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COMMISSION DELEGATED REGULATION (EU) …/...

of 2.4.2025

amending Regulation (EU) 2023/1804 of the European Parliament and of the Council as regards standards for wireless recharging, electric road system, vehicle-to-grid communication and hydrogen supply for road transport vehicles

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE DELEGATED ACT

Common technical specifications are indispensable for the creation of a single market for alternative fuels infrastructure. Therefore, Regulation (EU) 2023/1804[1] on the deployment of alternative fuels infrastructure includes in its Annex II a comprehensive list of technical specifications. The list of technical specifications in Annex II prescribes specific standards and identifies areas where common technical specifications are necessary but have not yet been established.

Those technical specifications cover physical connections and communication between the electric vehicle and the recharging infrastructure for road transport vehicles; hydrogen and methane supply for road transport vehicles; electricity supply, ammonia, hydrogen and methanol bunkering, and liquified methane for maritime transport and inland navigation; and fuel labelling for road transport vehicles.

Under Regulation (EU) 2023/1804, technical specifications for the interoperability of recharging and refuelling points should be specified in European or international standards. Pursuant to Article 21(3) of Regulation (EU) 2023/1804, the Commission may amend Annex II to introduce new technical specifications or update references to the standards set out in that Annex. This is 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.

Under Article 21(2) of Regulation (EU) 2023/1804, the Commission may request that European standardisation organisations (ESOs) draft European standards setting technical specifications for areas referred to in its Annex II for which common technical specifications have not yet been established. In this respect, the Commission requested in 2022 that the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC) draft appropriate European standards as regards communication exchange, electric recharging and hydrogen refuelling for road, maritime transport and inland navigation (standardisation request M/581)[2].

At present, several tasks of the 2022 standardisation request M/581 have been finalised. These include the adoption of important standards for wireless recharging for light-duty electric vehicles; dynamic ground level power supply through conductive rails for light- and heavy-duty electric vehicles; communication exchange between the electric vehicle and the recharging point (known as ‘vehicle-to-grid communication’) for light-duty and heavy-duty electric vehicles; and connectors (nozzles) for refuelling points dispensing gaseous (compressed) hydrogen for heavy-duty vehicles. Moreover, following updates to other standards such as those for normal- and high-power recharging points for light-duty electric vehicles, the Commission considers it necessary to update the corresponding references in Regulation (EU) 2023/1804.

This Commission Delegated Regulation amends Annex II to Regulation (EU) 2023/1804 to introduce new technical specifications and update references to the standards already set out in that Annex, where relevant.

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1 OJ L 234, 22.9.2023, p. 1; ELI: http://data.europa.eu/eli/reg/2023/1804/oj.

2 Commission Implementing Decision C(2022)1710 on a standardisation request to the European standardisation organisations as regards communication exchange, electricity and hydrogen supply for road, maritime transport and inland navigation in support of Directive 2014/94/EU and its planned revision under the ‘Fit for 55’ package.

2. CONSULTATIONS PRIOR TO THE ADOPTION OF THE ACT

In preparing this Commission Delegated Regulation, the Commission consulted experts from Member States and from Norway, Liechtenstein and Iceland through several meetings of the implementation sub-group of the Sustainable Transport Forum (STF) expert group (E03321/4). In total, seven meetings took place between September 2023 and June 2024. Moreover, the general objectives and contents of this Commission Delegated Regulation were discussed in the Alternative Fuels Infrastructure Committee (C49500) on 23 November 2023.

Industry experts were also kept informed of the preparatory work on this Commission Delegated Regulation as part of two STF sub-groups: the sub-group on governance & standards and the sub-group on data. The STF experts also provided technical input and recommendations[3] on standards applicable to the electromobility ecosystem that form the subject of this Regulation.

CEN and CENELEC were also kept informed of the preparatory work on this Commission Delegated Regulation. This was done through regular exchanges with the Commission in the context of the fulfilment of the current standardisation request (M-581). By letter of 17 July 2024, CEN and CENELEC informed the Commission of the standards recommended to be included in this Commission Delegated Regulation.

The draft Commission Delegated Regulation was subject to a 4-week public consultation feedback period on the Commission's Have Your Say portal. This consultation resulted in a total of 63 responses from a diverse range of stakeholders, including individual organisations, business associations, non-governmental organisations, academic and research institutions, trade unions, and EU citizens.

The feedback provided strong support for the provisions included in the draft Commission Delegated Regulation, reflecting broad recognition of its importance in achieving the desired policy objectives regarding full technical interoperability of recharging and refuelling infrastructure for alternative fuels. However, several stakeholders raised concerns and sought further clarification on specific aspects.

