuelling infrastructure for public transport is concerned, as well as those of the stakeholders concerned.

6. Where necessary, Member States shall cooperate, by means of consultations or joint policy frameworks, to ensure that the measures required to achieve the objectives of this Regulation are coherent and coordinated. In particular, Member States shall cooperate on establishing strategies on the use of alternative fuels and on the deployment of corresponding infrastructure in waterborne transport. The Commission shall assist the Member States in the cooperation process.

7. Support measures for alternative fuels infrastructure shall comply with the relevant Union State aid rules.

8. Each Member State shall make its draft national policy framework publicly available and shall ensure that the public is given early and effective opportunities to participate in the preparation of the draft national policy framework.

9. The Commission shall assess the draft national policy frameworks and may issue recommendations to Member States. Those recommendations shall be issued no later than six months after the submission of the draft national policy frameworks as referred to in paragraph 1 of this Article. They may, in particular, address:

(a) the level of ambition of targets and objectives with a view to complying with the obligations set out in Articles 3, 4, 6, 8, 9, 10, 11, 12 and 13;

(b) policies and measures relating to national targets and objectives.

10. Each Member State shall take due account of any recommendations from the Commission in its final national policy framework. If the Member State concerned does not address a recommendation or a substantial part thereof, that Member State shall provide a written explanation to the Commission.

11. By 31 December 2025, each Member State shall draft its final national policy framework in an easily readable and understandable form and notify it to the Commission. Those final national policy frameworks shall be made publicly available by the Commission.

([31]) Regulation (EU) 2017/352 of the European Parliament and of the Council of 15 February 2017 establishing a framework for the provision of port services and common rules on the financial transparency of ports (OJ L 57, 3.3.2017, p. 1).

Article 15

National reporting

1. By 31 December 2027 and every two years thereafter, each Member State shall submit to the Commission a standalone national progress report on the implementation of its national policy framework. The report shall be drafted in an easily readable and understandable form and shall be made publicly available by the Commission.

2. The national progress report shall cover the information listed in Annex I and shall, where appropriate, include a relevant justification of the level of achievement of the national targets and objectives referred to in Article 14(2), as well as an indication of the measures to be taken to achieve those targets and objectives in the future.

3. By 30 June 2024 and every three years thereafter, Member States shall assess how the deployment and operation of recharging points could enable electric vehicles to further contribute to the flexibility of the energy system, including their participation in the balancing market, and to the further absorption of renewable electricity. That assessment shall take into account all types of recharging points, including those offering smart and bi-directional recharging, and all power outputs, whether public or private, and provide recommendations in terms of type of recharging point, supporting technology and geographical distribution in order to facilitate the ability of users to integrate their electric vehicles in the system. That assessment shall identify appropriate measures to be implemented in order to meet the requirements set out in this Regulation including those to ensure the consistency of infrastructure planning with the corresponding grid planning. That assessment shall take into account input from all stakeholders and shall be made publicly available. Each Member State may request its regulatory authority to carry out that assessment. On the basis of the results of the assessment, Member States shall, if necessary, take appropriate measures for the deployment of additional recharging points and include those measures in the national progress reports referred to in paragraph 1 of this Article. The assessment and measures shall be taken into account by the system operators in the network development plans referred to in Article 32(3) and Article 51 of Directive (EU) 2019/944.

4. On the basis of input from transmission system operators and distribution system operators, the regulatory authority of each Member State shall assess, by 30 June 2024 and every three years thereafter, the potential contribution of bidirectional recharging to reducing user and system costs and increasing the renewable electricity share in the electricity system. That assessment shall be made publicly available. On the basis of the results of the assessment, Member States shall, if necessary, take appropriate measures to adjust the availability and geographical distribution of bidirectional recharging points in private areas and include them in the national progress reports referred to in paragraph 1.

Article 16

Content, structure and format of national policy frameworks and national progress reports

By 14 October 2024, the Commission shall adopt guidance and templates concerning the content, structure and format of the national policy frameworks to be submitted by the Member States pursuant to Article 14 and the content of the national progress reports to be submitted by the Member States pursuant to Article 15(1). The Commission may adopt guidance and templates to facilitate the effective application across the Union of any other provisions of this Regulation.

Article 17

Review of national policy frameworks and national progress reports

1. By 31 December 2026, the Commission shall assess the national policy framework notified by Member States pursuant to Article 14(11) and shall submit to the European Parliament and to the Council a report on the assessment of those national policy frameworks and their coherence at Union level, including a first assessment of the expected level of achievement of the national targets and objectives referred to in Article 14(2).

