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From:	General Secretariat of the Council
To:	Permanent Representatives Committee/Council
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Subject:	Regulation on type-approval of motor vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7) - Analysis of the final compromise text with a view to agreement

From the document distributed with the number ST 16960/23 INIT, the yellow markings in Annexes were removed.

I. INTRODUCTION

1. On 10 November 2022, the Commission submitted to the Council and the European Parliament a proposal for a Regulation of the European Parliament and of the Council on type-approval of motor vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7) and repealing Regulations (EC) No 715/2007 and (EC) No 595/2009[1].

[1] 14598/22 + ADD1-7.

2. The Euro 7 Regulation aims at enhancing environmental and health protection in the EU by setting more adequate, cost-effective and future-proof rules and limits for road transport emissions.

3. It is based on Article 114 of the Treaty on the Functioning of the European Union (TFEU) (ordinary legislative procedure).

4. The European Economic and Social Committee delivered its opinion on 27 April 2023.

5. In the European Parliament, the Committee on the Environment, Public Health and Food Safety (ENVI) has the lead responsibility. Mr Alexandr VONDRA (ECR, CZ) was appointed rapporteur. The Parliament adopted its negotiating mandate at the plenary session of 9 November 2023.

II. WORK WITHIN THE COUNCIL

6. The examination of the proposal by the Working Party on Technical Harmonisation (Motor Vehicles) started on 21 November 2022 under the Czech Presidency.

7. Following intensive work under the Swedish Presidency, the Council reached a general approach at the Competitiveness Council meeting on 25 September 2023.

8. Interinstitutional negotiations with the European Parliament started on 15 November 2023. Twelve technical meetings were held in November and December 2023 to find solutions to technical issues and exchange views on political issues relevant to the Parliament and the Council.

9. The co-legislators reached a provisional agreement on the proposed Regulation at two trilogues on 14 and 18 December 2023. The Presidency debriefed the Working Party on Technical Harmonisation (Motor Vehicles) about the outcome of these meetings on 19 December and the Permanent Representatives Committee on 20 December 2023.

III. MAIN ELEMENTS OF THE COMPROMISE TEXT

a) Emission limits (Annex I, Table 1 and 3) and test conditions (Annex III, Table 1) for light-duty vehicles

10. Exhaust emission limits for light-duty vehicles were an important consideration for all delegations. Many of them considered investment costs arising from the Euro 7 limits proposed by the Commission disproportionate. To reflect these concerns, the compromise text includes the same Euro 6 exhaust emission limits as the Council's general approach, with two exceptions:

11. The diameter of solid particles emitted from the tailpipe larger than or equal to 23 nm (PN_{23}) changed to larger than or equal to 10 nm (PN 10), in line with the newest developments in the United Nations Economic Commission for Europe.

12. The footnote in Annex I, Table I relating to vehicles with direct injection engines was deleted.

13. The mass value of evaporative emissions for petrol fuelled light-duty vehicles was reduced to 1.5 g/test, while keeping the deletion of refuelling emissions as in the Council's general approach.

14. Test conditions for light-duty vehicles also remain the same as in the Council's general approach.

b) Emission limits (Annex I, Table 2) and test conditions (Annex III, Table 2) for heavy-duty vehicles

15. The Parliament and the Council shared similar concerns about significant development capacity and investment required on top of those already being put into electrification and about the overall benefits to be gained from the approach proposed by the Commission. They agreed on:

16. the NOx values for heavy-duty vehicles proposed by the Parliament, under the condition that the power threshold in Annex III, Table 2 is raised to 6 %,

17. the PM and NH_3 values measured in the laboratory (not on-road) as proposed by the Parliament.

18. HCHO was not included in the list of pollutants in Annex 1, Table 2. Instead, Article 18 (7) contains a review clause stating when the Commission should conduct a review on the appropriateness to set a specific limit for formaldehyde.

c) Brake particle emission limits (Annex I, Tables 4, 4a, 4b, 4c and 5)

19. The compromise text keeps the same value of 7 mg/km as in the Council's general approach, with an exception for N_1 vehicles class III (11 mg/km), applying as of entry into force of the Regulation until 31 December 2034 for internal combustion engine vehicles, and for other vehicles until a review planned for the end of 2027 and new limits to be enforced as of 1 January 2030.

20. Furthermore, a value of 3 mg/km was agreed for pure electric vehicles, with an exception for N_1 vehicles class III (5 mg/km), applying until a review planned for the end of 2027 and new limits to be enforced as of 1 January 2030.

d) Minimum performance requirements for battery durability (Annex II, Tables 1, 2, 3)

21. New requirements were introduced for hybrid and electric cars, keeping 80 % for vehicles up to five years or 100 000 km driven, as in the Council's general approach, and 72% for vehicles up to eight years or 160 000 km driven.

22. For vans, 75% is kept for vehicles up to five years or 100 000 km driven, and the figure is revised to 67% for vehicles up to eight years or 160 000 km driven.

e) Lifetime requirements (Annex IV)

23. The compromise text includes the same lifetime requirements as in the Council's general approach.

f) Delegated vs. implementing acts (Articles 14 and 15)

24. The Council retained its position. Articles 14 and 15 remain unchanged.

g) Entry into force (Article 20)

25. The Regulation shall apply 30 months after the entry into force of this Regulation for new type M_1, N_1 vehicles and components and separate technical units for those vehicles and 42 months after the entry into force of this Regulation for new M_1, N_1 vehicles and components and separate technical units for those vehicles.
It shall apply 48 months after the entry into force of this Regulation for new type M_2, M_3, N_2, N_3 vehicles, components and separate technical units for those vehicles and O_3, O_4 trailers and 60 months after the entry into force of this Regulation for new M_2, M_3, N_2, N_3 vehicles ,components and separate technical units for those vehicles and O_3, O_4 trailers.
It shall apply from 1 July 2028 for new tyre types of class C_1, from 1 April 2030 for new tyre types of class C_2 and from 1 April 2032 for new tyre types of class C_3.
It shall apply as from 1 July 2030 for M_1, N_1 vehicles, constructed by small volume manufacturers and from 1 July 2031 for M_2, M_3, N_2, N_3 vehicles constructed by small volume manufacturers.

IV. CONCLUSIONS

26. In the light of the above, the Permanent Representatives Committee is invited to:

- approve the compromise text set out in the Annex to this note, and
- instruct the Presidency to send a letter to the Chair of the ENVI Committee of the European Parliament confirming that, should the latter adopt its position at first reading, in accordance with Article 294(3) TFEU and in the exact form set out in the Annex — subject to legal-linguistic finalisation — the Council would approve, in accordance with Article 294(4) TFEU, the position of the European Parliament and the act would be adopted in the wording corresponding to the position of the European Parliament.

2022/0365 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on type-approval of motor vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7) and repealing Regulations (EC) No 715/2007 and (EC) No 595/2009

(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 114 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,

Whereas:

(-1) Decision (EU) 2022/591 of the European Parliament and of the Council[3] on a General Union Environment Action Programme to 2030 lays down as one of the Union's six thematic objectives for the period up to 31 December 2030 the pursuit of zero pollution,

1 OJ C , , p. .
2 OJ C , , p. .
3 ***Decision (EU) 2022/591 of the European Parliament and of the Council of 6 April 2022 on a General Union Environment Action Programme to 2030 (OJ L 114, 12.4.2022, p. 22).***

including in relation to harmful chemicals, in order to achieve a toxic-free environment, including for air, water and soil, as well as in relation to light and noise pollution, and protecting the health and well-being of people, animals and ecosystems from environment-related risks and negative impacts.

(-1a) The European Green Deal[4] is the Union's proposal to initiate a transition aiming to achieve, by 2050 at the latest, a climate-neutral, clean and circular economy, optimising resource management, minimising pollution while recognising the need for deeply transformative policies. The Union is also committed to the 2030 Agenda for Sustainable Development[5] and its Sustainable Development Goals[6]. The Sustainable and Smart Mobility Strategy adopted in December 2020[7] and the Zero Pollution Action Plan[8] adopted in May 2021 specifically address transport pollution aspects of the European Green Deal. Other particularly relevant policies for this initiative include, for example, the Ambient Air Quality Directive (AAQD)[9], the New Industrial Strategy for Europe[10], CO2 emission standards for cars and vans[11] and CO2 emissions targets for new heavy-duty vehicles[12].

(1) The internal market is an area in which the free movement of goods, persons, services and capital must be ensured. To that end Regulation (EU) 2018/858 of the European Parliament and of the Council[13] introduced a comprehensive type-approval and market surveillance system for motor vehicles, trailers, and for systems, components and separate technical units intended for such vehicles.

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4 ***Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions The European Green Deal; COM(2019) 640 final***

5 ***https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1《=E***

6 ***COM(2020) 789 final***

7 ***COM(2021) 400 final***

8 ***COM(2021) 400 final***

9 ***Directive 2008/50/EC***

10 ***COM(2020) 102 final and COM(2021) 350 final***

11 ***COM/2021/556***

12 ***COM(2023) 88 final***

13 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).

(2) The technical requirements for the type-approval of motor vehicles, engines and replacement parts with regard to emissions (‘emission type-approval’) should remain harmonised to ensure the proper functioning of the internal market, as well as a high level of environmental and health protection common in all Member States.

(2a) A successful transition to zero-emission mobility requires an integrated approach and the right enabling environment to stimulate innovation and maintain the Union's technological leadership in this sector. This includes public and private investments in research and innovation, the increasing supply of zero- and low-emission vehicles, the roll-out of recharging and refuelling infrastructure, integration into the energy systems, as well as the sustainable materials supply and sustainable production, re-use and recycling of batteries in Europe. It requires coherent action at Union, national, regional and local levels.

(2b) In order to support the transition towards clean mobility while reindustrialising Europe and supporting citizens, it is essential to keep the prices of private and commercial vehicles affordable for citizens and businesses. This will help maintain quality of life, industrial competitiveness and innovation, support job creation and skill development in the sector.

(2c) A socially acceptable and just transition towards zero-emission mobility should be ensured. It is important, therefore, to take into account the social effects of such transition throughout the whole automotive value chain and to address proactively the implications on employment. Targeted programmes at Union, national and regional levels, such as the development of just transition plans for automotive dependent regions are to be developed in the framework of the Just Transition Mechanism for the re-skilling, up-skilling and redeployment of workers, as well as education and job-seeking initiatives in adversely affected communities and regions, in close dialogue with the social partners and competent authorities. As part of that transition, it is necessary to strengthen women's employment, as well as equal opportunities in this sector.

(3) This Regulation is a separate regulatory act for the purposes of the EU type-approval procedure laid down in Annex II to Regulation (EU) 2018/858. ***The administrative*** provisions ***of Regulation (EU) 2018/858, including on penalties, as well as its robust compliance enforcement mechanism, are fully applicable to this*** Regulation***.***

(3a) Substantiated complaints submitted by natural or legal persons can constitute an important source of information for both market-surveillance authorities and type-approval authorities. In that context, the establishment of straightforward and proportionate processes that allow natural or legal persons to submit substantiated complaints to the respective authorities where they have reasons to believe that this Regulation is not complied with can contribute to the application and enforcement of this Regulation. Those complaints should be considered by national authorities as risk factor in decisions on market surveillance or in service conformity activities.

(3b) This Regulation lays down provisions and requirements on vehicle emissions and battery durability, whereas the technical elements will be laid down by implementing acts adopted in accordance with the examination procedure and the assistance of a committee within the meaning of Regulation (EU) No 182/2011 (comitology procedure).

(4) The technical requirements for the type-approval of motor vehicles, engines and replacement parts with regard to emissions ('emission type-approval') are currently set out in two Regulations that apply to emission type-approval for light-duty and heavy-duty vehicles respectively, i.e. Regulation (EC) No 715/2007 of the European Parliament and of the Council ('Euro 6')[14] and Regulation (EC) No 595/2009 of the European Parliament and of the Council ('Euro VI') [15].

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[14] Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (OJ L 171, 29.6.2007, p. 1).

[15] Regulation (EC) No 595/2009 of the European Parliament and of the Council of 18 June 2009 on type-approval of motor vehicles and engines with respect to emissions from heavy duty vehicles (Euro VI) and on access to vehicle repair and maintenance information and amending Regulation (EC) No 715/2007 and Directive 2007/46/EC and repealing Directives 80/1269/EEC, 2005/55/EC and 2005/78/EC (OJ L 188, 18.7.2009, p. 1).