Stakeholders requested clarifications regarding the scope of application of provisions related to newly built or renovated recharging points. This aspect was addressed and clarified by using the terms 'installed' and 'renovated', along with a further explanation provided in a recital. Another point raised concerned the inclusion of technical provisions about private recharging points. The Commission considered that it is sufficiently clear, as stated in a recital of the draft Commission Delegated Regulation, that Regulation (EU) 2023/1804 addresses technical specifications for the interoperability of both publicly accessible and private recharging and refuelling points for alternative fuels and, therefore, concluded that no changes were required. Finally, concerns were expressed about the application of standard parts EN ISO 15118-2 and EN ISO 15118-20. Stakeholders emphasised the need for clarity on how these standard parts are to be implemented, particularly considering the mandatory and optional functionalities they include for diverse use cases and recharging modes, as well as the timeline for their application. The aspect concerning the implementation of these standard parts was clarified further in a recital. However, on the timeline for their application, the Commission considered that no changes are required as the draft Act already provides reasonable transitional periods. This specifically takes into account the publication of standard part EN ISO 15118-2, which dates back to 2016 and is fully supported by use cases and

[3] European Commission, Directorate-General for Mobility and Transport, *Mapping of the discussion concerning standards and protocols for communication exchange in the electromobility ecosystem*, Publications Office of the European Union, 2022, https://data.europa.eu/doi/10.2832/6763.

conformance tests published in 2019, as well as standard part EN ISO 15118-20, which was published in 2022. In particular, regarding EN ISO 15118-20, it is important to note that the Commission intends to continue monitoring, in cooperation with CEN and CENELEC, that relevant outstanding standard parts related to conformance tests are completed in a timely manner.

3. LEGAL ELEMENTS OF THE DELEGATED ACT

This Commission Delegated Regulation is based on points (a) and (b) of Article 21(3) of Regulation (EU) 2023/1804. Those provisions empower the Commission to adopt delegated acts to amend Annex II to the Regulation by introducing technical specifications for the areas listed in that Annex. These technical specifications will enable full technical interoperability of the recharging and refuelling infrastructure in terms of physical connections, communication exchanges and access for persons with reduced mobility and by updating the references to the standards set out in that Annex.

4. COST-BENEFIT ANALYSIS

Pursuant to Article 21(4) of Regulation (EU) 2023/1804, where delegated acts referred to in Article 21(3) are to apply to existing infrastructures, those delegated acts need to be based on a cost-benefit analysis to be submitted to the European Parliament and the Council together with the delegated acts.

This Regulation amends Annex II to Regulation (EU) 2023/1804 by introducing new technical specifications for certain alternative fuels infrastructure technologies and updating the references to the standards referred to in the technical specifications set out in that Annex.

Certain provisions of this Regulation introduce new technical specifications that apply only to recharging and refuelling infrastructure that will be installed or renovated from this Regulation's date of application. This concerns the following provisions under Annex II:

- point 1.7 'Technical specifications for inductive static wireless recharging for light-duty electric vehicles';
- point 1.14 'Technical specifications for electric road system (ERS) for dynamic ground level power supply through conductive rails for light- and heavy-duty electric vehicles'.
- point 2.1 'Technical specifications regarding communication between the electric vehicle and the recharging point (vehicle-to-grid communication)';
- point 3.5 'Technical specifications for connectors for refuelling points dispensing gaseous (compressed) hydrogen for heavy-duty vehicles';

As these technical specifications do not apply to existing infrastructure, there is no need for a cost-benefit analysis under Article 21(4) of Regulation (EU) 2023/1804 for the purpose of this Regulation.

However, this Regulation also includes provisions that update the references to existing standards referred to in the technical specifications in Annex II to Regulation (EU) 2023/1804, following the work by standardisation development organisations (SDOs). It is relevant that the technical specifications under Annex II refer to the latest version of the relevant standards. In those cases, this Regulation may apply to existing infrastructures in Annex II regarding:

- point 1.1 'Normal-power recharging points for light-duty electric vehicles';

- point 1.2 ‘High-power recharging points for light-duty electric vehicles’;
- point 1.3 ‘Recharging points for L-category electric vehicles’;
- point 1.4 ‘Normal-power recharging points and high-power recharging points for electric buses’;
- point 3.1 ‘Outdoor hydrogen refuelling points dispensing gaseous hydrogen used as fuel on board motor vehicles’;
- point 3.3 ‘The fuelling algorithm’.