2. The Commission shall assess the national progress reports submitted by Member States pursuant to Article 15(1) and shall, as appropriate, issue recommendations to Member States to ensure the achievement of the objectives and compliance with the obligations laid down in this Regulation.

3. The Member State concerned shall, within six months of receipt of the recommendations referred to in paragraph 2, notify the Commission of how it intends to implement the recommendations. If the Member State concerned decides not to implement the recommendations or a substantial part thereof, it shall provide the Commission with its reasons.

4. After the submission by the Member State of the notification or the reasoning referred to in paragraph 3, the Member State concerned shall set out in its next national progress report how it has implemented the recommendations.

5. The Commission shall submit to the European Parliament and to the Council a report on its assessment of the national progress reports one year after submission of those national progress reports by Member States pursuant to Article 15(1). That assessment shall contain an evaluation of:

(a) the progress made by Member States with regard to the achievement of the targets and objectives referred to in Article 14(2), including the Member States' responses to the Commission recommendations pursuant to paragraph 2 of this Article;

(b) the coherence of the development of alternative fuel infrastructure at Union level.

6. On the basis of the final national policy frameworks referred to in Article 14(11), the national progress reports referred to in Article 15(1) and the reports referred to in Article 18(1), the Commission shall make publicly available and regularly update information on the national targets and the objectives submitted by each Member State regarding:

(a) the number of publicly accessible recharging points and recharging stations, separately for recharging points dedicated to light-duty vehicles and recharging points and recharging stations dedicated to heavy-duty vehicles, and in accordance with the categorisation provided for in Annex III;

(b) the number of publicly accessible hydrogen refuelling points;

(c) the infrastructure for shore-side electricity supply in maritime ports and inland waterway ports of the TEN-T core network and TEN-T comprehensive network;

(d) the infrastructure for electricity supply for stationary aircraft in airports of the TEN-T core network and TEN-T comprehensive network;

(e) the number of refuelling points for liquefied methane in maritime ports and inland waterway ports of the TEN-T core network and TEN-T comprehensive network;

(f) the number of publicly accessible refuelling points for liquefied methane for motor vehicles;

(g) the number of publicly accessible refuelling points for CNG for motor vehicles;

(h) recharging and refuelling points for other alternative fuels in maritime ports and inland waterway ports of the TEN-T core network and TEN-T comprehensive network;

(i) recharging and refuelling points for other alternative fuels at airports of the TEN-T core network and TEN-T comprehensive network;

(j) recharging and refuelling points for alternative fuels for rail transport.

Article 18

Progress tracking

1. By 31 March 2025 and by 31 March of every year thereafter, Member States shall report to the Commission the total aggregated recharging power output and the number of publicly accessible recharging points deployed and the number of battery electric vehicles and plug-in hybrid vehicles registered on their territory on 31 December of the previous year, in accordance with the requirements set out in Annex III.

2. Without prejudice to the procedure laid down in Article 258 TFEU, where it is evident from the report referred to in paragraph 1 of this Article or from any information available to the Commission that a Member State is at risk of not achieving its national targets set out in Article 3(1) of this Regulation, the Commission may issue a finding to that effect and recommend the Member State concerned to take corrective measures to achieve the national targets. Within three months following the receipt of the Commission's findings, the Member State concerned shall notify to the Commission:

(a) the corrective measures that it plans to implement in order to achieve the national targets set out in Article 3(1) of this Regulation, including any additional actions that the Member State intends to implement in order to achieve those targets; and

(b) a clear timetable for actions that will enable the assessment of annual progress towards achievement of those targets.

Where the Commission finds that the corrective measures are satisfactory, the Member State concerned shall update its latest national progress report referred to in Article 15 with those corrective measures and submit it to the Commission.

The Commission shall make its recommendations and the corrective measures and additional actions by the Member State concerned publicly available.

Article 19

User information

1. Relevant, consistent and clear information shall be made available as regards motor vehicles placed on the market which are capable of being regularly recharged or refuelled.

That information shall be made available:

(a) in motor vehicle manuals and on motor vehicles, by the manufacturers, when those vehicles are placed on the market;

(b) at recharging and refuelling points, by recharging and refuelling point operators; and

(c) in motor vehicle dealerships, by the distributors.

2. Whether vehicles and infrastructures or fuels and vehicles covered by paragraph 1 of this Article are compatible shall be determined in compliance with the technical specifications referred to in points 10.1 and 10.2 of Annex II.