(5) Incorporating the requirements laid down in Regulation (EC) No 715/2007 and Regulation (EC) No 595/2009 into a single Regulation should ensure internal coherence of the system of emission type-approvals for both light and heavy-duty vehicles, while allowing for different emission limits ***and testing procedures*** for such vehicles.

(6) Furthermore, the current emission limits were adopted for heavy-duty vehicles in 2009 on the basis of the available technology. Since then, technology has advanced and the level of emissions achieved with a combination of current technologies is much lower than that achieved more than 15 years ago. That technological progress should be reflected in emission limits based on state-of-the-art existing technology and knowledge of pollution controls and for all relevant pollutants.

(6a) In the European Union, the exhaust particle number emissions of solid particles larger than 23 nanometres (PN23) have been controlled since 2011 for light-duty vehicles (Euro 5b) and since 2013 for heavy-duty vehicles (Euro VI). Considering that existing technologies and UN Global Technical Regulation 15 allow the measurement of particle number emissions down to ten nanometres (PN10), it is appropriate to apply the particle limits to PN10 for all vehicles in this Regulation. Setting specific limits for PN10 emissions for the first time will contribute to a dynamic towards the global harmonisation of enhanced PN emissions control and measurement and the European Union should encourage the UN World Forum for the Harmonization of Vehicle Regulations to align the relevant UNECE vehicle regulations accordingly.

(7) Simplification is achieved by eliminating tests which are not needed, by referring to standards under existing UN Regulations where applicable, and by ensuring a consistent set of procedures and tests for the various phases of the emission type-approval.

(8) In order to ensure that the emissions for both light and heavy-duty vehicles are limited in real life, testing vehicles in real conditions of use, which are statistically relevant, with a minimum set of restrictions, boundaries and other driving requirements, ***is required. This on-road testing should be based on normal driving and exclude biased driving***.

(10) Regulations (EC) No 715/2007 and (EC) No 595/2009 require that vehicles respect the emission limits for a specified period of time, which does not correspond anymore to the average lifetime of vehicles. It is therefore appropriate to lay down durability requirements that reflect the average expected lifetime of vehicles in the Union.

(10a) Member States are encouraged to develop and implement strategies for incentivising fleet renewal, with the aim of facilitating a progressive transition of the European fleet towards vehicles with reduced emissions, contributing to a cleaner and more sustainable transport ecosystem.

(11) There are now technologies available and used widely worldwide that limit evaporative emissions of volatile organic compounds during the use ***and parking*** of a vehicle with petrol fuel. It is therefore appropriate to set the emission limits for such volatile organic compounds at a lower level.

(12) Non-exhaust emissions consist of particles emitted by tyres and brakes of vehicles. Emissions from tyres is estimated to be the largest source of microplastics to the environment. As shown in the Impact Assessment, it is expected that by 2050, non-exhaust emissions will constitute up to 90% of all particles emitted by road transport, because exhaust particles will diminish due to vehicle electrification. Those non-exhaust emissions should therefore be measured and limited. The Commission should ***encourage UN WP.29 works in order to achieve its objectives in a timely manner, reflecting a high level of ambition based on solid scientific and technical grounds and define abrasion limits based on state-of-the-art methods. In the event that uniform provisions*** on tyre abrasion ***limits have not been adopted by UN WP.29 by 1 July 2026 for C1 class tyres, 1 April 2028 for C2 class tyres or 1 April 2030 for C3, the Commission should adopt a delegated act aimed at reaching the Union's objective to reduce microplastics released into the environment by 30% by 2030 and based on*** state-of-the-art ***abrasion rates. Specific characteristics of vehicles with traction batteries, including plugin hybrids and battery electric vehicles should be evaluated during the preparation of the proposal***.

(13) Regulation (EU) 2019/2144 of the European Parliament and of the Council[16] regulates gear shift indicators (GSI), whose main purpose is to minimise fuel consumption of a vehicle when a driver follows its indications. However, the pollutant emission requirements in real use, including when following the GSI, should be addressed in this Regulation.

(14) Vehicles with traction batteries, including plugin hybrids and battery electric vehicles, contribute to the decarbonisation of the road transport sector. In order to gain and increase consumer trust in such vehicles, they should be performant and durable. It is therefore important to require that traction batteries retain a good part of their initial capacity after many years of use. That is of particular importance to buyers of second hand electric vehicles to ensure that the vehicle will continue to perform as expected. Monitors of the battery state-of-health should therefore be required for all vehicles that use traction batteries. In addition minimum performance requirements for battery durability of passenger cars ***and light commercial vehicles*** should be introduced, taking into account the UN Global Technical Regulation 22[17].

(14a) OBM and OBFCM devices use data generated by the vehicle to monitor compliance with this Regulation. Where appropriate, such data is to be subject to the provisions included in the Data Act.

(15) Tampering of vehicles to remove or deactivate parts of the pollution control systems is a well-known problem. Such practice leads to uncontrolled emissions and should be prevented ***and corresponding penalties should apply***. Tampering of the odometer leads to false mileage and hampers the proper in-service control of a vehicle. It is therefore of the utmost importance to guarantee the highest possible security protection of those systems, complete

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16 Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/858 of the European Parliament and of the Council and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009 of the European Parliament and of the Council and Commission Regulations (EC) No 631/2009, (EU) No 406/2010, (EU) No 672/2010, (EU) No 1003/2010, (EU) No 1005/2010, (EU) No 1008/2010, (EU) No 1009/2010, (EU) No 19/2011, (EU) No 109/2011, (EU) No 458/2011, (EU) No 65/2012, (EU) No 130/2012, (EU) No 347/2012, (EU) No 351/2012, (EU) No 1230/2012 and (EU) 2015/166 (OJ L 325, 16.12.2019, p. 1).

17 United Nations Global Technical Regulation on In-vehicle Battery Durability for Electrified Vehicles, UN GTR 22

with security certificates and appropriate anti-tampering protection to ensure that neither pollution control systems nor the vehicle odometer can be tampered with.

(15a) To prevent anti-tampering measures from unduly hampering competition, this Regulation and its implementing and delegated acts should maintain the possibility of independent operators to develop, distribute, install and activate aftermarket replacement parts. Therefore, manufacturers should not deny access to independent operators to the strictly necessary information, tools and processes for development and installation of such replacement parts. Approval and authorisation of independent operators to access vehicle security features should be granted in accordance with Regulation (EU) 2018/858.

(15b) Achieving EU air quality objectives requires a continuing effort to reduce vehicle emissions. The use of manipulation devices as well as of manipulation strategies should be prohibited under this Regulation and this prohibition is essential to safeguard such objectives.. When assessing situations that may involve the use of manipulation devices or manipulation strategies, a broad assessment and interpretation of these situations should be made, in line with the CJEU case law rendered on defeat devices in the context of Regulation (EC) No 715/2007. Any devices or strategies that reduce the effectiveness of exhaust and non-exhaust emission limits and testing condition requirements under this Regulation, causing a non-compliant vehicle to appear compliant or to falsify test results should be taken into account when determining whether manipulation devices or strategies exist. Designing, constructing and assembling vehicles with manipulation devices or manipulation strategies, which cause a non-compliant vehicle to appear compliant with this Regulation should be subject to penalties.

(16) Sensors installed on vehicles are already used today to detect anomalies on emissions and trigger related repairs through the on-board diagnostic (OBD) system. The OBD system currently in use, however, does not detect accurately or timely the malfunctions and neither does it sufficiently and timely ***urge*** repairs. As a result, it is possible that vehicles emit much more than they are allowed to do. The sensors used up to now for OBD can also be used to monitor and control the ***exhaust*** emission behaviour of the vehicles on a continuous basis via an on-board monitoring (OBM) system. The OBM will also warn the user to perform repairs of the engine or the pollution control systems when these are needed. It is therefore appropriate to require that such a system is installed and to regulate its technical

requirements. ***The inducement of measures implied by those systems should not lead to endangering of road safety.***

(17) Manufacturers may opt to produce vehicles which include advanced options ***such as*** geofencing. Consumers and national authorities should be able to identify such vehicles through appropriate documentation.

(17a) Environmental data about vehicle types should be made available to vehicle users. An Environmental Vehicle Passport should therefore be made available for each vehicle. Vehicle users should also have access to up-to-date information about fuel consumption, state of health of batteries, pollutant emissions and other relevant information generated by on-board systems and monitors.

(18) In case the Commission makes a proposal for registering after 2035 new light-duty vehicles running exclusively on CO2 neutral fuels outside the scope of the CO2 fleet standards, and in conformity with Union law and the Union's climate neutrality objective, this Regulation will need to be amended to include the possibility to type approve such vehicles.

(19) Emissions from vehicles sold by small volume manufacturers constitute an insignificant part of emissions in the Union. Some flexibility may therefore be allowed in some of the requirements for such manufacturers. Small volume manufacturers should therefore be able to substitute certain tests during type-approval with declarations of compliance, while ultra-small volume manufacturers should be allowed to use laboratory tests based on random real-driving cycles.

(20) Regulations (EU) 2019/631[18] and (EU) 2019/1242[19] of the European Parliament and of the Council regulate the average fleet CO_2 emission performance for new motor vehicles in the Union. The procedures and methodologies for the accurate determination of CO_2 emissions, fuel and ***electric*** energy consumption, electric range and power for individual vehicles should be introduced in emission type-approval***, including updating and developing the***

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18 Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO2 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).

19 Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO2 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)

vehicle energy consumption calculation tool (VECTO) in order to take better into account, among other aspects, the energy efficiency of heavier vehicle combinations.

(20a) Whilst the term 'State of Health' (SOH) is commonly applied to refer to the health of a battery at a given point in its life, this term is not commonly defined and is determined through a variety of different methodologies: the 'State of Certified Energy' (SOCE) and the 'State of Certified Range' (SOCR). Both metrics represent a percentage of the certified battery energy or electric range remaining at a given point in time.

(21) In order to ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission in relation to obligations of manufacturers as part of type-approval and procedures, test and methodologies to be applied for declaration of ***compliance***, conformity of production check, in-service conformity-check and environmental vehicle passport (EVP); options and designations of vehicles; requirements, tests, methods and corrective measures related to durability of vehicles, systems, components and separate technical units, as well as registration and communication capabilities of OBM systems, including for the purpose of periodic technical inspections and roadworthiness checks; requirements and information to be provided by manufacturers of ***vehicles, including*** multistage vehicles***,*** as well as procedures to determine ***their*** CO_2 value; technical elements, administrative and documentation requirements for emission type-approval, checks and inspections and market surveillance checks, as well as reporting obligations, in-service conformity and conformity of production checks; methods and tests to (i) measure exhaust emissions in the ***laboratory*** and on the road ***and*** the use of portable emissions measurement systems for verifying real driving emissions, (ii) determine the CO_2 emissions, fuel and ***electric*** energy consumption, the electric range and engine power of a motor vehicle, (iii) provide specifications for gear shift indicator (GSI) (iv) determine the impact of O_3, O_4 trailers on the CO_2 , fuel and ***electric*** energy consumption, electric range and engine power of a motor vehicle, (iv) measure crankcase emissions, evaporative emissions, brake emissions, (v) evaluate compliance with minimum performance requirements of battery durability, (vi) assess the in-service conformity of engines and vehicles; compliance thresholds and performance requirements, as well as (vii) test and methods to ensure performance of sensors (OBD and OBM); (viii) methods to ensure and assess security measures; specification and characteristics of driver warning systems and inducement methods and to assess their correct operation; (ix) methods to assess the correct operation, effectiveness, regeneration and durability of original and replacement pollution

control systems; (x) methods to ensure and assess security measures including vulnerability analysis and tampering protection; (xi) methods to assess the correct functioning of types approved under specific EURO7 designations; (xii) ***methods to evaluate compliance with*** emission type-approvals for small and ultra-small volume manufacturers; (xiv) performance requirements for test equipment; (xv) specification of reference fuels; and (xvi) methods for assessing the absence of ***manipulation*** devices and ***manipulation*** strategies; (xvii) to measure tyre abrasion, as well as (xviii) EVP format, data and method of communication of the EVP data. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council[20]. ***In order to ensure continuity with regards to certain existing legal obligations on methods for measuring pollutant emissions, as regards vehicle types M_1 and N_1, the methods for measuring exhaust and evaporative emissions should reflect those laid down in Regulation (EU) 2017/1151, more specifically, from the latest version of Regulation (EU) 2017/1151 at the moment of adoption of the implementing act.***

(22) In order to amend or supplement, as appropriate, non-essential elements of this Regulation, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission in respect of test conditions based on data collected when testing Euro 7 vehicles, brakes or tyres; test requirements, in particular taking into account technical progress and data collected when testing Euro 7 vehicles; introducing vehicle options and designations based on innovative technologies for manufacturers but also setting out brake particle emission limits***, formaldehyde emission limits*** and abrasion limits for tyre types as well as minimum performance requirements of batteries and durability multipliers based on data collected when testing Euro 7 vehicles and setting out special rules for small volume manufacturers for vehicles of categories M_2, M_3, N_2, ***and N_3***. 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[21]. In particular, in order to ensure equal participation in the preparation of delegated acts, the European

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20 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).