The changes to standards references are as follows:

- EN IEC 62196-2:2022 ‘Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles – Part 2: Dimensional compatibility requirements for AC pin and contact-tube accessories’ (previously EN IEC 62196-2:2017);
- EN IEC 62196-3:2022 ‘Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles – Part 3: Dimensional compatibility requirements for DC and AC/DC pin and contact-tube vehicle couplers’ (previously EN IEC 62196-2:2014);
- IEC 60884-1:2022 ‘Plugs and socket-outlets for household and similar purposes – Part 1: General requirements’ (previously IEC 60884-1:2002);
- EN 17127:2024 ‘Outdoor hydrogen refuelling points dispensing gaseous hydrogen and incorporating filling protocols’ (previously EN 17127:2022).

The SDOs updated those standards for the following technical reasons:

- EN IEC 62196-2:2022[4]: The technical changes compared with the previous version relate to a title change. This was to replace the reference to ‘interchangeability requirements’ that were not addressed in the standard by ‘compatibility requirements’. This new edition also enhances technical alignment with standards IEC 62196-1:2022, IEC 62196-3:2022 and IEC 61851-1:2017.
- EN IEC 62196-3:2022[5]: The technical changes compared with the previous version relate to a title change. This was to replace the reference to ‘interchangeability requirements’ that were not addressed in the standard by ‘compatibility requirements’. This new edition also sets increased ratings for all configurations and reference to new tests in IEC 62196-1 (Clauses 34, 35, 36 and 37).
- IEC 60884-1:2022[6]: The technical changes compared with the previous version relate to manifold technical improvements and additions. These can be summarised, in a non-exhaustive manner, as follows: clarification of definitions, changes to plugs and socket-outlets incorporating pilot lights, durability of markings test, introduction of thermal monitoring in the plug, requirements for shutters in portable socket-outlets, test walls for verifying water ingress and rewriting of the temperature rise clause.

4 https://webstore.iec.ch/publication/64364
5 https://webstore.iec.ch/publication/59923
6 https://webstore.iec.ch/publication/34175

- EN 17127:2024[7]: The technical changes compared with the previous version relate to improving the definitions, extending the general requirements, characteristics and properties of hydrogen refuelling points for higher flow rates needed for the refuelling of heavy-duty vehicles; and communication aspects to improve the level of safety.

Since those provisions update technical specifications that apply to existing infrastructure, they require an analysis of cost and benefits under Article 21(4) of Regulation (EU) 2023/1804. In terms of cost, two cost categories need to be distinguished: (i) costs that arise from a possible need to retrofit existing recharging and refuelling points to comply with new technical specifications; and (ii) costs that arise from gaining access to the standards' technical documents themselves.

As regards the first category, CEN and CENELEC informed the Commission by letter of 17 July 2024 that updating the relevant standards covered by this Regulation does not result in any significant change that would imply real retrofitting costs. The standards updates imply incremental cost changes that fall within the regular operation and maintenance of such infrastructure. In the concrete case of point 1.1 'Normal-power recharging points for light-duty electric vehicles', point 1.2 'High-power recharging points for light-duty electric vehicles', point 1.3 'Recharging points for L-category electric vehicles' and point 1.4 'Normal-power recharging points and high-power recharging points for electric buses', the standards updates could potentially imply the replacement of existing functioning hardware, leading to meaningful retrofitting costs. Therefore, the updated version of these standards should apply only to newly installed or renovated recharging points, while existing recharging points should continue to comply with the current standards until they are renovated, thus, providing a smooth transition.

As regards the second category, the SDOs' online repositories indicate a one-off cost in the range of approximately EUR 250 and EUR 500 for each standard[4.5,6.7], to be paid once by each operator of recharging and refuelling infrastructure. This could result in a cumulative one-off cost of approximately EUR 1 000 to EUR 2 000 for each recharging point operator and refuelling point operator to access the updated standards included in this Regulation. This expense would fall within the regular operational costs for recharging point and refuelling point operators to maintain and run their infrastructure and services. The cost associated with accessing the standards is independent of the number of points or stations the operator manages and operates. Overall, this cost can be considered insignificant for any recharging point and refuelling point operator active in the alternative fuels market. Additionally, it is important to put into context the frequency of standards updates. The typical review cycle for most international standards is around 5 years, meaning that updated standards are expected to remain stable over that period, without incurring further costs for accessing the technical standards documents during that time.

The Commission's analysis has not identified any other cost associated with updating those standards.

As regards the benefits for operators of recharging and refuelling points, the update of the standards references ensures that recharging and refuelling points continue to operate in the EU in line with the latest technical developments in an interoperable, safe and secure manner. More specifically, updating the standards through this Regulation provides better reference to the standards' content; improved technical configurations and clarification of definitions or

[7] https://standards.cencenelec.eu/dyn/www/f?p=CEN:110:0::::FSP_PROJECT,FSP_ORG_ID:76814,6249&cs=14EEC45C07667CC3396322462132B44BE

extension of requirements and characteristics needed for fuel supply and communication. These updates ensure that different alternative fuels infrastructure technologies and systems can work together seamlessly, leading to more reliable and efficient infrastructure. Finally, updating the standards references results in continued cost savings for manufacturers and operators of such recharging and refuelling infrastructure due to the coordinated update of technical specifications. This provides certainty for investments.