Where such technical specifications refer to a graphical expression, including a colour coding scheme, the graphical expression shall be simple and easy to understand.

That graphical expression shall be placed in a clearly visible manner:

(a) by refuelling point operators, on corresponding pumps and their nozzles at all refuelling points operated by them, from the date on which fuels are placed on the market;

(b) by manufacturer, in the immediate proximity of all fuel tanks' filling caps of motor vehicles recommended for and compatible with that fuel and in motor vehicle manuals, when such motor vehicles are placed on the market.

3. When fuel prices are shown at a refuelling station, Member States shall ensure that a comparison of the relevant unit prices is shown, where appropriate, and in particular for hydrogen, for information purposes following the common methodology for alternative fuels unit price comparison referred to in point 10.3 of Annex II.

4. In situations where European standards setting the technical specifications of a fuel do not include labelling requirements to indicate compliance with the standards concerned, where the labelling requirements do not refer to a graphical expression, including colour coding schemes, or where the labelling requirements are not suitable for achieving the objectives of this Regulation, the Commission may, for the purposes of the uniform implementation of paragraphs 1 and 2, mandate the European standardisation organisations to develop compatibility labelling specifications.

On the basis of the compatibility labelling specifications developed by the European standardisation organisations pursuant to the mandate referred to in the first subparagraph, the Commission shall adopt implementing acts determining the graphical expression, including a colour coding scheme, of compatibility for fuels introduced in the Union market which reach the level of 1 % of the total volume of sales, in the assessment of the Commission, in more than one Member State.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 23(2).

5. Where provisions on labelling of the respective European standards are updated or new European standards for alternative fuels are developed, the corresponding requirements on labelling shall apply to all recharging and refuelling points no later than 24 months after the corresponding implementing act is adopted and to all motor vehicles placed on the market from the date that the corresponding implementing act enters into force.

Article 20

Data provisions

1. Member States shall appoint an Identification Registration Organisation ('IDRO'). The IDRO shall issue and manage unique identification ('ID') codes to identify at least operators of recharging points and mobility service providers, by 14 April 2025.

2. By 14 April 2025, operators of publicly accessible recharging points and refuelling points for alternative fuels, or, in accordance with the arrangements between them, the owners of those points, shall ensure the availability of static data and dynamic data concerning alternative fuels infrastructure operated by them, or services inherently linked to such infrastructure that they provide or they outsource, at no cost. The following data types shall be made available:

(a) static data for publicly accessible recharging points and refuelling points for alternative fuels operated by them:

  (i) geographic location of the recharging points and refuelling points for alternative fuels,

  (ii) number of connectors,

  (iii) number of parking spaces for people with disabilities,

  (iv) contact information of the owner and operator of the recharging station and refuelling station,

  (v) opening hours;

(b) further static data for publicly accessible recharging points operated by them:

  (i) ID codes, at least of the recharging point operator,

  (ii) type of connector,

  (iii) type of current (AC/DC),

  (iv) maximum power output (kW) of the recharging station,

  (v) maximum power output (kW) of the recharging point,

  (vi) vehicle type compatibility;

(c) dynamic data for publicly accessible recharging points and refuelling points for alternative fuels operated by them:

  (i) operational status (operational/out of order),

  (ii) availability (in use/not in use),

  (iii) ad hoc price,

  (iv) electricity supplied is 100 % renewable (yes/no).

The requirements laid down in point (c) shall not apply to publicly accessible recharging points that do not require payment for the recharging service.

3. Each operator of publicly accessible recharging and refuelling points for alternative fuels, or, in accordance with the arrangements between them, the owner of those points, shall set up an Application Programme Interface (API) that provides free and unrestricted access to the data referred to in paragraph 2, and shall submit information on that API to the national access points.

The API of each operator of recharging and refuelling points, or, in accordance with the arrangements between them, the API of the owner of those points, shall comply with common technical requirements established by the Commission in the delegated acts referred to in paragraph 6 to enable an automated and uniform data exchange between the operators of publicly accessible recharging and refuelling points and data users.

4. By 31 December 2024, Member States shall ensure that the data referred to in paragraph 2 of this Article are made accessible on an open and non-discriminatory basis to all data users through their national access points in accordance with the relevant provisions related to such data in Delegated Regulation (EU) 2022/670 and in compliance with the additional complementary specifications that may be adopted in accordance with paragraph 7 of this Article. Where Member States aggregate data under their national access points, they may provide those data to a common European access point by means of an API.