21 OJ L 123, 12.5.2016, p. 1.

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.

(22a) The Union is a Contracting Party to the Agreement of the United Nations Economic Commission for Europe of 20 March 1958 concerning the adoption of uniform technical prescriptions for wheeled vehicles, equipment and parts which can be fitted to and/or be used on wheeled vehicles and the conditions for reciprocal recognition of approvals granted on the basis of these prescriptions. The requirements laid down in this Regulation should, where appropriate, align with the standards laid out in the UNECE Regulations or any subsequent amendments to this Regulation, where available, particularly in relation to limits on brake particle emissions, limits on tyre types regarding abrasion, and the establishment of minimum performance criteria for batteries.

(22b) Consequently, such limits or requirements in a proposal for a UNECE Regulation or an amendment to a UNECE Regulation that has been approved of in accordance with the procedure in Article 218(9) TFEU and Decision 97/836/EC should be incorporated into this Regulation. Accordingly, the power to adopt acts in accordance with Article 290 TFEU should be delegated to the Commission.

(23) In the interest of clarity, rationality and simplification, since the rules on emission type-approval of motor vehicles and engines, and of systems, components and separate technical units intended for such vehicles are updated and all contained in this Regulation, the existing Regulations (EC) No 595/2009 and (EC) No 715/2007 should be repealed and replaced by this Regulation.

(23a) In the interest of clarity, rationality and simplification, the following acts with implementing measures adopted under Regulations (EC) No 715/2007 and (EC) No 595/2009 should be repealed by this Regulation:

- ***Commission Regulation (EU) 582/2011;***
- ***Commission Regulation (EU) 2017/1151;***
- ***Commission Regulation (EU) 2017/2400;***
- ***Commission Regulation (EU) 2022/1362.***

(24) Whenever the measures provided for in this Regulation entail the processing of personal data, they should be carried out in accordance with Regulations (EU) 2016/679 of the European Parliament and of the Council[22] and Regulation (EC) No 45/2001 of the European Parliament and of the Council[23], as well as the national implementing measures thereto.

(25) It is important to grant Member States, national authorities and economic operators enough time to prepare for the application of the new rules introduced by this Regulation ***and its secondary legislation***. The date of application should therefore be deferred***, and different dates of application should be established for new and existing types***. While for light duty vehicles the date of application should be as soon as technically ***and economically*** possible, for heavy duty vehicles and trailers the date of application may be further delayed, since the transition to zero-emission vehicles will be longer for heavy duty vehicles.

(25a) For M_2 and M_3 vehicles, for which a 100% zero-emissions target is established as from the reporting period of the year 2030 in Regulation (EU) 2019/1242, transitional measures should be established in this Regulation, in order to ensure, in such a case, coherence with such obligations laid down in Regulation (EU) 2019/1242, as well as that the required investment efforts remain proportionate.

(26) Since the objectives of this Regulation, namely to lay down harmonised rules on the administrative and technical requirements for the ***emission*** type-approval of vehicles of categories M and N, and of systems, components and separate technical units, and on market surveillance of such vehicles, systems, components and separate technical units, with respect to emissions***, as well as pursuing the high levels of environmental and health protection,*** cannot be sufficiently achieved by the Member States, but can rather, by reason of their scale and effects, 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

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22 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1).

23 Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Union institutions and bodies and on the free movement of such data (OJ L 8, 12.1.2001, p. 1).

Article, this Regulation does not go beyond what is necessary in order to achieve those objectives**.**

HAVE ADOPTED THIS REGULATION:

Chapter I

Subject matter, scope and definitions

Article 1

Subject matter

1. This Regulation establishes common technical requirements and administrative provisions for the emission type-approval and market surveillance of motor vehicles, systems, components and separate technical units, with regard to their CO_2 and pollutant emissions, fuel and ***electric*** energy consumption and battery durability.

2. This Regulation ***also*** lays down rules for the emission type approval, conformity of production, in-service conformity, market surveillance, the durability of pollution control systems and traction batteries, on-board monitoring systems, security provisions to limit tampering and cybersecurity measures, and the accurate determination of CO_2 emissions, electric range, fuel and ***electric*** energy consumption and energy efficiency.

Article 2

Scope

This Regulation applies to motor vehicles of categories M_1, M_2, M_3, N_1, N_2 and N_3, as well as trailers of O_3 and O_4 categories as specified in Article 4 of Regulation (EU) No 2018/858, including those designed and constructed in one or more stages, and to systems, components and separate technical units intended for such vehicles***, and tyres of class C_1, C_2 and C_3 as specified in UN Regulation No 117 with the exception of ice grip tyres***.

Article 3

Definitions

For the purposes of this Regulation, definitions in Regulation (EU) 2018/858 apply.

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

(1) 'emission type-approval' means an EU type-approval complying with the administrative provisions and technical requirements of this Regulation in regards to their CO_2 and pollutant emissions, fuel and ***electric*** energy consumption and battery durability;

(1a) 'granting type-approval authority' means the approval authority that grants the emission type-approval;

(3) 'conformity of production' or 'CoP' means the activities carried out on new vehicles, separate technical units or components selected at the manufacturer's premises to ensure that the products put into the market comply with the requirements set out in this Regulation;

(4) 'in-service conformity' or 'ISC' means the activities carried out on vehicles in circulation***, systems, separate technical units or components*** with the purpose of verifying the durability requirements set out in this Regulation;

(5) 'engine' means the ***internal combustion engine*** of a vehicle;

(6) 'emissions' means the exhaust and non-exhaust emissions of a motor vehicle;

(7) 'exhaust emissions' means the emission from the tailpipe of the motor vehicle or engine of all of the following: CO_2, gaseous, solid, liquid compounds and crankcase emissions;

(8) 'gaseous pollutants' means the emissions of gaseous chemical species, excluding CO_2;

(9) 'CO_2 emissions' or 'CO_2' means the emission of carbon dioxide from the tailpipe;

(10) ‘nitrogen oxides’ or ‘NOx’ means the sum of ***nitric oxide (NO) and*** nitrogen ***dioxide (NO_2)*** emitted from the tailpipe;

(10a) ‘nitrous oxide’ or ‘N_2O’ means the emission of nitrous oxide from the tailpipe;

(11) ‘particulate matter’ or ‘PM’ means any material emitted from the tailpipe or the brakes and collected on a filter media;

(12) ‘particulate matter less than 10 μm’ or ‘PM_{10}’ means the particulate matter with a diameter less than 10 μm;

(13) ‘particle number’ or ‘PN’ means the total number of solid particles emitted from the tailpipe or the brakes;

(14) ‘particle number above 10 nm’ or ‘PN_{10}’ means the total number of solid particles emitted from the tailpipe or the brakes that have a diameter larger or equal than 10 nm;

(15) ‘carbon monoxide’ or ‘CO’ means the carbon monoxide emitted from the tailpipe;

(16) ‘methane’ or ‘CH_4’ means the methane emitted from the tailpipe;

(17) ‘total hydrocarbons’ or ‘THC’ means the total hydrocarbons emitted from the tailpipe;

(18) ‘non-methane hydrocarbons’ or ***‘NMHC***’ means the total hydrocarbons emitted from the tailpipe excluding methane;

(19) ‘non-methane organic gases’ or ‘NMOG’ means the sum of non-oxygenated and oxygenated hydrocarbons emitted from the tailpipe ***excluding methane***;

(20) ’ammonia’ or ‘NH_3’ means the ammonia emitted from the tailpipe;

(21) ’formaldehyde’ or ‘HCHO’ means the formaldehyde emitted from the tailpipe;

(22) ‘WHTC’ means the worldwide harmonised transient driving cycle in accordance with paragraph 7.2.1. of Annex 4 to UN Regulation No. 49;

(23) ‘WHSC’ means the worldwide harmonised steady state driving cycle in accordance with paragraph 7.2.2. of Annex 4 to UN Regulation No. 49;

(23a) 'electric energy consumption' is the rate at which a vehicle uses electric energy from its traction battery under specified conditions of use;

(23b) 'fuel consumption' is the rate at which a vehicle uses fuel under specified conditions of use;

(24) 'vehicle energy consumption calculation tool' or 'VECTO' means a simulation tool used for determining CO_2 emissions, fuel consumption, electric energy consumption and the electric range from heavy duty vehicles;

(26) 'evaporative emissions' means the hydrocarbon vapours emitted from the fuel system of a vehicle excluding those from exhaust emissions;

(27) 'crankcase emissions' means the gaseous pollutants emitted from the spaces in, or external to, an engine which are connected to the oil sump by internal or external ducts;

(28) 'brake particle emissions' means the particles emitted from the brake system of a vehicle;

(29) 'tyre abrasion' means the mass of material lost from the tyre due to the abrasion process and emitted to the environment;

(30) 'non-exhaust emissions' means evaporative, tyre abrasion, and brake emissions;

(31) 'pollutant emissions' means exhaust and non-exhaust emissions other than CO_2 emissions;

(32) 'pollution control device' means those devices of a vehicle that control or limit pollutant emissions;

(33) 'pollution control systems' means the pollution control devices installed in a vehicle, including all control units and software that govern their use;

(34) 'original pollution control systems' means a pollution control system or an assembly of such systems covered by the type-approval granted for the vehicle concerned;

(35) ‘replacement pollution control systems’ means a pollution control system or an assembly of such systems intended to replace an original pollution control system and which can be approved as a separate technical unit;

(37) ‘on-board diagnostic system’ or ‘OBD’ means a system that can generate vehicle on-board diagnostic (OBD) information, as defined in Article 3, point 49, of Regulation (EU) 2018/858 and is capable of communicating that information ***off-board***;

(38) ‘on-board monitoring system’ or ‘OBM’ means a system on board a vehicle that is capable of ***monitoring exhaust emissions, detecting exhaust*** emission ***exceedances*** and capable of ***communicating that*** information ***together with the State of Health*** information ***off-board***;

(39) ‘on-board fuel and ***electric*** energy consumption monitoring device’ or ‘OBFCM device’ means any software or hardware that senses and uses vehicle, engine, fuel or electric energy and payload/mass parameters to determine, store in the vehicle the fuel and ***electric*** energy consumption data and other parameters relevant for determining the fuel or ***electric*** energy consumption and energy efficiency of the vehicle;

(40) ***‘manipulation*** device’ means any ***element of design that results in a*** vehicle ***not complying with the requirements of the Regulation when driven but not under regulatory test, while it results in the vehicle appearing to be compliant when tested, or manipulates data related to sensors, fuel or electric energy consumption, electric range or battery durability***;

(41) ‘***manipulation*** strategy’ means a strategy that ***results in a vehicle not complying with the requirements*** of the ***Regulation when driven but not under regulatory test, while it results in the*** vehicle ***appearing to be compliant when tested, or manipulates*** data related to sensors, fuel or ***electric*** energy consumption, electric range or battery durability;

(42) ‘real driving emissions’ or ‘RDE’ means the emissions of a vehicle under ***the*** conditions specified in Tables 1 and 2 of Annex III;

(43) ‘odometer’ means an instrument indicating the total distance driven by the vehicle since its production;

(44) ‘tampering’ means the inactivation, or modification ***of the engine or electric motor***, vehicle pollution control ***devices*** and system, propulsion system, traction battery, odometer, OBFCM or OBD/OBM, including any software or other logical control elements of those systems and their data ***resulting in the vehicle not complying with this Regulation***;