If the common technical specifications mandated under Regulation (EU) 2023/1804 were to refer to outdated standards, and thus deviate from the latest versions of the standards provided by the SDOs, the continuation of the benefits described above would be jeopardised. Specifically, the reference to outdated standards could cause relevant technical components of alternative fuels infrastructure to rely on outdated systems that are incompatible with the latest technologies and vehicles in the market. This could lead to potential technical and equipment failures due to hardware or software issues, negatively affecting user experience. Ultimately, this would create uncertainty about the operability of infrastructure and lead to a situation where the minimal cost of standards updates would be far outweighed by the overall loss of benefits from a continued seamless rollout of interoperable recharging and refuelling infrastructure.

Therefore, on balance, it can be concluded that the benefits of the amendments introduced by this Regulation outweigh their costs.

5. MARKET MONITORING AND IMPLEMENTATION

To ensure a market implementation that is technically correct and interoperable across the Union, the Commission may amend Annex II of Regulation (EU) 2023/1804 with a new Commission Delegated Regulation to introduce further technical specifications or update references to the standards set out in that Annex. CEN and CENELEC is expected to inform the Commission when outstanding standardisation works under standardisation request M/581 are finalised.

In the meantime, the Commission intends to continue monitoring, in cooperation with CEN and CENELEC, that relevant outstanding standard parts for some areas addressed in this Commission Delegated Regulation are completed in due time. This is the case of Annex II, point 2.1 on technical specifications regarding communication between the electric vehicle and the recharging point (vehicle-to-grid communication). Additional standard parts related to conformance testing applicable to EN ISO 15118-20:2022 are needed and should be introduced in Annex II of Regulation (EU) 2023/1804 when those standardisation works are finalised. If the technical work on these standard parts is delayed, considering also relevant cybersecurity specifications, the Commission may assess whether a new date for the mandatory implementation of EN ISO 15118-20:2022 would be needed and may amend points 2.1.2 and 2.1.3 of Annex II to Regulation (EU) 2023/1804 accordingly.

Ultimately, when a full market transition to EN ISO 15118-20:2022 has been achieved, understood as all electric vehicles and recharging infrastructure being equipped with EN ISO 15118-20:2022 in accordance with the technical provisions for recharging infrastructure set out in this Commission Delegated Regulation, the Commission may assess whether the mandatory implementation of the standard part EN ISO 15118-2:2016 is still needed and may amend point 2.1 of Annex II to Regulation (EU) 2023/1804 accordingly.

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amending Regulation (EU) 2023/1804 of the European Parliament and of the Council as regards standards for wireless recharging, electric road system, vehicle-to-grid communication and hydrogen supply for road transport vehicles

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to 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[1], and in particular Article 21(3) thereof,

Whereas:

(1) The Commission may amend Annex II on technical specifications of Regulation (EU) 2023/1804 to introduce new technical specifications or update references to the standards set out 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.

(2) The Commission may request, pursuant to Article 21(2) of Regulation (EU) 2023/1804, that European standardisation organisations (ESOs) draft European standards setting technical specifications for areas referred to in Annex II to that Regulation for which no common technical specifications have been adopted by the Commission.

(3) In 2022, pursuant to Article 10(1) of Regulation (EU) No 1025/2012 of the European Parliament and of the Council[2], the Commission requested that the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC) develop and adopt appropriate European standards as regards communication exchange, electricity and hydrogen supply for road, maritime transport and inland navigation (M-581)[3].

(4) By letter of 17 July 2024, CEN and CENELEC informed the Commission that several requested standardisation works had been finalised. CEN and CENELEC recommended that the Commission include those standards in the relevant Union legal framework. Technical specifications referred to in Annex II to Regulation (EU) 2023/1804 should reflect those recommendations.

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1 OJ L 234, 22.9.2023, p. 1, ELI: http://data.europa.eu/eli/reg/2023/1804/oj.

2 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, ELI: http://data.europa.eu/eli/reg/2012/1025/oj).

3 Commission Implementing Decision C(2022)1710 on a standardisation request to the European standardisation organisations as regards communication exchange, electricity and hydrogen supply for road, maritime transport and inland navigation in support of Directive 2014/94/EU and its planned revision under the 'Fit for 55' package (M-581).