5. By 31 December 2026, the Commission shall establish a common European access point to function as a data gateway facilitating the access to the data referred to in paragraph 2 from the different national access points. The Commission shall ensure that the common European access point is easily accessible and can be used by all data users, for example through the creation of a dedicated web portal.

6. The Commission shall be empowered to adopt delegated acts in accordance with Article 22 to:

(a) amend paragraph 2 of this Article to include additional data types concerning publicly accessible recharging points and refuelling points for alternative fuels or services inherently linked to such infrastructure that the operators of that infrastructure provide or outsource in view of technological developments or new services made available on the market; and

(b) supplement this Regulation by laying down common technical requirements for a common application programme interface to enable an automated and uniform data exchange between the operators of publicly accessible recharging points and refuelling points for alternative fuels and data users.

7. The Commission may adopt implementing acts laying down:

(a) specifications that are complementary to those set out in Delegated Regulation (EU) 2022/670, related to the data format, frequency and quality in which the data referred to in paragraph 2 of this Article and in the delegated acts adopted on the basis of paragraph 6 of this Article shall be made available;

(b) detailed procedures enabling the availability and accessibility of data required pursuant to this Article.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 23(2).

Those implementing acts shall be without prejudice to Directive 2010/40/EU of the European Parliament and of the Council ([32]) and the delegated and implementing acts adopted on the basis thereof.

8. The delegated and implementing acts referred to in paragraphs 6 and 7 shall provide for reasonable transitional periods before the provisions contained therein, or amendments thereof, become binding on the operators or owners of recharging points and refuelling points for alternative fuels.

([32]) Directive 2010/40/EU of the European Parliament and of the Council of 7 July 2010 on the framework for the deployment of Intelligent Transport Systems in the field of road transport and for interfaces with other modes of transport (OJ L 207, 6.8.2010, p. 1).

Article 21

Common technical specifications

1. The technical specifications set out in Annex II shall apply.

2. In accordance with Article 10 of Regulation (EU) No 1025/2012, the Commission may request European standardisation organisations to draft European standards setting technical specifications for areas referred to in Annex II to this Regulation for which no common technical specifications have been adopted by the Commission.

3. The Commission shall adopt delegated acts in accordance with Article 22 to:

(a) amend Annex II by introducing technical specifications for the areas listed in that Annex to enable full technical interoperability of the recharging and refuelling infrastructure in terms of physical connections, communication exchanges and access for persons with reduced mobility to those areas; and

(b) without undue delay and at the latest 12 months after the adoption of the relevant standards, amend Annex II by updating the references to the standards referred to in the technical specifications set out in that Annex.

4. Where delegated acts referred to in paragraph 3 are to apply to existing infrastructures, those delegated acts shall be based on a cost-benefit analysis to be submitted to the European Parliament and the Council together with those delegated acts.

5. Where European standards setting the technical specifications of a fuel are developed after the adoption by the Commission of an implementing act referred to in Article 19(4), second subparagraph, and they include provisions requiring labelling to indicate compliance with the standards concerned and refer to a graphical expression, including colour coding schemes, the amendments of Annex II adopted by the delegated acts referred to in paragraph 3 of this Article shall include an indication of which of those standards or implementing acts are to apply and, where appropriate, repeal the relevant implementing acts.

6. The amendments of Annex II adopted by the delegated acts referred to in paragraph 3 shall include reasonable transitional periods for any technical specifications that those delegated acts introduce or amend, during which they shall not be binding in respect of the infrastructure concerned.

Article 22

Exercise of the delegation

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.

2. The power to adopt delegated acts referred to in Articles 20 and 21 shall be conferred on the Commission for a period of five years from 13 April 2024. The Commission shall draw up a report in respect of the delegation of power not later than nine months before the end of the five-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension not later than three months before the end of each period.

3. The delegation of power referred in Articles 20 and 21 may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the *Official Journal of the European Union* or at a later date specified therein. It shall not affect the validity of any delegated acts already in force.

4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making.

5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and to the Council.

6. A delegated act adopted pursuant to Articles 20 and 21 shall enter into force only if no objection has been expressed either by the European Parliament or the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended by three months at the initiative of the European Parliament or of the Council.

Article 23

Committee procedure

1. The Commission shall be assisted by a committee. That committee shall be a committee within the meaning of Regulation (EU) No 182/2011.

2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.

Where the committee delivers no opinion, the Commission shall not adopt the draft implementing act and of Article 5(4), third subparagraph, of Regulation (EU) No 182/2011 shall apply.