(45) ‘own production facility’ means a manufacturing or assembly plant used by the manufacturer for the purpose of manufacturing or assembling new vehicles for that manufacturer, including, where relevant, vehicles which are intended for export;

(46) ‘own design centre’ means a facility in which the whole vehicle is designed and developed, and which is under the control and use of the manufacturer;

(47) ‘small volume manufacturer’ means a manufacturer of fewer than 10 000 new motor vehicles of category M_{1},or 22 000 new motor vehicles of category N_{1}, ***or 450 new motor vehicles from categories M_2 or M_3 combined, and 6 000 new motor vehicles from categories N_2 or N_3 combined*** registered in the Union per calendar year and which:

(a) is not part of a group of connected manufacturers; or

(b) is part of a group of connected manufacturers that is responsible in total for fewer than 10 000 new motor vehicles of category M_{1} or 22 000 new motor vehicles of category N_1 ***or 450 new motor vehicles from categories M_2 or M_3 combined, and 6 000 new motor vehicles from categories N_2 or N_3 combined*** registered in the Union per calendar year; or

(c) is part of a group of connected manufacturers but operates its own production facilities and own design centre;

(48) ‘ultra-small-volume manufacturer’ means a small volume manufacturer that produces fewer than 1 000 new motor vehicles of category M_1or fewer than 1 000 new motor vehicles of category N_1registered in the Union in the previous calendar year;

(49) ‘pure internal combustion engine vehicle’ or ‘ICEV’ means a vehicle where all of the propulsion energy converters are internal combustion engines, including hydrogen powered ones;

(50) ‘pure electric vehicle’ or ‘PEV’ means a vehicle equipped with a powertrain containing exclusively electric machines as propulsion energy converters and exclusively rechargeable electric energy storage systems as propulsion energy storage systems;

(51) ‘fuel cell’ means an energy converter transforming chemical energy (input) into electrical energy (output) or vice versa;

(52) ‘fuel cell vehicle’ or (‘FCV) means a vehicle equipped with a powertrain containing exclusively fuel cell(s) and electric machine(s) as propulsion energy converter(s);

(53) ‘fuel cell hybrid vehicle’ or (‘FCHV’) means a fuel cell vehicle equipped with a powertrain containing at least one fuel storage system and at least one rechargeable electric energy storage system as propulsion energy storage systems;

(54) ‘hybrid vehicle’ or ‘HV’ means a vehicle equipped with a powertrain containing at least two different categories of propulsion energy converters and at least two different categories of propulsion energy storage systems;

(55) ‘hybrid electric vehicle’ or ‘HEV’ means a hybrid vehicle where one of the propulsion energy converters is an electric machine;

(56) ‘off-vehicle charging hybrid electric vehicle’ or ‘OVC-HEVs’ means a hybrid electric vehicle that can be charged from an external source;

(57) ‘not off-vehicle charging hybrid electric vehicle’ or ‘NOVC-HEV’ means a vehicle with at least two different energy converters and two different energy storage systems that are used for the purpose of vehicle propulsion and that cannot be charged from an external source;

(58) ‘geofencing technologies’ means technologies that do not allow a hybrid vehicle to run with the use of the internal combustion engine (i.e. to enable zero-emission mode) when driven inside a specific geographic area;

(59) ‘zero-emission mode’ means a selectable mode, whereby a hybrid vehicle is driven without the use of the internal combustion engine;

(60) ‘net power’ means the power obtained on a test bench at the end of the crankshaft or its equivalent at the corresponding engine or motor speed with the auxiliaries, and which is determined under the reference atmospheric conditions;

(61) ‘wheel power’ means the power measured at the wheels of a vehicle and used for its propulsion;

(63) ‘rated power’ or ‘P_{rated}’ means the maximum net power of the engine or ***electric*** motor in kW;

(64) ‘mass in running order’ means the mass of the vehicle, with its fuel tank(s) filled to at least 90 per cent of their capacities, including the mass of the driver, fuel and liquids, fitted with the standard equipment in accordance with the manufacturer’s specifications and, when they are fitted, the mass of the bodywork, the cabin, the coupling and the spare wheels as well as the tools;

(65) ‘traction battery’ means a battery system that stores energy with the main purpose of propelling the vehicle;

(66) ‘electric range’ means the distance travelled in charge-depleting operation condition until the traction battery is depleted;

(67) ‘zero-emission range’ means the maximum distance a vehicle can travel ***with zero exhaust emissions*** , which for PEVs corresponds to the electric range;

(68) ‘durability’ means the ability of a system or device, component or any part of the vehicle to maintain its required performance over a given time;

(69) ‘battery durability’ means ***in-vehicle*** durability of a traction battery measured in terms of its State of Health;

(70) ‘state of health’ or ‘SOH’ means the measured or estimated state of a specific performance metric of a vehicle or traction battery at a specific point in its lifetime, expressed as a percentage of the performance that was determined when certified or new;

(71) ‘environmental vehicle passport’ or ‘EVP’ means a record ***in*** digital form containing information on the environmental performance of a vehicle at the moment of registration, including the level of pollutant emission limits, CO_2 emissions, fuel consumption, ***electric*** energy consumption, electric range and engine ***or electric motor*** power, and battery durability and other related values;

(72) ‘excess ***exhaust*** emissions driver warning system’ means a system designed, constructed and installed in a vehicle to provide information to the user about excess ***exhaust*** emissions and ***ensure*** repairs ***before further use***;

(73) ‘low-reagent driver warning system’ means a system designed, constructed and installed in a vehicle to warn the user of the low level of the consumable reagent, and ***ensure*** the use of the reagent;

(75) ‘declaration of ***compliance’ or ‘declaration***’ means a declaration by the manufacturer that a specific type or group of vehicles, component or separate technical unit is in ***compliance*** with the requirements of this regulation***;***

(76) ‘energy efficiency of a trailer’ means the performance of a trailer with regard to its influence on the CO_2 emissions, fuel and ***electric*** energy consumption, zero-emission range, electric range and engine ***or electric motor*** power of a towing motor vehicle;

(77) ***‘***snow tyre***’*** means a tyre whose tread pattern, tread compound or ***construction*** is primarily designed to achieve in ***mud and*** snow conditions a performance better than that of a normal tyre with regard to its ability to initiate ***and control*** vehicle motion;

(77a) ‘tyre for use in severe snow conditions’ means a snow tyre or a special use tyre whose tread pattern, tread compound or structure is specifically designed to be used in severe snow conditions;

(77b) ‘ice grip tyre’ means a class C1 snow tyre for use in severe snow conditions, that is additionally designed to be used on road surfaces covered with ice and that fulfils the requirements included in UN Regulation No 117;

(78) ***‘***special use tyre***’*** means a tyre intended for mixed use both on- and off-road or for other special duty. These tyres are primarily designed to initiate and maintain the vehicle in motion in off-road conditions***;***

(79) 'option' means a set of requirements laid down in this Regulation, which a manufacturer may choose to additionally comply with in order to be able to use the corresponding designation for the vehicles they manufacture.

Chapter II

Manufacturers' obligations

Article 4

Obligations of the manufacturers concerning construction of vehicles, *systems, components and separate technical units*

1. Manufacturers shall ensure that the new vehicles they manufacture, which are sold, registered or put into service in the Union, are type approved in accordance with this Regulation. ***From the specific dates of application set out in this Regulation,*** manufacturers shall ensure that the new ***systems,*** components or separate technical units, including engines, traction batteries, brake systems***, tyres*** and replacement pollution control systems requiring type-approval which they manufacture and which are sold or put into service in the Union are type approved in accordance with this Regulation

2. Manufacturers shall design, construct and assemble vehicles to comply with this Regulation, including complying with the emission limits set out in Annex I ***under the conditions set out in Annex III*** and respecting the values declared in the certificate of conformity and in the type-approval documentation for the lifetime of the vehicle as set out in table 1 of Annex IV. These vehicles shall be designated as "Euro 7" vehicles.

3. ***Where applicable,*** when verifying compliance with the exhaust emission limits, where the testing is performed in extended driving conditions, the emissions shall be divided by the extended driving divider set out in ***UN Regulation No 168 (add footnote : Original version of Regulation (OJ, …)."***.

4. Manufacturers shall design and construct ***systems,*** components or separate technical units, including engines***, electric motors***, traction batteries, brake systems***, tyres*** and replacement pollution control systems to comply with this Regulation, including complying with the emission limits set out in Annex I ***under the testing conditions set out in Annex III***

5. Manufacturers shall not design, construct and assemble vehicles with ***manipulation*** devices or ***manipulation strategies, which cause a non-compliant vehicle to appear compliant with this Regulation***.

6. Manufacturers shall design, construct and assemble vehicles of categories M_1, M_2, M_3, N_1, N_2 and N_3 with:

(a) OBD systems ***that can detect*** malfunctioning systems which lead to ***exhaust*** emission exceedances ***or the malfunction of components related to emission performance*** in order to facilitate repairs;

(b) OBM systems capable of ***monitoring exhaust*** emissions;

(c) OBFCM device to monitor their real-world fuel and ***electric*** energy consumption and other relevant parameters***, which*** are needed to determine their real-world fuel and energy efficiency;

(d) SOH monitors of the traction battery;

(e) excess ***exhaust*** emissions driver warning systems;

(f) low-reagent driver warning systems;

(g) devices communicating ***off-board*** vehicle generated data used for compliance with this regulation and OBFCM data, ***including*** for the purpose of periodic roadworthiness tests and technical roadside inspection, and for the purposes of communicating with recharging infrastructure and stationary power systems capable of supporting smart and bidirectional charging functionalities.

7. Manufacturers shall design, construct and assemble vehicles of categories M_1, M_2, M_3, N_1, N_2 and N_3in such a way to minimise vulnerabilities, arising in all phases of their life-cycle, that may lead to tampering with the following:

(a) fuel and reagent injection system,

(b) engine and engine control units***,***

(c) traction batteries ***and related management systems***

(d) odometer***,***

(e) pollution control systems***,***

(f) electric motor and related control units,

(g) OBFCM device,

(h) OBD,

(i) OBM and

(j) EVP.

8. The manufacturer shall prevent the possibility of exploiting vulnerabilities referred to in paragraph 7 ***to the fullest extent possible based on the best available knowledge at the time of type approval***. When such a vulnerability is found, the manufacturer shall ***take all the possible measures taking into account the state of technology to*** remove the vulnerability, by software update or any other appropriate means.

8a. Manufacturers shall not deny access on antitampering grounds to information, tools or processes required to develop, install and activate compatible aftermarket replacement parts meeting the technical requirements of the manufacturer. Vehicle manufacturers shall demonstrate whether withholding information, tools and processes in question would be a proportionate means to address the antitampering concerns at issue.

8b. Environmental data about the vehicle type and the environmental performance of the individual vehicle should be made available to the vehicle user and, where appropriate, displayed inside the vehicle. These data should cover those from the Environmental vehicle passport (EVP), from the OBM and OBFCM systems (including lifetime values) and battery state of health.

9. The manufacturers shall ensure the secure transmission of data related to emissions and battery durability by taking cybersecurity measures in accordance with UN Regulation 155[24].

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24 UN Regulation No 155 – Uniform provisions concerning the approval of vehicles with regards to cybersecurity and cybersecurity management system (OJ L 82, 9.3.2021, p. 30).

Article 5

Options of the manufacturers concerning the construction and designation of vehicles

4. Manufacturers may designate vehicles as "Euro 7G vehicle" where those vehicles are equipped with internal combustion engines with geofencing technologies. The manufacturer shall install a driver warning system on those vehicles to inform the user when the traction batteries are nearly empty and to stop the vehicle if not charged within 5 km from the first warning while on zero-emission mode ***inside the geofencing area***. The application of such geofencing technologies ***shall be demonstrated to the approval authority during type-approval and*** verified during the lifetime of the vehicle.

4a. At the manufacturer's request, for N2 vehicles between 3.5 and 5 tonnes maximum mass originating from an N1 vehicle type, the approval authority may grant an emission type-approval for an N1 vehicle type. Such vehicles shall be designated as "Euro 7ext vehicle".