(5) In order to allow seamless use of alternative fuels vehicles across the Union, technical provisions for ‘interoperability’ should strictly refer to the capacity of both publicly accessible and private recharging and refuelling points for alternative fuels to supply energy that is compatible with all relevant vehicle technologies.

(6) The technical specifications on direct current (DC) normal-power recharging points for electric vehicles are currently included in point 1.2 of Annex II to Regulation (EU) 2023/1804, which relates to technical specifications for high-power recharging points while they should be included in point 1.1. of Annex II. The titles of points 1.1 and 1.2 should also be changed to clarify that they apply to light-duty electric vehicles only.

(7) CEN and CENELEC informed the Commission that the standards for normal- and high-power recharging points for electric vehicles included in points 1.1 and 1.2 of Annex II to Regulation (EU) 2023/1804 should be updated due to a title change. The purpose is to replace the reference to ‘interchangeability requirements’ that were not addressed in the standard by ‘compatibility requirements’. The new versions for the relevant parts of the standard that should at least apply to those newly installed or renovated recharging points are EN IEC 62196-2:2022 and EN IEC 62196-3:2022. In order to avoid the potential replacement of currently functioning hardware, existing normal- and high-power recharging points should continue to comply with the relevant standard parts EN IEC 62196-2:2017 and EN IEC 62196-3:2014 until they are renovated.

(8) Standard part EN IEC 61851-1:2019 describes four possible modes of recharging (Modes 1, 2, 3 and 4). These recharging modes provide important operational characteristics, functions and technical conditions related to the recharging point, such as electrical safety aspects and operational characteristics that electrical vehicles need to comply with to recharge safely and successfully. For easy market interpretation, the different recharging modes related to the standards for recharging points laid down in Annex II to Regulation (EU) 2023/1804 should be included in that Regulation together with the relevant standards.

(9) CEN and CENELEC informed the Commission that it should be allowed, for interoperability purposes, that alternating current (AC) normal power private recharging points for electric vehicles are also equipped with socket outlets for Mode 2 recharging compliant with standard part IEC 60884-1:2022. Part 1 of that standard should apply to plugs and fixed or portable socket-outlets for AC recharging only, intended for household and similar purposes, either indoors or outdoors, where Mode 2 includes an in-cable control and protection device (IC-CPD) ensuring protection, control and safe power setting.

(10) The definition of ‘recharging point’ in Article 2, point (48), of Regulation (EU) 2023/1804 covers devices with a power output less than or equal to 3.7 kW and whose primary purpose is the recharging of electric vehicles in Mode 2. Those devices should therefore also be included in point 1.1 of Annex II to Regulation (EU) 2023/1804. For interoperability purposes, AC normal power private recharging points whose primary purpose is the recharging of electric vehicles should be equipped at least with socket outlets or vehicle connectors of Type 2 for Mode 3 recharging as described in EN IEC 62196-2:2022. Alternatively, if their power output is less than or equal to 3.7 kW, and their primary purpose is the recharging of electric vehicles exclusively in Mode 2, they should be equipped at least with socket outlets for Mode 2 recharging compliant with IEC 60884-1:2022.

(11) CEN and CENELEC informed the Commission that the standards for recharging points for L-category electric vehicles included in point 1.3(a) and (b) of Annex II to Regulation (EU) 2023/1804 should be updated. For the standard in point 1.3(a), the update is necessary due to a title change in order to replace the reference to 'interchangeability requirements'. For the standard in point 1.3(b), the update is necessary to incorporate several technical improvements, including the clarification of definitions not addressed in the standard by 'compatibility requirements'. The new versions for the relevant parts of the standards are EN IEC 62196-2:2022 and IEC 60884-1:2022. The title of point 1.3 should also be changed to clarify that in the context of Regulation (EU) 2023/1804 it applies to L-category electric vehicles only. As this Regulation changes the titles of points 1.1 and 1.2 of Annex II to Regulation (EU) 2023/1804, the relevant standard parts for AC and DC normal power and high-power recharging points that are applicable to L-category electric vehicles should also be referred to under point 1.3 of that Annex, as they remain applicable for those vehicles. In order to avoid the potential replacement of currently functioning hardware, the transition of those standard parts to the new versions EN IEC 62196-2:2022 and EN IEC 62196-3:2022 for newly installed and renovated recharging points under point 1.3.2 and 1.3.3 of Annex II to Regulation (EU) 2023/1804 should follow the same approach as for the recharging points under points 1.1 and 1.2 of that Annex. The amendments to the titles and scope of points 1.1, 1.2 and 1.3 of Annex II to Regulation (EU) 2023/1804 are necessary to achieve a clearer presentation of the standards applicable for each vehicle category.