Article 24

Reporting and review

1. By 31 December 2024, the Commission shall submit to the European Parliament and to the Council a technology and market-readiness report dedicated to heavy-duty vehicles. That report shall take into account the initial indications of the preferences of the market. It shall also consider technological developments and the development of the technical specifications achieved by that date and developments expected in the short term, in particular regarding recharging and refuelling standards and technologies, such as high-power recharging standards and electric road systems, and the use of liquid hydrogen.

Regarding hydrogen refuelling stations, the Commission shall further assess the requirements referred to in Article 6 in light of the technological and market developments, the need to specify a higher capacity for those stations, the need to specify targets for liquid hydrogen refuelling infrastructure, as well as the date for the extension of the requirements for the deployment of hydrogen refuelling stations to the TEN-T comprehensive network.

2. By 31 December 2026 and every five years thereafter, the Commission shall review this Regulation.

In its review, the Commission shall assess, in particular, the following elements:

(a) whether the traffic thresholds referred to in Article 3(6) and (7), in Article 4(4) and (5) and in Article 6(4) are still relevant in view of the expected increase of the share of hydrogen-powered vehicles or battery electric vehicles compared to the total fleet of vehicles circulating in the Union;

(b) whether the electronic means of payment referred to in Article 5(1) are still appropriate;

(c) the functioning of the pricing mechanism for publicly accessible recharging stations and whether the pricing components laid down in Article 5(4), provide consumers with clear and sufficient information;

(d) a possible decrease of the gross tonnage threshold, laid down in Article 9, as well as a possible extension of the scope of this Regulation to other ship types following relevant adjustments in other relevant Union legal acts;

(e) the current state and future development of the market for hydrogen and electric propulsion aviation;

(f) the effects of this Regulation as regards the potential and the magnitude of carbon leakage.

As part of this review, the Commission shall also assess the extent to which the implementation of this Regulation has met its objectives and the extent to which it has impacted the competitiveness of the relevant sectors covered by it. That review shall also cover the interaction of this Regulation with other relevant Union legal acts and shall identify any provisions that could be updated and simplified, as well as actions and measures that have been or could be taken to reduce the total cost pressure on relevant sectors. As part of the Commission's analysis of the efficiency of this Regulation, the review shall also include an assessment of the burden this Regulation imposes on businesses.

3. The Commission shall consider, if appropriate, whether to accompany that review with a proposal to amend this Regulation, in view of the outcome of the assessment referred to in paragraph 2.

Article 25

Repeal

1. Directive 2014/94/EU and Delegated Regulations (EU) 2019/1745 and (EU) 2021/1444 are repealed with effect from 13 April 2024.

2. References to Directive 2014/94/EU shall be construed as references to this Regulation and shall be read in accordance with the correlation table in Annex IV.

Article 26

Entry into force and application

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 13 April 2024.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Strasbourg, 13 September 2023.

For the European Parliament	*For the Council*
The President	*The President*
R. METSOLA	J. M. ALBARES BUENO

ANNEX I

Reporting

The national progress report referred to in Article 15(1) shall include at least the following elements:

1. target setting

   (a) vehicle uptake projections for 31 December of the years 2025, 2030 and 2035 for:

   — light-duty vehicles, separately for battery electric light-duty vehicles, plug-in hybrid light-duty vehicles and hydrogen-powered light-duty vehicles;

   — heavy-duty vehicles, separately for battery electric heavy-duty vehicles and hydrogen-powered heavy-duty vehicles;

   (b) targets for 31 December of the years 2025, 2027, 2030 and 2035 for:

   — recharging infrastructure dedicated to light-duty electric vehicles: number of recharging stations and power output (classification of recharging stations in accordance with Annex III);

   — development of recharging stations for light-duty electric vehicles not accessible to the public, if applicable;

   — recharging infrastructure dedicated to heavy-duty electric vehicles: number of recharging stations and power output;

   — development of recharging stations for heavy-duty electric vehicles not accessible to the public, if applicable;

   — hydrogen refuelling stations: number of refuelling stations, capacity of the refuelling stations and connector provided;

   — road refuelling stations for liquefied methane: number of refuelling stations and capacity of stations;

   — refuelling points for liquefied methane in maritime ports of the TEN-T core network and TEN-T comprehensive network, including location (port) and capacity per port;

   — shore-side electricity supply in maritime ports of the TEN-T core network and TEN-T comprehensive network, including exact location (port) and capacity of each installation within the port;

   — shore-side electricity supply in inland waterway ports of the TEN-T core network and TEN-T comprehensive network including location (port) and capacity;