5. Manufacturers may construct vehicles combining the characteristics referred to in paragraphs ***4 or 4a*** and designate them as "Euro ***7Gext***" vehicles.

Article 6

Durability requirements for vehicles, systems, components and separate technical units

1. Manufacturers shall ensure that the vehicles they manufacture, which are sold, registered or put into service in the Union, comply with the emission limits set out in Annex I when driven under conditions as set out in Annex III, for the lifetime of the vehicle as set out in table 1 of Annex IV, and comply with the minimum performance requirements on battery durability as set out in Annex II.

2. Manufacturers shall ensure that these vehicles comply with the values regarding CO_2 emissions, fuel and ***electric*** energy consumption and energy efficiency declared under the provisions of this Regulation for the lifetime of the vehicle as set out in Annex IV.

3. Manufacturers shall ensure that ***the design and functionality of*** OBFCM, OBD and OBM devices and anti-tampering measures installed in these vehicles ***shall*** comply with the provisions of this Regulation ***and shall not be deactivated*** as long as the vehicle is in use.

4. The requirements referred to in ***paragraphs*** 1 to 3 shall apply to vehicles for all types of fuels or energy sources by which they are powered. The same requirements shall also apply to all separate technical units and components intended for such vehicles.

5. In order to verify compliance with the requirements referred to in the first paragraph during the additional lifetime of a vehicle, the gaseous pollutant emission limits set out in Annex I shall be adjusted by using the durability multipliers, set out in table 2 of Annex IV.

6. The OBM systems installed by the manufacturer in these vehicles shall be capable of:

(a) ***monitoring and*** registering ***all exhaust emissions of NOx, NH_3 and PM and detecting exceedances of 2.5 times the exhaust*** emission ***limit or higher in case exhaust emission limit values for the testing of NOx, NH_3 and PM exist in Annex I***;

(b) communicating the data of the ***exhaust*** emission behaviour ***and battery durability data*** of the vehicle ***via the OBD port*** , including ***for the purpose of roadworthiness tests[25] and technical roadside inspections[26][27] and anonymously*** over the air for the purpose of ***monitoring compliance of vehicle types***;

(c) triggering ***the driver warning system when exhaust emissions are significantly exceeded, using harmonised methods to induce timely repairs, without preventing vehicles from completing an ongoing trip to avoid road safety issues***.

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25 ***Directive 2014/45/EU of the European Parliament and of the Council of 3 April 2014 on periodic roadworthiness tests for motor vehicles and their trailers and repealing Directive 2009/40/EC (OJ L 127, 29.4.2014, p. 129).***

26 ***Directive 2014/47/ EU of the European Parliament and of the Council of 3 April 2014 on the technical roadside inspection of the roadworthiness of commercial vehicles circulating in the Union and repealing Directive 2000/30/EC (OJ L 127, 29.4.2014, p. 134).***

27 ***Directive 2014/45/EU of the European Parliament and of the Council of 3 April 2014 on periodic roadworthiness tests for motor vehicles and their trailers and repealing Directive 2009/40/EC (OJ L 127, 29.4.2014, p. 129)***

7. The OBFCM devices installed by the manufacturer in these vehicles shall be capable of communicating ***all legally required relevant*** vehicle data they record***,*** via the OBD port and off-board.

8. ***Where a vehicle, system, component or*** separate technical ***unit presents*** a serious risk or non-compliance with the requirements laid down in this regulation, manufacturers***, from the moment they are aware of it,*** shall immediately take the necessary corrective measures, including repairs or modifications of those vehicles, systems, components and separate technical units as appropriate, to ***eliminate the serious risk or to*** ensure compliance with this regulation. Manufacturers or any other economic operator shall ***apply Regulation (EU) 2018/858 accordingly***. The manufacturer shall immediately inform the approval authority that granted the type-approval of the non-conformity with appropriate details.

Article 7

Obligations of the manufacturers concerning emission type-approval

1. In order to demonstrate compliance with the emission type-approval rules during emission type-approval, the manufacturer shall perform the tests specified in tables 1, 3, ***5, 7*** and 9 of Annex V. For the purpose of verifying the conformity of production with the requirements of this Regulation vehicles, components and separate technical units shall be selected at the premises of the manufacturer by the approval authority or the manufacturer. In-service conformity shall be checked for the periods prescribed in table 1 of Annex IV.

2. The manufacturer shall provide the ***approval*** authority with a signed declaration of ***compliance*** as regards the RDE, CO_2 ambient temperature correction, OBD, OBM, emission and battery durability, continuous or periodic regeneration, anti-tampering and crankcase requirements as specified in Annex V. The manufacturer shall provide to the ***approval*** authority a signed declaration of ***compliance*** on the use of geofencing ***option*** when the manufacturer selects ***it***.

3. The national authorities may test the vehicle type to verify its conformity during conformity of production, in-service conformity or market surveillance as specified in Annex V.

4. Manufacturers shall issue the environmental vehicle passport (EVP) for each vehicle and deliver that passport to the purchaser of the vehicle together with the vehicle, extracting the relevant data from sources such as the certificate of conformity and the type-approval documentation. The manufacturer shall ensure that EVP data are available for display in the vehicle electronic systems ***or through a QR code or any similar method*** and can be transmitted from on- to off- board.

5a. In the case of multi-stage type approval, Article 13(2) of Regulation (EU) 2018/858 shall apply for the emission type approval, conformity of production and in-service conformity

Article 8

Special rules for small volume manufacturers

1. As regards pollutant emissions, small volume manufacturers may substitute tests set out in tables 1, 3, 5, 7 and 9 of Annex V with declarations of ***compliance***. The compliance of vehicles constructed and put into the market by small volume manufacturers may be tested for in service conformity and market surveillance in accordance with tables 2, 4, 6, 8 and 10 of Annex V. Conformity of production tests set out in Annex V shall not be required. Article ***4(6) points (b), (c) and (e)*** shall not apply to small volume manufacturers ***of category M1 and N1***

2. Ultra-small volume manufacturers shall ***demonstrate compliance*** with the emission limits set out in Annex I ***either on-road or*** in laboratory tests based on real-driving cycles for in-service conformity and market surveillance purposes.

Article 9

Special rules for *vehicles with a type-approved engine*

1. In ***case of an approval of a M2, M3, N2 or N3 vehicle type with a type-approved engine, the vehicle manufacturer*** shall be responsible for the emission ***type approval. This shall also cover the engine installation on*** the vehicle***. Provided that the engine installation is***

in accordance with the engine installation specifications delivered by the ***engine manufacturer and subject to prior agreement between the engine manufacturer and the vehicle manufacturer, the engine manufacturer can be made responsible for demonstrating compliance with the vehicle in-service conformity requirements.***

2. ***In the case of a vehicle with an approved engine, the engine manufacturer shall perform the vehicle related type-approval and conformity of production tests specified in Table 3 of Annex V, from which the vehicle manufacturer is exempted. The engine manufacturer shall also perform the in-service conformity related tests, when the engine manufacturer is made responsible for demonstrating compliance to the vehicle in-service conformity requirements, except for the CO2 determination for which the vehicle manufacturer remains responsible***.

2a. The administrative requirements for the type approval and in-service conformity testing of vehicles in which a type-approved engine is installed shall cover in particular the characteristics of the engine type approval that shall be taken into consideration, the information to be provided by the engine manufacturer to the vehicle manufacturer and the attribution of in-service conformity responsibilities.

Chapter III

Obligations of Member States for emission type-approval and market surveillance

Article 10

Emission type-approval, conformity of production, in-service conformity and market surveillance

1. Approval authorities shall put in place measures to grant emission type-approvals to vehicle types, ***systems,*** components and separate technical units and to perform tests, checks and inspections for verifying whether the manufacturers comply with the requirements for conformity of production and in-service conformity in accordance with Annex V.

2. Market surveillance authorities shall perform market surveillance checks in accordance with Article 8 of Regulation (EU) 2018/858 and tables 2, 4, 6, 8 and 10 of Annex V.

3. With effect from … [***OP please insert the date = the date of entry into force of this Regulation***], where a manufacturer so requests, the approval authorities shall not refuse to grant EU emission type-approval or national emission type-approval for a new type of vehicle or engine, or prohibit the registration, sale or entry into service of a new vehicle complying with this regulation.

3a. With effect from 30 months after entry into force of this Regulation, approval authorities shall, on grounds relating to CO2 and pollutant emissions, fuel and electric energy consumption or battery durability, in the case of new types of M1, N1 vehicles, refuse to grant EU emission type approval or national emission type-approval which do not comply with this Regulation.

4. With effect from ***42 months after entry into force of this Regulation***, national authorities shall, in the case of new M_1, N_1 vehicles which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and ***electric*** energy consumption or battery durability, prohibit the registration, sale or entry into service of such vehicles.

4a. ***With effect from 48 months after entry into force of this Regulation, approval authorities shall, on grounds relating to CO2 and pollutant emissions, fuel and electric energy consumption or battery durability, in the case of new types of M2, M3, N2, N3 vehicles and new types of O3, O4 trailers, refuse to grant EU emission type-approval or national emission type-approval which do not comply with this Regulation.***

5. With effect from ***60 months after entry into force of this Regulation***, national authorities shall, in the case of new M_2, M_3, N_2, N_3 vehicles and new O_3, O_4 trailers, which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and ***electric*** energy consumption, energy efficiency or battery durability, prohibit the registration, sale or entry into service of such vehicles.

5a. ***As an exception to paragraph 5 and until 31 December 2029, for M2 and M3 vehicles, for which there is a 100% zero-emissions vehicles target as from the reporting period of the year 2030 in accordance with Regulation (EU) 2019/1242, national authorities shall allow the registration, sale or entry into service of new vehicles, which do not comply with this Regulation, but have a valid emission type approval according to Regulation (EU) 595/2009.***

6. With effect from 1 July 2030, national authorities shall, in the case of new M_1, N_1 vehicles constructed by small volume manufacturers which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and ***electric*** energy consumption, energy efficiency or battery durability, prohibit the registration, sale or entry into service of such vehicles.

7. With effect from 1 July 2031, national authorities shall, in the case of new M_2, M_3, N_2, N_3 vehicles constructed by small volume manufacturers, which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and ***electric*** energy consumption, energy efficiency or battery durability, prohibit the registration, sale or entry into service of such vehicles.

Article 11

Specific obligations of Member States concerning the emission type-approval of systems, components and separate technical units

1. With effect from ***30 months after entry into force of this Regulation***, the sale or installation of a system, component or separate technical unit intended to be fitted on an M_1, N_1 vehicle approved under this Regulation, shall be prohibited if the system, component and separate technical unit is not type approved in compliance with this Regulation.

2. With effect from ***48 months after entry into force of this Regulation***, the sale or installation of a system, component or separate technical unit intended to be fitted on an M_2, M_3, N_2, N_3, ***O_3, O_4*** vehicle approved under this Regulation, shall be prohibited if the

system, component and separate technical unit is not type approved in compliance with this Regulation.

3. Approval authorities may continue to grant extensions, to EU emission type-approvals of replacement pollution control systems granted before this regulation applies under the terms which applied at the time of the ***original*** emission type-approval. National authorities shall prohibit the sale or installation on a vehicle of such replacement pollution control systems unless they are type approved.

3a. With effect from 1 July 2028, national authorities shall only grant component or separate technical unit EU type approval in respect of new types of tyre of class C1 where it is in compliance with this Regulation and refuse to grant component/separate technical unit EC type approval in respect of new types of tyre of Class C1 that do not comply with this Regulation. With effect from 1 July 2030, national authorities shall prohibit the placing on the market of tyres of Class C1 which do not comply with this Regulation. From that date, national authorities shall prohibit the registration of new vehicles equipped with tyres of class C1 if the tyres are not compliant with this Regulation. Tyres of Class C1 which do not comply with the requirements of this Regulation and its implementing measures may continue to be made available on the market until 30 June 2032.

3b. With effect from 1 April 2030, national authorities shall only grant component or separate technical unit EU type approval in respect of new types of tyre of class C2 where it is in compliance with this Regulation and refuse to grant component/separate technical unit EC type approval in respect of new types of tyre of Class C2 that do not comply with this Regulation. With effect from 1 April 2032, national authorities shall prohibit the placing on the market of tyres of Class C2, which do not comply with this Regulation. From that date, national authorities shall prohibit the registration of new vehicles equipped with tyres of class C2 if the tyres are not compliant with this Regulation. Tyres of Class C2, which do not comply with the requirements of this Regulation and its implementing measures may continue to be made available on the market until 31 March 2034.