(12) Recharging of electric vehicles in Mode 2 should be possible using the standard socket-outlet in each Member State. Therefore, compliance of recharging points with socket-outlets of standard part IEC 60884-1:2022, as required pursuant to points 1.1 and 1.3 (b) of Annex II to Regulation (EU) 2023/1804, should be ensured if the socket-outlets of the recharging points are compliant with the national system of the Member State, based on standard part IEC 60884-1:2022, where the recharging point is deployed. Products, including socket outlets for electric recharging, are to comply with Regulation (EU) 2023/988 of the European Parliament and of the Council of 10 May 2023 on general product safety[4].

(13) CEN and CENELEC informed the Commission that the standards for normal- and high-power recharging points for electric buses included in point 1.4 of Annex II to Regulation (EU) 2023/1804 should be updated due to a title change. This is to replace the reference to 'interchangeability requirements' that were not addressed in the standard by 'compatibility requirements'. The new versions for the relevant parts of the standards that should at least apply to those newly installed or renovated recharging points are EN IEC 62196-2:2022 and EN IEC 62196-3:2022.In order to avoid the potential replacement of currently functioning hardware, existing normal- and high-power recharging points should continue to comply with the relevant standard parts EN IEC 62196-2:2017 and EN IEC 62196-3:2014 until they are renovated.

(14) Considering the already ongoing deployment of recharging infrastructure dedicated to heavy-duty electric vehicles, it is necessary to set out relevant common technical

[4] Regulation (EU) 2023/988 of the European Parliament and of the Council of 10 May 2023 on general product safety, amending Regulation (EU) No 1025/2012 of the European Parliament and of the Council and Directive (EU) 2020/1828 of the European Parliament and the Council, and repealing Directive 2001/95/EC of the European Parliament and of the Council and Council Directive 87/357/EEC (OJ L 135, 23.5.2023, p. 1-51; ELI: http://data.europa.eu/eli/reg/2023/988/oj).

specifications to ensure interoperability of such infrastructure. Pending adoption of the relevant final standards containing the technical specifications for the megawatt charging system (MCS), it is necessary to ensure the interoperability of recharging infrastructure capable of supplying electricity to both light-duty and heavy-duty electric vehicles. For this purpose, under point 1.6 of Annex II to Regulation (EU) 2023/1804, DC high-power recharging points for light-duty and heavy-duty electric vehicles should be equipped with vehicle connectors of the 'Combo 2' combined charging system for Mode 4 recharging, as described in standard part EN IEC 62196-3:2022. However, that standard should not apply to recharging infrastructure dedicated exclusively to heavy-duty vehicles and equipped solely with the MCS, as the relevant technical specifications will be introduced in Regulation (EU) 2023/1804 once the standardisation work for the MCS is completed.

(15) CEN and CENELEC informed the Commission of the standards recommended to be applied to recharging points for inductive static wireless recharging for light-duty electric vehicles. Under point 1.7 of Annex II to Regulation (EU) 2023/1804, the standard parts EN IEC 61980-1:2021, IEN IEC 61980-2:2023 and EN IEC 61980-3:2022 should apply to those recharging points.

(16) To corroborate the safe, secure and interoperable market implementation of Parts 1, 2 and 3 of standard EN IEC 61980, the wireless power transfer (WPT) system prototypes developed for inductive static wireless recharging of light-duty electric vehicles were tested by the Joint Research Centre of the Commission in accordance with methodologies set out in those parts of the standard. The testing results confirm that the WPT system prototypes fulfil the limits of Parts 1, 2 and 3 of standard EN IEC 61980 and that it is hence appropriate to introduce that standard in Regulation (EU) 2023/1804.

(17) CEN and CENELEC informed the Commission of the standards recommended to be applied to recharging infrastructure for dynamic ground level power supply through conductive rails for light- and heavy-duty electric vehicles. The technical specification CLC/TS 50717:2022 should apply to such recharging infrastructure.

(18) CEN and CENELEC informed the Commission of the standards recommended to be applied to publicly accessible recharging points for vehicle-to-grid communication interface for road vehicles, which should be set out under point 2.1 of Annex II to Regulation (EU) 2023/1804. The standard parts EN ISO 15118-1:2019, EN ISO 15118-2:2016, EN ISO 15118-3:2016, EN ISO 15118-4:2019 and EN ISO 15118-5:2019 should at least apply to those newly installed or renovated recharging points. In addition, CEN and CENELEC recommended that the publicly accessible recharging points for the vehicle-to-grid communication interface for road vehicles installed or renovated from 1 January 2027 should at least also comply with standard part EN ISO 15118-20:2022. Moreover, the private recharging points for vehicle-to-grid communication interface for road vehicles installed or renovated from 1 January 2027 should comply at least with standard part EN IEC 61851-1:2019 for Mode 2 recharging, and standard part EN ISO 15118-20:2022 for Mode 3 or Mode 4 recharging. It is appropriate to provide, for recharging points that need to comply with the newer and more complex standard part EN ISO 15118-20:2022, a reasonable transition period. Therefore, that standard part should apply to those recharging points from 1 January 2027.