   — electricity supply for stationary aircraft, number of installations per airport of the TEN-T core network or airport of the TEN-T comprehensive network;

   — other national targets and objectives for which no Union-wide mandatory national targets exist, if applicable. For alternative fuels infrastructure in ports, airports and for rail the location and capacity/size of the installation has to be reported;

2. utilisation rates: for the categories under point 1(b), reporting the utilisation of that infrastructure;

3. the level of achievement of the national targets reported for the deployment of alternative fuels in the different transport modes (road, rail, water and air):

   — level of achievement of the infrastructure deployment targets as referred to in point 1(b) for all applicable transport modes, in particular for recharging stations, electric road system (if applicable), hydrogen refuelling stations, shore-side electricity supply in maritime ports and inland waterway ports, liquefied methane bunkering in TEN-T core maritime ports, other alternative fuels infrastructure in ports, electricity supply to stationary aircrafts;

   — for recharging points, specifying the ratio of public to private infrastructure;

   — deployment of alternative fuels infrastructure within urban nodes;

4. the review of the cases in which the Member States have made use of the derogations laid down in Article 3, paragraphs (6), (7) and (8), Article 4, paragraphs (6), (7) and (8) and Article 6, paragraph (4);

5. legal measures: information on legal measures, which may consist of legislative, regulatory or administrative measures to support the build-up of alternative fuels infrastructure, such as building permits, parking place permits, certification of the environmental performance of businesses and recharging and refuelling stations concessions;
6. information on the policy measures supporting the implementation of the national policy framework, including:
   — direct incentives for the purchase of means of transport that use alternative fuels or for building the infrastructure;
   — availability of tax incentives to promote means of transport that use alternative fuels and the relevant infrastructure;
   — use of public procurement in support of alternative fuels, including joint procurement;
   — demand-side non-financial incentives, for example preferential access to restricted areas, parking policy and dedicated lanes;
7. public deployment and manufacturing support, including:
   — annual public budget allocated for the deployment of alternative fuels infrastructure, broken down by alternative fuel and by transport mode (road, rail, water and air);
   — annual public budget allocated to support manufacturing plants for alternative fuel technologies, broken down by alternative fuel;
   — consideration of any particular needs during the initial phase of the deployment of alternative fuels infrastructure;
8. research, technological development and demonstration (RTD&D): annual public budget allocated to support alternative fuels RTD&D.

ANNEX II

Technical specifications

1. Technical specifications for electricity supply for road transport

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:

— direct current (DC) normal 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;

— 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;

— 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.

1.3. Recharging points for L-category motor vehicles:

The publicly accessible alternating current (AC) recharging points reserved for L-category electric vehicles up to 3,7 kW shall be equipped, for interoperability purposes, with at least one of the following:

(a) socket-outlets or vehicle connectors of Type 3A as described in standard EN 62196-2:2017 (for Mode 3 charging);

(b) socket-outlets compliant with standard IEC 60884-1:2002 +A1:2006 +A2:2013 (for Mode 1 or Mode 2 charging).

1.4. Normal-power recharging points and high-power recharging points for electric buses:

— alternating current (AC) normal-power recharging points and high-power recharging points for electric buses shall be equipped at least with connectors of Type 2 as described in standard EN 62196-2:2017;

— direct current (DC) normal-power recharging points and high-power recharging points for electric buses shall be equipped at least with connectors of the combined charging system 'Combo 2' as described in standard EN 62196-3:2014.

1.5. Contact interface automated device for electric buses on conductive recharging in mode 4, in accordance with standard EN 61851-23-1:2020, shall be equipped at least with mechanical and electrical interfaces, as defined in the standard EN 50696:2021, concerning:

— automated connection device (ACD) mounted on the infrastructure (pantograph);

— automated connection device (ACD) mounted on the roof of the vehicle;

— automated connection device (ACD) mounted underneath the vehicle;

— automated connection device (ACD) mounted on the infrastructure and connecting to the side or on the roof of the vehicle.

1.6. Technical specifications regarding the connector for recharging heavy-duty electric vehicles (DC charging).

1.7. Technical specifications for inductive static wireless recharging for passenger cars and light-duty electric vehicles.

1.8. Technical specifications for inductive static wireless recharging for heavy-duty electric vehicles.

1.9. Technical specifications for inductive dynamic wireless recharging for passenger cars and light-duty electric vehicles.