3c. With effect from 1 April 2032, national authorities shall only grant component or separate technical unit EU type approval in respect of new types of tyre of class C3

where it is in compliance with this Regulation and refuse to grant component/separate technical unit EC type approval in respect of new types of tyre of Class C3 that do not comply with this Regulation. With effect from 1 April 2034, national authorities shall prohibit the placing on the market of tyres of Class C3, which do not comply with this Regulation. From that date, national authorities shall prohibit the registration of new vehicles equipped with tyres of class C3 if the tyres are not compliant with this Regulation. Tyres of Class C3, which do not comply with the requirements of this Regulation and its implementing measures may continue to be made available on the market until 31 March 2036.

Article 12

Correct operation of systems using a consumable reagent and pollution control systems

1. Economic operators and independent operators shall not tamper with the vehicle and its systems.

2. National authorities shall, during in-service conformity or market surveillance checks, verify whether manufacturers of vehicles have correctly installed excess ***exhaust*** emissions driver warning systems, low-reagent driver warning systems and whether vehicles can be tampered.

Chapter IV

Role of the Commission and third parties for in-service conformity and market surveillance

Article 13

Application of test requirements for Commission and third parties

1. ***In-service conformity and market surveillance checks as set out in Tables 2, 4, 6, 8, and 10 of Annex V, shall be performed by the Commission*** in accordance with Article 9 of Regulation (EU) 2018/858 ***and may be performed by third parties in accordance with***

Article 13(10) of that Regulation, to verify compliance of vehicles, components and separate technical units with this Regulation.

2. Manufacturers shall make available the data required to perform such checks to the Commission and third parties in accordance with Articles 9(5) and 13(10) of Regulation (EU) 2018/858.

Chapter V
Tests and declarations

Article 14

Procedures and tests

1. Procedures for the emission type-approval shall include tests and checks as ***specified in Annex V as*** well as the application of all administrative procedures and documentation requirements. For the requirements specified in Annex V, where applicable the manufacturer shall provide a declaration of ***compliance*** to the ***approval*** authority.

2. Tests to prove compliance with the requirements of ***this Regulation*** shall be applied by manufacturers and national authorities as specified in Annex V. Tests to prove compliance with the requirements of ***this Regulation*** may be applied by the Commission and third parties also as specified in Annex V. ***Where a test is specified as optional in Tables 1, 3, 5 and 7 of Annex V the approval authority may request that the specified test is performed.***

Tables 1, 3, 5, 7 and 9 of Annex V are applicable to manufacturers. Tables 2, 4, 6, 8 and 10 of Annex V are applicable to national authorities, recognised third parties and the Commission.

3. The Commission shall adopt implementing acts ***to set out procedures and*** testing methodologies, administrative provisions, amending and extending emission type-approvals, data access, documentation requirements and templates ***for emission type approval, conformity of production, in-service conformity and market surveillance,*** for all of the following:

(a) M_1, N_1 vehicle types;

(b) M_2, M_3, N_2, N_3 vehicle types;

(c) engines used in M_2, M_3, N_2, N_3 vehicle types;

(d) OBM/OBD systems;

(da) excess emissions driver warning system;

(db) low-reagent driver warning system;

(e) anti-tampering, security and cybersecurity systems;

(f) replacement pollution control systems types and their parts;

(g) brake system types and their replacement parts ***in respect to particle emissions***;

(h) ***tyres of class C_1, C_2 and C_3*** in respect to tyre abrasion;

(i) other component types and their replacement parts;

(j) CO_2, fuel and ***electric*** energy consumption, electric range and power determination for M_1, N_1 vehicles, provisions for OBFCM;

(k) CO_2, fuel and ***electric*** energy consumption, zero-emission range, electric range and power determination for M_2, M_3, N_2, N_3 vehicles, energy efficiency of O_3, O_4 trailers, provisions for OBFCM.

4. The Commission shall adopt implementing acts for the emission type-approval, in-service conformity, conformity of production and market surveillance, to lay down the following:

(a) the methods to measure exhaust emissions in the ***laboratory*** and on the road ***as per usual use for real world driving and*** the use of portable emissions measurement systems for verifying real driving emissions;

(b) the methods to determine the CO_2 emissions, fuel and ***electric*** energy consumption, zero-emission range, electric range and power of a motor vehicle;

(c) the methods, requirements and technical specifications for gear shift indicators;

(d) the methods to determine the energy efficiency of O_3, O_4 trailers;

(e) the methods to measure crankcase emissions;

(f) the methods to measure evaporative emissions;

(g) the methods to measure brake particle emissions including methods for ***M2, M3, N2 and N3 vehicles***, real driving brake particle emissions and regenerative braking;

(h) the methods to measure tyre abrasion;

(i) the methods to evaluate compliance with minimum performance requirements of battery durability;

(j) ***the methods, requirements and tests***, including compliance thresholds, ***to ensure*** performance ***of the OBFCM device, OBD and OBM systems and the*** sensors ***of these devices and systems and off-board*** communication of data recorded by these devices and systems;

(k) characteristics and performance of driver warning systems and inducement methods and method to assess their correct operation;

(l) the methods to assess the correct operation, effectiveness, regeneration and durability of original and replacement pollution control systems;

(m) methods to ensure and assess security measures referred to in Article 4(5), including the methodology for the vulnerability analysis and tampering protection;

(n) ***the methods to evaluate compliance with requirements*** for emission type-approvals ***applicable in regard of vehicles constructed by*** small and ultra-small volume manufacturers ***as*** set out in Article 8 ***and test procedures for such vehicles***;

(o) the methods to assess the correct functioning of vehicle types approved under the designations in Article 5;

(p) checks for compliance with the provisions of Article 9 (1) and test procedures for multistage vehicles;

(q) performance requirements for test equipment;

(r) specifications of reference fuels for testing;

(s) methods for establishing the absence of ***manipulation*** devices and ***manipulation*** strategies;

(u) format and data and ***off-board communication methods for the EVP, and*** methods for ***in-vehicle display of environmental data about the vehicle type and the environmental performance of the individual vehicle***;

(v) administrative requirements and documentation for emission type-approval***, conformity of production, in service conformity and market surveillance.***

(w) reporting obligations where appropriate.

5. Any implementing act referred to in paragraphs 3 and 4 shall cover one or more of the items referred to in paragraph 3, points (a) to (k) combined with one or more of the items referred to in paragraph 4, points (a) to (w).

6. For implementing acts adopted pursuant to paragraphs 3 and 4 of this Article, as regards M_1 and N_1 categories, the methods for measuring pollutant exhaust and evaporative emissions shall reflect those laid down in the latest version of Regulation (EU) 2017/1151 at the moment of adoption of the implementing act pursuant to paragraphs 3 and 4 of this Article.

7. For implementing acts adopted pursuant to paragraphs 3 and 4 of this Article, the Commission shall adopt, by 12 months after entry into force of the Regulation, the following implementing acts, setting out rules for M_1 and N_1 vehicles pursuant to paragraph 3(a):

(a) with respect to pollutant emissions pursuant to paragraphs 4(a), 4(e), 4(f), 4(k), 4(q), 4(r), 4(s), 4(u), 4(v) and 4(w);

(b) with respect to the methods to determine the CO_2 emissions, fuel and electric energy consumption, zero-emission range, electric range, vehicle power as well as performance of the OBFCM device, pursuant to paragraph 4(b), 4(c) and 4(j);

(c) with respect to the OBM and OBD systems pursuant to paragraph 4(j) and 4(k).

8. ***For implementing acts adopted pursuant to paragraphs 3 and 4 of this Article, the Commission shall adopt, by 30 months after entry into force of the Regulation, the following implementing acts, setting out rules for M_2, M_3, N_2 and N_3 vehicles and their engines as well as for O_3 and O_4 trailers pursuant to paragraphs 3(b) and 3(c) respectively:***

(a) with respect to pollutant emissions pursuant to paragraphs 4(a), 4(e), 4(k), 4(q), 4(r), 4(s), 4(u), 4(v) and 4(w);

(b) with respect to the methods to determine the CO_2 emissions, fuel and electric energy consumption, zero-emission range, electric range, vehicle power as well as performance of the OBFCM device, pursuant to paragraphs 4(b), 4(d) and 4(j);

(c) with respect to the OBM and OBD systems pursuant to paragraph 4(j) and 4(k).

The implementing acts ***referred to in paragraphs 3 and 4 of this Article*** shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 15

Adaptation to technical progress

1. The Commission shall be empowered to adopt delegated acts in accordance with Article 16 in order to take into account technical progress to amend ***this Regulation as follows***:

(a) ***Table 2 of*** Annex III, as regards the test conditions for M_2, M_3, N_2, N_3 vehicles, based on data collected when testing Euro 7 vehicles;

(b) ***Tables 4 and 5 of*** Annex III, as regards the test conditions, based on data collected when testing Euro 7 brakes or tyres;

(c) Annex V, as regards the application of test requirements and declarations;

(d) Article 5 by introducing ***additional*** options and designations based on innovative technologies for manufacturers***;***

(e) setting out durability multipliers in Table 2 of Annex IV based on data collected when testing exhaust emissions of M_2, M_3, N_2, N_3 vehicles and a report on the

durability of heavy duty vehicles submitted to the European Parliament and Council in accordance with Article 18(3);

(f) setting out special rules for small volume manufacturers for vehicle categories M_2, M_3, N_2, N_3 under Article 3 and Article 8 of this Regulation.

(g) where appropriate, setting out emission limits for formaldehyde from M2, M3, N2 and N3 vehicles in Annex I, Table 2, following and based on the review in accordance with Article 18(2)(e).

2. Where either i) a proposal for a UNECE Regulation, for a Global Technical Regulation or an amendment to a UNECE Regulation or to a Global Technical Regulation has been adopted and without undue delay after such adoption, or ii) based on the reports submitted to the European Parliament and to the Council according to Articles 18(2c) and 18(2d), where appropriate, taking into account technical progress***, the Commission shall adopt delegated acts in accordance with Article 16, amending this Regulation as follows***:

(a) setting out brake particle emission limits in Annex I ***in line with the state-of-the art technologies and, if appropriate,*** referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29)***. This shall include the power to, where relevant amend respectively Tables 5a, 5b, 5c and 6 of Annex I, by providing for different limits or criteria depending on categories of vehicles and powertrain technologies.***

(b) setting out abrasion limits for tyre types in Annex I referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29); ***In derogation from the first subparagraph of this paragraph and the previous sentence, the Commission shall adopt delegated acts in accordance with Article 16 amending this Regulation by setting out abrasion limits for tyre types in Annex I in the event that uniform provisions have not been established in UN WP.29 before the relevant deadline laid down in Article 18 (4a), in line therewith, referring, where appropriate, to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29), and taking into account technical progress, by 1 July 2027 for C1 tyres, by 1 April 2029 for C2 tyres, and by 1 April 2031 for C3 tyres.***

(c) ***setting out the minimum performance requirements of batteries laid down in Annex II, in line with the state-of-the art technologies and battery architecture as well as their application particularly in small vehicles and taking into account criteria such as mileage and lifetime periods for all vehicle categories in relation with such battery performance.***

Chapter VI
General Provisions

Article 16

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 Article 15 shall be conferred on the Commission for a period of five years from... [OP please insert the date = the date of entry into force of this Regulation]. 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 to in Article 15 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 on Better Law-Making of 13 April 2016.

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 Article 15 shall enter into force only if no objection has been expressed either by the European Parliament or by 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 two months at the initiative of the European Parliament or of the Council.

Article 17

Committee Procedure

1. The Commission shall be assisted by the Technical Committee –Motor Vehicles. 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.

Article 18

Reporting *and review*

1. By 1 September 2030, Member States shall inform the Commission of the application of this Regulation.

2. By 1 September 2031, on the basis of the information supplied in accordance with paragraph 1, the Commission shall submit to the European Parliament and to the Council an evaluation report on the application of this Regulation***, including an evaluation of the exhaust and non-exhaust emission reductions achieved***.

3. By 31 December 2025, the Commission shall submit to the European Parliament and to the Council a report assessing the durability performance of heavy-duty vehicles in regard of emissions.