(19) CEN and CENELEC informed the Commission that current electric vehicles on the market are equipped only with standard part EN ISO 15118-2:2016. This was

corroborated by experts from the Sustainable Transport Forum. Standard part EN ISO 15118-2:2016 lacks several relevant features and technical possibilities, such as advance smart recharging, bidirectional recharging or multi-contract handling for plug-and-charge. Those features are covered by standard part EN ISO 15118-20:2022. For this reason, to ensure that end users with electric vehicles currently equipped with EN ISO 15118-2:2016 are able to use recharging points during their vehicles' service life, it is appropriate that recharging points in the Union are also required to comply with EN ISO 15118-2:2016. For interoperability purposes, the co-existence of both standard parts EN ISO 15118-2:2016 and EN ISO 15118-20:2022 in publicly accessible recharging infrastructure should therefore be ensured under points 2.1.1 and 2.1.2 of Annex II to Regulation (EU) 2023/1804 until a full market transition to standard part EN ISO 15118-20:2022 is achieved.

(20) Original equipment manufacturers are informed with this Regulation of the relevant standards applicable to publicly accessible and private recharging points. To ensure a rapid transition, they should consider such standards when bringing new electric vehicles to the market and, when technically possible, update existing electric vehicles currently on the market from EN ISO 15118-2:2016 to EN ISO 15118-20:2022. Likewise, when technically possible, recharging point operators should update existing recharging points on the market so that they support EN ISO 15118-20:2022 in addition to EN ISO 15118-2:2016 and other potential existing low-level communication solutions such as pulse width modulation (PWM) as described in EN IEC 61851-1:2019.

(21) To avoid stranded investments in public and private recharging infrastructure, existing publicly accessible recharging points for Mode 3 and 4 recharging using low-level communication such as PWM, which are already capable of communicating with electric vehicles on the market equipped with EN ISO 15118-2:2016, should be exempted from implementing Parts 1 to 5 of standard EN ISO 15118 or subsequent extended versions like EN ISO 15118-20:2022. Upgrading existing publicly accessible recharging points using low-level communication to high-level communication as described in EN ISO 15118-2 and EN ISO 15118-20 could require significant software and hardware changes, possibly making the complete replacement of that functioning infrastructure necessary. For this reason, Parts 1 to 5 of standard EN ISO 15118 should apply only to newly installed or renovated publicly accessible recharging points. The most recent standard part EN ISO 15118-20:2022 should not apply to such newly installed or renovated recharging points until 1 January 2027 in order to provide a reasonable transition period for those recharging points.

(22) In addition, for existing private recharging points for Mode 2 recharging, using low-level communication solutions such as PWM, that are already capable of covering basic recharging functions with normal household sockets and communicate with electric vehicles on the market equipped with EN ISO 15118-2:2016 should also be exempted from implementing Parts 1 to 5 of standard EN ISO 15118 or subsequent extended versions like ISO 15118-20:2022. This is because those standards would currently not bring any additional value to the end user. For this reason, standard part EN IEC 61851-1:2019 included in point 2.1.3 (a) of Annex II to Regulation (EU) 2023/1804 should apply to newly installed or renovated private recharging points for Mode 2 recharging from 1 January 2027. In addition, with regard to private recharging points for Mode 3 and 4 recharging, where advanced recharging features such as smart and bidirectional recharging are enabled only with high-level communication, standard part EN ISO 15118-20:2022 included in point 2.1.3 (b) of that Annex should not apply

to such newly installed or renovated recharging points until 1 January 2027 in order to provide a reasonable transition period for those recharging points.

(23) Operators and manufacturers of both publicly accessible and private recharging points specifically for Mode 3 and 4 recharging for electric vehicles should prepare and predispose their hardware and software to properly support standard part EN ISO 15118-20:2022 from 1 January 2027 in all newly installed or renovated recharging points. The overall implementation of standard parts EN ISO 15118-2 and EN ISO 15118-20 should be carried out in full, while their application should take into account the mandatory and optional functionalities already defined within those standard parts, as relevant to the various use cases and modes of recharging. This approach ensures the secure and interoperable implementation of the standard parts while appropriately addressing the different operational scenarios.