1.10. Technical specifications for inductive dynamic wireless recharging for heavy-duty-electric vehicles.

1.11. Technical specifications for inductive static wireless recharging for electric buses.

1.12. Technical specifications for inductive dynamic wireless recharging for electric buses.

1.13. Technical specifications for electric road system for dynamic overhead power supply via a pantograph for heavy-duty electric vehicles.

1.14. Technical specifications for electric road system for dynamic ground level power supply through conductive rails for passenger electric cars, light-duty electric vehicles and heavy-duty electric vehicles.

1.15. Technical specifications for battery swapping for L-category electric vehicles.

1.16. If technically feasible, technical specifications for battery swapping for passenger electric cars and light-duty electric vehicles.

1.17. If technically feasible, technical specifications for battery swapping for heavy-duty electric vehicles.

1.18. Technical specifications for recharging stations to ensure access to users with disabilities.

2. Technical specifications for communication exchange in the electric vehicle recharging sector

2.1. Technical specifications regarding communication between the electric vehicle and the recharging point (vehicle-to-grid communication).

2.2. Technical specifications regarding communication between the recharging point and the recharging point management system (back-end communication).

2.3. Technical specifications regarding communication between the recharging point operator, electromobility service providers and e-roaming platforms.

2.4. Technical specifications regarding communication between the recharging point operator and the distributed system operators.

3. Technical specifications for hydrogen supply for road transport vehicles

3.1. Outdoor hydrogen refuelling points dispensing gaseous hydrogen used as fuel on board motor vehicles shall comply at least with the interoperability requirements described in standard EN 17127:2020.

3.2. The quality characteristics of hydrogen dispensed by hydrogen refuelling points for motor vehicles shall comply with the requirements described in standard EN 17124:2022. The methods to ensure that the hydrogen quality is met are also described in the standard.

3.3. The fuelling algorithm shall comply with the requirements of standard EN 17127:2020.

3.4. Once the process of certification of standard EN ISO 17268:2020 is concluded, connectors for motor vehicles for the refuelling of gaseous hydrogen shall comply at least with that standard.

3.5. Technical specifications for connectors for refuelling points dispensing gaseous (compressed) hydrogen for heavy-duty vehicles.

3.6. Technical specifications for connectors for refuelling points dispensing liquefied hydrogen for heavy-duty vehicles.

4. Technical specifications for methane for road transport

4.1. Refuelling points for compressed natural gas (CNG) for motor vehicles shall comply with a fuelling pressure (service pressure) of 20,0 MPa gauge (200 bar) at 15 °C. A maximum fuelling pressure of 26,0 MPa with 'temperature compensation' is permitted in accordance with standard EN ISO 16923:2018.

4.2. The connector profile shall comply with Regulation No 110 of the Economic Commission for Europe of the United Nations referring to parts I and II in standard EN ISO 14469:2017.

4.3. Refuelling points for liquefied methane for motor vehicles shall comply with a fuelling pressure lower than the maximum allowable working pressure of the vehicle tank as addressed in standard EN ISO 16924:2018, 'Natural gas fuelling stations – LNG stations for fuelling vehicles'. In addition, the connector profile shall comply with standard EN ISO 12617:2017 'Road vehicles – Liquefied natural gas (LNG) refuelling connector −3,1 MPa connector'.

5. Technical specifications for electricity supply for maritime transport and inland navigation

5.1. Shore-side electricity supply for seagoing ships, including the design, installation and testing of the systems, shall comply at least with the technical specifications of standard IEC/IEEE 80005-1:2019/AMD1:2022 for high-voltage shore connections.

5.2. Plugs, socket-outlets and ship couplers for high-voltage shore connection shall comply at least with the technical specification of standard IEC 62613-1:2019.

5.3. Shore-side electricity supply for inland waterway vessels shall comply at least with the standard EN 15869-2:2019 or standard EN 16840:2017 depending on energy requirements.

5.4. Technical specifications for shore-side battery recharging points for maritime vessels, featuring interconnectivity and system interoperability for maritime vessels.

5.5. Technical specifications for shore-side battery recharging points for inland navigation vessels, featuring interconnectivity and system interoperability for inland navigation vessels.

5.6. Technical specifications for vessel-to-port grid communication interfaces in automated on-shore power supply (OPS) and battery recharging systems for maritime vessels.

5.7. Technical specifications for vessel-to-port grid communication interfaces in automated on-shore power supply (OPS) and battery recharging systems for inland navigation vessels.

5.8. If technically feasible, technical specifications for battery swapping and recharging at onshore stations for inland navigation vessels.

6. Technical specifications for hydrogen bunkering for maritime transport and inland navigation

6.1. Technical specifications for refuelling points and bunkering for gaseous (compressed) hydrogen for maritime hydrogen-powered vessels.