4. In the event that uniform provisions have not been adopted by the UN WP.29 by 1 July 2026 for tyres of class C1, by 1 April 2028 for tyres of class C2 and by 1 April 2030 for tyres of class C3 tyres, the Commission shall develop a method for the measurement of tyre abrasion and define abrasion limits for tyres based on existing state-of-the-art methods.

5. By 31 December 2027, the Commission shall submit to the European Parliament and to the Council a report on battery durability reviewing state-of the-art, as a basis for a review of the minimum performance requirements, in view of the delegated acts referred to in Article 15(2)(c).

This report shall assess, among other aspects, the setting out of minimum performance requirements for vehicles up to at least 10 years, or 200 000km, whichever comes first.

6. By 31 December 2027, the Commission shall submit to the European Parliament and to the Council a report on brake particle emissions reviewing measuring methods and state-of-the-art, in view of the delegated acts referred to in Article 15(2)(a) on the level of the second stage emission limits set out in Tables 4a, 4b and 4c of Annex I.

7. By 31 December 2027, the Commission shall conduct a review on the appropriateness to set a specific limit for formaldehyde in respect of M2, M3, N2 and N3 vehicles, based on the expected use of fuels leading to an increase in formaldehyde emissions, in view of a possible delegated act referred to in Article 15(1)(g).

Chapter VII
Final Provisions

Article 18a

Amendment to Regulation (EU) 2018/858

Paragraphs 1-3 of Regulation (EU) 2018/858 shall be replaced as follows:

1. Member States shall lay down the rules on penalties applicable to infringements by economic operators, independent operators, and technical services of this Regulation and

shall take all measures necessary to ensure that they are implemented. The penalties provided for shall be effective, proportionate and dissuasive. In particular, those penalties shall be proportionate to the seriousness of the non-compliance and to the number of non-compliant vehicles, systems, components or separate technical units made available on the market of the Member State concerned. Member States shall notify the Commission of those rules and of those measures and shall notify it without delay of any subsequent amendment affecting them.

2. The types of infringements by economic operators and technical services subject to penalties shall be at least the following:

(a) *making false declarations during approval procedures or corrective or restrictive measures being imposed in accordance with Chapter XI;*

(b) falsifying test results for type-approval or for market surveillance;

(c) withholding data or technical specifications that could lead to the recall of vehicles, systems, components and separate technical units, or to the refusal or withdrawal of EU type-approval certificate;

(d) non-compliance by technical services in respect of the requirements for their designation.

3. In addition to the types of infringements set out in paragraph 2, the types of infringements by economic operators that are also subject to penalties shall be at least the following:

(a) refusing to provide access to information;

(b) making available on the market vehicles, systems, components or separate technical units subject to approval without such approval or falsifying documents, certificates of conformity, statutory plates or approval marks with that intention;

(c) tampering with the vehicle and its systems.

3a. In additional to the types of infringements set out in paragraphs 2 and 3, the types of infringements by manufacturers that are also subject to penalties shall be at least the following:

(a) *falsifying test results for in-service conformity under emission type-approval;*

(b) *designing, constructing and assembling vehicles with manipulation devices or manipulation strategies, which cause a non-compliant vehicle to appear compliant with this Regulation;*

(c) *designing, constructing and assembling vehicles of categories M_1, M_2, M_3, N_1, N_2 and N_3 without the required excess exhaust emissions driver warning systems or low-reagent driver warning systems.*

3b. *The types of infringements by independent operators subject to penalties shall include at least the tampering with the vehicle and its systems.*

Article 19

Repeal

1. Regulation (EC) 715/2007 is repealed with effect from 1 July ***2030.***

Regulation (EC) 595/2009 is repealed with effect from 1 July ***2031.***

References to Regulations (EC) 715/2007 and 595/2009 shall be construed as references to this Regulation and shall be read in accordance with the correlation table set out in Annex VI to this Regulation.

2. ***Commission Regulation (EU) 2017/1151 is repealed with effect from 1 July 2030. Commission Regulation (EU) No 582/2011, Commission Regulation (EU) 2017/2400 and Commission Regulation (EU) 2022/1362 are repealed with effect from 1 July 2031.***

Article 20

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 ***30 months after the entry into force of this Regulation for new type*** M_1, N_1 vehicles and components and separate technical units for those vehicles and ***42 months after the***

entry into force of this Regulation for new M_1, N_1 vehicles and components and separate technical units for those vehicles. It shall apply 48 months after the entry into force of this Regulation for new type M_2, M_3, N_2, N_3 vehicles and components and separate technical units for those vehicles and O_3, O_4 ***trailers and 60 months after the entry into force of this Regulation for new M_2, M_3, N_2, N_3 vehicles and components and separate technical units for those vehicles and O_3, O_4***trailers.

It shall apply from 1 July 2028 for new tyre types of class C1, from 1 April 2030 for new tyre types of class C2 and from 1 April 2032 for new tyre types of class C3.

It shall apply ***as*** from 1 July 2030 for M_1, N_1 ***vehicles, constructed by small volume manufacturers and from 1 July 2031 for M2, M3, N2, N3*** vehicles constructed by small volume manufacturers.

Notwithstanding paragraph 2, Article 11(3) shall apply from the entry into force of this regulation.

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

Done at Brussels,

For the European Parliament	*For the Council*
The President	*The President*

ANNEX I

EURO 7 EMISSION LIMITS

Table 1: Euro 7 exhaust emission limits for M_1, N_1 vehicles with internal combustion engine

		Mass in running order (MRO) (kg)	Mass of carbon monoxide (CO)		Mass of total hydrocarbons (THC)		Mass of nonmethane hydrocarbons (NMHC)		Mass of oxides of nitrogen (NOx)		Combined mass of total hydrocarbons and oxides of nitrogen (THC + NOx)		Mass of particulate matter (PM)		Number of particles (PN_{10})	
			L_1 (mg/km)		L_2 (mg/km)		L_3 (mg/km)		L_4 (mg/km)		$L_2 + L_4$ (mg/km)		L_5 (mg/km)		L_6 (#/km)	
Category	Class		PI	CI	PI	CI	PI	CI	PI	CI	PI	CI	PI	CI	PI	CI
M_1	-		1000	500	100	-	68	-	60	80	-	170	4.5	4.5	$6x10^{11}$	$6x10^{11}$
N_1	I	MRO ≤ 1280	1000	500	100	-	68	-	60	80	-	170	4.5	4.5	$6x10^{11}$	$6x10^{11}$
	II	1280 < MRO ≤ 1735	1810	630	130	-	90	-	75	105	-	195	4.5	4.5	$6x10^{11}$	$6x10^{11}$
	III	1735 < MRO	2270	740	160	-	108	-	82	125	-	215	4.5	4.5	$6x10^{11}$	$6x10^{11}$

Table 2: Euro 7 exhaust emission limits for M_2, M_3, N_2 and N_3 vehicles with internal combustion engine and internal combustion engines used in those vehicles

Pollutant emissions	*WHSC (CI) and WHTC (CI and PI)*	**REAL Driving Emissions (RDE)**
	per kWh	*per kWh*
NO_x in mg	***200***	***260***
PM in mg	***8***	**-**
PN_{10} in #	***$6x10^{11}$***	***$9 x 10^{11}$***
CO in mg	***1500***	***1950***
NMOG in mg	**80**	***105***
NH_3 in mg	***60***	***85***
CH_4 in mg	***500***	***650***
N_2O in mg	***200***	***260***

Table 3: Euro 7 evaporative emission limits for petrol fuelled M_1, N_1 vehicles

Mass of evaporative emission (g/test)
1.5

Table 4: Euro 7 brake particle emission limits in standard driving cycle applying until [31/12/2029], by powertrain technology

Emission limits in mg/km per vehicle	M1, N1 vehicles excluding N1 Class III*				
Powertrain technology	PEV	OVC-HEV	NOVC-HEV	FCV	ICEV
Brake particle emissions (PM10)	3	7	7	7	7

*For N1 Class III vehicles, the applicable limits are as follows: PEV 5 mg/km; OVC-HEV, NOVC-HEV, FCV and ICEV 11 mg/km.

Table 4a: Euro 7 brake particle emission limits in standard driving cycle applying as of [01/01/2030] following the review specifed in Article 18(6), by powertrain technology (M1 and N1 vehicles)

Emission limits	M1, N1 vehicles				
Powertrain technology	PEV	OVC-HEV	NOVC-HEV	FCV	ICEV
Brake particle emissions (PM10)					
Brake particle number emissions (PN)					

Table 4b: Euro 7 brake particle emission limits in standard driving cycle applying as of [01/01/2030] following the review specifed in Article 18 (6), by powertrain technology (M2 and N2 vehicles)

Emission limits	M2, N2 vehicles				
Powertrain technology	PEV	OVC-HEV	NOVC-HEV	FCV	ICEV
Brake particle emissions (PM10)					
Brake particle number emissions (PN)					

Table 4c: Euro 7 brake particle emission limits in standard driving cycle applying from [01/01/2030] until 31/12/2034 following the review specifed in Article 18(6), by powertrain technology (M3 and N3 vehicles)

Emission limits	M3, N3 vehicles				
Powertrain technology	PEV	OVC-HEV	NOVC-HEV	FCV	ICEV
Brake particle emissions (PM10)					
Brake particle number emissions (PN)					

Table 5: Euro 7 brake particle emission limits in standard driving cycle applying as of 1/1/2035 for all powertrain technologies, by vehicle category

Emission limits	M1, N1 vehicles	M2, M3 vehicles	N2, N3 vehicles
Brake particle emissions (PM10)	3 mg/km per vehicle		
Brake particle number emissions (PN)			

Table 6: Euro 7 tyre abrasion rate limits

Tyre abrasion rate limits	**C1 tyres**	**C2 tyres**	**C3 tyres**
Normal tyres			
Snow tyres			
Special use tyres			

ANNEX II

EURO 7 MINIMUM PERFORMANCE REQUIREMENTS FOR BATTERY DURABILITY

Table 1: Euro 7 Minimum performance requirements (MPR) for battery durability for M_1 vehicles

Battery energy based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV	80%	72%	
PEV	80%	72%	

Range based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV			
PEV			

*As specified in Annex IV.

Table 2: Euro 7 Minimum performance requirements (MPR) for battery durability for N_1 vehicles

Battery energy based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV	75%	67%	
PEV	75%	67%	

Range based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV			
PEV			

*As specified in Annex IV.

Table 3: Euro 7 Minimum performance requirements (MPR) for battery durability for M_2, M_3, N_2, N_3 vehicles

Battery Energy based MPR	Vehicles in main lifetime*	Vehicles in additional lifetime*
OVC-HEV		
PEV		

*As specified in Annex IV

ANNEX III

TEST CONDITIONS

Table 1: Conditions for testing compliance of M_1, N_1 vehicles with exhaust emission limits with any market fuel and lubricant within the specifications issued by the manufacturer of the vehicle

Laboratory exhaust emission measurement	Real Driving Emission (RDE) measurement
For all exhaust emission tests conducted using the WLTP chassis dynamometer test cycle, the provisions of UN Regulation No 154 shall apply.** **The provisions in respect of Level 1A (4-phase WLTP) shall apply.**	**For Real Driving Emission (RDE) tests conducted on the road, the provisions of UN Regulation No 168*** shall apply, with emissions evaluation fulfilled with respect to the 4-phase WLTP.**

** UN Regulation No 154, 02 series of amendments (OJ L 290, 10.11.2022, p. 1).

*** UN Regulation No 168, Original version of Regulation (OJ ...)

Table 2: Conditions for testing compliance of M_2, M_3, N_2 and N_3 vehicles with exhaust emission limits with any market fuel and lubricant within the specifications issued by the manufacturer of the vehicle

Laboratory exhaust emission measurement	RDE measurement
For all exhaust emission tests conducted using the WHTC/WHSC engine bench test cycles, the provisions of UN Regulation No 49****, Annex 4 shall apply.	The provisions of UN Regulation No 49****, Annex 8 shall apply with the following exceptions of: • Annex 8 - Appendix 1 - point A.1.4.2.2.2.1. should read as follows: "The valid windows are the windows whose average power exceeds the power threshold of 6 % of the maximum engine power" • the conformity factor (CF) in Table 2 of point 6.3 where the value = 1.0 shall be used for all pollutants. The applicable limits are the Real Driving Emissions (RDE) limits in Annex I Table 2.