(24) Plug-and-charge is a technological solution enabled by standard parts EN ISO 15118-2:2016 and EN ISO 15118-20:2022. It provides for automatic authentication and authorisation between the electric vehicle and the recharging station. This makes it possible to conduct a recharging session on the basis of a contract-based payment between the end user and the mobility service provider, including billing information. To conduct a recharging session, all electric vehicle drivers need to do is connect the connector of a recharging point to the electric vehicle, and the process will start automatically. The Union-wide implementation of plug-and-charge, along with the possibility for end users to access it in an interoperable manner throughout the Union, should provide additional opportunities for simplifying the process of electric vehicle recharging and improving the overall user experience.

(25) Operators of publicly accessible recharging points can voluntarily decide whether they offer plug-and charge, or other relevant services such as smart and bidirectional charging, in line with the level of optionality laid down in standard parts EN ISO 15118-2:2016 and EN ISO 15118-20:2022. Plug-and-charge should be implemented in an interoperable manner throughout the Union to provide a simple and seamless user experience. For Union-wide interoperability and security purposes, all publicly accessible recharging points for AC and DC for light-duty and heavy-duty electric vehicles installed or renovated from 1 January 2027 that offer automatic authentication and authorisation services, such as plug-and-charge, should comply with both EN ISO 15118-2:2016 and EN ISO 15118-20:2022. Existing publicly accessible recharging points providing automatic authentication and authorisation services with a solution other than plug-and-charge based on EN ISO 15118-2:2016 and EN ISO 15118-20:2022 should be allowed to continue to do so until a full market transition has been achieved. Regulation (EU) 2023/1804 should ensure such interoperable and secure implementation of plug-and-charge.

(26) The term ‘installed’ should be understood as the initial placement of all relevant recharging point equipment, including hardware, software and associated electrical infrastructure, such as electricity supply connections, transformers, and other electrical systems, to enable the recharging of electric vehicles. This is different from the recharging point being deployed, which would also require it to be fully operational and available to end users. The term ‘renovated’ should be understood as a major or complete replacement of relevant recharging point equipment. Regular maintenance updates, including the replacement of specific components, such as recharging cables should not be considered as renovation. CEN and CENELEC informed the Commission that the standard for refuelling points dispensing gaseous hydrogen used as fuel on board motor vehicles and the associated fuelling algorithm included in

points 3.1 and 3.3 of Annex II to Regulation (EU) 2023/1804 should be updated due to a new version of the standard. Standard EN 17127:2024 should apply to those refuelling points and associated fuelling algorithms. CEN and CENELEC also informed the Commission of the standard recommended to be applied to connectors for refuelling points dispensing gaseous (compressed) hydrogen for heavy-duty vehicles. Under point 3.5 of Annex II to Regulation (EU) 2023/1804, standard EN 17127:2024 should apply to those refuelling points.

(27) The title of point 3.1 of Annex II to Regulation (EU) 2023/1804 should also be changed to avoid market uncertainty and clarify that it applies to refuelling points dispensing gaseous (compressed) hydrogen for light-duty vehicles only. This title change will provide for better differentiation of the specific technical specifications for refuelling points dispensing gaseous (compressed) hydrogen for light-duty vehicles in point 3.1 of Annex II and avoid overlaps with the technical specifications for heavy-duty vehicles in point 3.5 of that Annex, while maintaining the same scope.

(28) Directive (EU) 2022/2555 of the European Parliament and of the Council[5] sets out requirements concerning national capabilities in the area of cybersecurity, requires Member States to adopt national cybersecurity strategies, and introduces rules and obligations on cybersecurity risk-management and information sharing. As Directive (EU) 2022/2555 includes operators of recharging points as part of a sector of high criticality, the application of that Directive and the requirements set out in Regulation (EU) 2023/1804 should be complementary.

(29) Regulation (EU) 2023/1804 should therefore be amended accordingly.

(30) Article 21(6) of Regulation (EU) 2023/1804 requires amendments of Annex II to that Regulation adopted by delegated acts to include reasonable transitional periods before the provisions contained therein become binding. Therefore, this Regulation should provide for a general deferred date of application,

HAS ADOPTED THIS REGULATION:

Article 1

Annex II to Regulation (EU) 2023/1804 is amended in accordance with the Annex to this Regulation.

Article 2

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 [OP: Please insert the date = six months after the date of entry into force of this Regulation].

[5] Directive (EU) 2022/2555 of the European Parliament and of the Council of 14 December 2022 on measures for a high common level of cybersecurity across the Union, amending Regulation (EU) No 910/2014 and Directive (EU) 2018/1972, and repealing Directive (EU) 2016/1148 (NIS 2 Directive), OJ L 333, 27.12.2022, p. 80, ELI: http://data.europa.eu/eli/dir/2022/2555/oj).

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

Done at Brussels, 2.4.2025

For the Commission
The President
Ursula VON DER LEYEN