6.2. Technical specifications for refuelling points and bunkering for gaseous (compressed) hydrogen inland navigation hydrogen-powered vessels.

6.3. Technical specifications for refuelling points and bunkering for liquefied hydrogen for maritime hydrogen-powered vessels.

6.4. Technical specifications for refuelling points and bunkering for liquefied hydrogen inland navigation hydrogen-powered vessels.

7. Technical specifications for methanol bunkering for maritime transport and inland navigation

7.1. Technical specifications for refuelling points and bunkering for methanol for maritime methanol-fuelled vessels.

7.2. Technical specifications for refuelling points and bunkering for methanol for inland navigation methanol-fuelled vessels.

8. Technical specifications for ammonia bunkering for maritime transport and inland navigation

8.1. Technical specifications for refuelling points and bunkering for ammonia for maritime ammonia-fuelled vessels.

8.2. Technical specifications for refuelling points and bunkering for ammonia for inland navigation ammonia-fuelled vessels.

9. Technical specifications for liquefied methane refuelling points for maritime transport and inland navigation

9.1. Refuelling points for liquefied methane for seagoing ships which are not covered by the International Code of the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code) shall comply at least with standard EN ISO 20519:2017.

9.2. Refuelling points for liquefied methane for inland waterway vessels shall comply at least with standard EN ISO 20519:2017 (parts 5.3 to 5.7) for interoperability purposes only.

10. Technical specifications related to fuel labelling

10.1. The 'Fuels - Identification of vehicle compatibility - Graphical expression for consumer information' label shall comply with standard EN 16942:2016+A1:2021.

10.2. The 'Identification of vehicles and infrastructures compatibility - Graphical expression for consumer information on EV power supply' shall comply at least with standard EN 17186:2019.

10.3. The common methodology for alternative fuels unit price comparison set out by Commission Implementing Regulation (EU) 2018/732 ([1]).

10.4. Technical specifications for electric recharging stations and hydrogen refuelling facilities for rail transport.

([1]) Commission Implementing Regulation (EU) 2018/732 of 17 May 2018 on a common methodology for alternative fuels unit price comparison in accordance with Directive 2014/94/EU of the European Parliament and of the Council (OJ L 123, 18.5.2018, p. 85).

ANNEX III

Reporting requirements on deployment of electric vehicles and publicly accessible recharging infrastructure

1. Member States must categorise their reporting on the deployment of electric vehicles as follows:
   — battery electric vehicles, separately for categories M_1, N_1, $M_{2/3}$ and $N_{2/3}$
   — plug-in hybrid vehicles, separately for categories M_1, N_1, $M_{2/3}$ and $N_{2/3}$

2. Member States must categorise their reporting on the deployment of publicly accessible recharging points as follows:

Category	Sub-category	Maximum power output	Definition pursuant to Article 2 of this Regulation
Category 1 (AC)	Slow AC recharging point, single-phase	P < 7,4 kW	Normal-power recharging point
	Medium-speed AC recharging point, triple-phase	7,4 kW ≤ P ≤ 22 kW	
	Fast AC recharging point, triple-phase	P > 22 kW	High-power recharging point
Category 2 (DC)	Slow DC recharging point	P < 50 kW	
	Fast DC recharging point	50 kW ≤ P < 150 kW	
	Level 1 - Ultra-fast DC recharging point	150 kW ≤ P < 350 kW	
	Level 2 - Ultra-fast DC recharging point	P ≥ 350 kW	

3. The following data must be provided separately for publicly accessible recharging infrastructure dedicated to light-duty vehicles and heavy-duty vehicles:
   — number of recharging points, to be reported for each of the categories under point 2;
   — number of recharging stations, to be reported for each of the categories under point 2;
   — total aggregated power output of the recharging stations.

ANNEX IV

Correlation table

Directive 2014/94/EU	This Regulation
Article 1	Article 1
Article 2	Article 2
Article 3	Article 14
Article 4	Articles 3, 4, 5, 9 and 10
Article 5	Article 6
–	Article 7
Article 6	Articles 8 and 11
–	Article 12
–	Article 13
Article 7	Article 19
Article 8	Article 22
Article 9	Article 23
Article 10	Articles 15, 16 and 24
–	Article 17
–	Article 18
–	Article 20
–	Article 21
–	Article 25
Article 11	–
Article 12	Article 26
Article 13	–
Annex I	Annex I
Annex II	Annex II
–	Annex III