**** 07 series of amendments (OJ L 14, 16.1.2023, p. 1).

Table 3: Conditions for testing compliance with evaporative emission limits with any market fuel and lubricant within the specifications issued by the manufacturer of the vehicle

	Testing conditions
Evaporative emission SHED[28] test	**Provisions of UN Regulation No 154, Level 1A (4-phase WLTP) shall apply.*******

[28] SHED: Sealed housing for evaporative determination.

***** 02 series of amendments (OJ L 290, 10.11.2022, p. 1).

Table 4: Conditions for testing compliance with brake particle emission limits

	M_1, N_1 vehicles	M_2, M_3, N_2 and N_3 vehicles
Brake particle emissions test	**Testing according to the UN GTR on brake emissions**	

Table 5: Conditions for testing compliance with tyre abrasion limits

	C1 tyres	**C2 tyres**	**C3 tyres**
Tyre abrasion limits test	Based on the testing methodologies developed in UN for testing tyre abrasion in real world	Based on the testing methodologies developed in UN for testing tyre abrasion in real world	Based on the testing methodologies developed in UN for testing tyre abrasion in real world

ANNEX IV

LIFETIME REQUIREMENTS

Table 1: Lifetime of vehicles, engines and pollution control systems

Lifetime of vehicles, engines and replacement pollution control devices	**M_1, N_1 and M_2**	**N_2, N_3<16 t*, M_3<7.5 t***	**N_3>16 t*, M_3>7.5 t***
Main lifetime	Up to 160 000 km or 8 years, whichever comes first	300 000 km or 8 years, whichever comes first	700 000 km or ~~15~~ **12** years, whichever comes first
Additional lifetime	After main lifetime and up to 200 000 km or 10 years, whichever comes first	After main lifetime and up to 375 000 km or 10 years, whichever comes first	After main lifetime and up to 875 000 km or 15 years, whichever comes first

*** Maximum mass.**

Table 2: Applicable durability multipliers for adjusting exhaust emission limits under Annex 1 when testing vehicles, engines and replacement pollution control devices during additional lifetime

Durability multipliers	**M_1, N_1 and M_2**	**N_2, N_3<16 t*, M_3<7.5 t***	**N_3>16 t*, M_3>7.5 t***
Durability multiplier for additional lifetime	1.2 for gaseous pollutant emissions		

* Maximum mass.

ANNEX V

APPLICATION OF TEST REQUIREMENTS AND DECLARATIONS

Table 1: Application of test requirements and declarations for M_1, N_1 vehicles for vehicle manufacturers

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
Gaseous pollutants and PN in road testing (RDE)	Required demonstration test for all fuels for which the type approval is granted and declaration of compliance for all fuels, all payloads and all applicable vehicle types	Not required	Optional
Gaseous pollutants, PM, PN, CO_2 emissions, fuel consumption (OBFCM), electric energy consumption and electric range (Battery Durability) (WLTP at 23 °C)	Required test for all fuels for which the type approval is granted	Required for exhaust emissions and OBFCM	Required for exhaust emissions, OBFCM and SOH monitors of battery durability
CO_2 ambient temperature correction (WLTP at 14°C)	Declaration	Not required	Optional
Crankcase emissions	Declaration that a closed crankcase system or routing to the tailpipe is installed[28]	Required	Optional

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
Evaporative emissions SHED test	Required	Required	Optional
Emissions durability	Declaration	Not required	Not required
Correct operation of systems using a consumable reagent and pollution control systems	Declaration	Not required	Optional
Battery durability	Declaration	Not required	Required
Laboratory test of low temperature for emissions and range	Required	Not required	Optional
On-board diagnostics	Declaration	Not required	Optional
On-board monitoring	Declaration and demonstration	Not required	Required
Power determination	Required	Not required	Optional
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required

Table 2: Application of test requirements and declarations for M_1, N_1 vehicles for Member States and recognised third parties/Commission

Test requirements	**Tests and requirements for emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance)**	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Gaseous pollutants and PN in road testing (RDE)	Required demonstration test for all fuels for which the type approval is granted and declaration of compliance for all fuels, all payloads and all applicable vehicle types	Not required	Required	Optional	Required	Optional
Gaseous pollutants, PM, PN, CO_2 emissions, fuel consumption (OBFCM), electric energy consumption and electric range (Battery Durability) (WLTP at 23 °C)	Required test for all fuels for which the type approval is granted	Audits or optional testing	Required	Optional	Optional	Optional
CO_2 ambient temperature correction (WLTP at 14°C)	Declaration[28]	Not required	Optional	Optional	Required	Optional
Crankcase emissions	Declaration that a closed crankcase system or routing to the tailpipe is installed[28]	Audits or optional testing	Optional	Optional	Optional	Optional

Test requirements	**Tests and requirements for emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance)**	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Evaporative emissions SHED test	Required	Audits or optional testing	Optional	Optional	Required	Optional
Emissions durability	Declaration	Not required	Required	Optional	Required	Optional
Correct operation of systems using a consumable reagent and pollution control systems	Not required	Not required	Required	Optional	Required	Optional
Battery durability	Declaration	Not required	Required	Optional	Required	Optional
Laboratory test of Low temperature for emissions + range	Required	Not required	Optional	Optional	Required	Optional

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity		Tests at market surveillance)	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
On-board diagnostics	Declaration	Not required	Optional	Optional	Required	Optional
On-board monitoring	Demonstration +Declaration	Not required	Required	Optional	Required	Optional
Power determination	Required	Not required	Optional	Optional	Optional	Optional
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required	Not required	Required	Optional
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required	Not required	Required	Optional

Table 3: Application of tests requirements, declarations and other requirements for type-approval and extensions for M_2, M_3, N_2 and N_3 vehicles for manufacturers

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
Gaseous pollutants, PM and PN and CO_2 emissions, fuel consumption on transient cycle (WHTC and WHSC)	Required on the parent engine of the emission family and declaration for all family members* **	Required on an engine out of the family ***	Not required
Gaseous pollutants, PN in road testing (RDE) for each fuel and for the applicable vehicle categories (M_2, M_3, N_2 and N_3)	Required demonstration tests for all fuels for which the type approval is granted per vehicle type and a declaration of compliance for all fuels, all payloads and all applicable vehicle categories **	Not required	Required test on a vehicle with any fuel and on any vehicle category and any payload for all engine types every two years ***
CO_2,emissions, fuel/electric energy consumption, zero-emissions/electric range determination of a vehicle	VECTO licence, components certification.	For components. VECTO usage check (4 times/year)	Required
Verification testing procedure	Not required	Required	Not required
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe **	No: required	Optional
Emissions durability	Declaration **	No: required	Not required
Correct operation of systems using a consumable reagent and pollution control systems	Declaration **	No: required	Optional ***
Battery durability	Declaration	No: required	Required
Power determination	Required **	No: required	Not required

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
On-board diagnostics (OBD family level)	Declaration	Not required	Optional

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
On-board monitoring (OBM family level)	Demonstration + Declaration	Not required	Required

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
OBFCM (on-board measurement of fuel & electric consumption as well as payload)	Required	Required	Required
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required

* Supported by data of engine testing of all power ratings.

** In the case of a vehicle with an approved engine system with regard to emissions, the engine manufacturer is responsible for demonstrating compliance of the vehicle in this test (engine approved as a separate technical unit).

*** In the case of a vehicle with an approved engine system with regard to emissions, the engine manufacturer is responsible for demonstrating compliance of the vehicle in this test when agreed with the vehicle manufacturer in accordance with Article 9.

Table 4: Application of test requirements and declarations for type-approval and extensions for M_2, M_3, N_2 and N_3 vehicles for Member States and recognised third parties/Commission

Test requirements	**Tests and requirements for emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Gaseous pollutants, PN in road testing (RDE) for each fuel and for the applicable vehicle categories (M_2, M_3, N_2 and N_3)	Required demonstration tests for all fuels for which the type approval is granted per vehicle type and a declaration of compliance for all fuels, all payloads and all applicable vehicle categories **	(see engine requirements)	Required yearly for an adequate number of vehicle types on any fuel and on any vehicle category covered by the emission type approval ***	Optional	Required/Optional	Optional
Gaseous pollutants, PM and PN and CO_2 emissions, fuel consumption on transient cycle (WHTC and WHSC)	Required on the parent engine of the emission family and declaration for all family members* **	Required on an engine out of the family **	Not required	Not required	Not required	Not required
CO_2,emissions, fuel/electric energy consumption, zero-emissions/electric range determination of a vehicle	Issue VECTO licence; issue component certificates	For components	Not required	Not required	Optional	Optional

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity		Tests at market surveillance	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Verification testing procedure	Not required	Required	Optional	Optional	Optional	Optional
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe	Not required	Optional	Optional	Optional	Optional
Emissions durability	Declaration	Not required	Optional	Optional	Required	Optional
Correct operation of systems using a consumable reagent and pollution control systems	Not required	Not required	Required	Optional	Required	Optional
Battery durability	Declaration	Not required	Required	Optional	Optional	Optional
Power determination	Required **	Not required	Optional	Optional	Optional	Optional
On-board diagnostics (OBD family level)	Declaration	Not required	Optional	Optional	Required	Optional
On-board monitoring (OBM family level)	Declaration and demonstration	Not required	Required	Not required	Required	Optional
OBFCM (on-board measurement of fuel & electric consumption as well as payload)	Required	Required	Required	Optional	Optional	Optional
Anti-tampering, security and cybersecurity	Declaration and documentation**	Not required	Not required	Not required	Required	Optional

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity		Tests at market surveillance	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required	Not required	Required	Optional

** In the case of a vehicle with an approved engine system with regard to emissions, the engine manufacturer is responsible for demonstrating compliance of the vehicle in this test (engine approved as a separate technical unit).

*** In the case of a vehicle with an approved engine system with regard to emissions, the engine manufacturer is responsible for demonstrating compliance of the vehicle in this test when agreed with the vehicle manufacturer in accordance with Article 9.

Table 4a: Application of test requirements, declarations and other requirements for type-approval and extensions for O_3 and O_4 vehicles for manufacturers

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
Energy efficiency of trailers	Issue VECTO licence, issue component certificates	For components	Not required

Table 4b: Application of test requirements and declarations for type-approval and extensions for O_3 and O_4 vehicles for Member States and recognised third parties/Commission

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity		Tests at market surveillance	
Energy efficiency of trailers	Issue VECTO licence, issue component certificates	For components	Not required	Not required	Optional	Optional

Table 5: Application of test requirements and declarations for type-approval and extensions of engines intended for M_2, M_3, N_2 and N_3 vehicles for manufacturers

Test requirements for each fuel	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
Gaseous pollutants, PM and PN and CO_2 emissions, fuel consumption on transient cycle (WHTC Cold and Hot)	Required on the parent engine of the emission family and declaration for all family members**	Required on an engine out of the family	Performed only with the complete vehicle as in Tables 3 and 4
Gaseous pollutants, PN in road testing (RDE) for each fuel and for the applicable vehicle categories (M_2, M_3, N_2 and N_3)	Required demonstration tests for all fuels for which the type approval is granted per vehicle type and a declaration of compliance for all fuels, all payloads and all applicable vehicle categories	Not required	
Engine tests for verifying data required for CO_2 determination	Required	Required	
Continuous/periodic regeneration	Declaration	Not required	
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe	Not required	
Emissions Durability	Declaration	Not required	
Power determination	Required	Not required	
On-board diagnostics (OBD family level)	Declaration	Not required	
On-board monitoring (OBM family level)	Performed only with the complete vehicle as in Tables 3 and 4	Not required	
Anti-tampering, security and cybersecurity	Declaration and documentation*	Not required	

* Only if the engine manufacturer provides those systems together with the engine.

** Supported by data of engine testing of all power ratings.

Table 6: Application of test requirements and declarations for type-approval and extensions of engines intended for M_2, M_3, N_2 and N_3 vehicles for Member States and recognised third parties/Commission

Test requirements for each fuel	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in service conformity	Tests at market surveillance
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	-	-
Gaseous pollutants, PM and PN and CO_2 emissions, fuel consumption on transient cycle (WHTC Cold and Hot)	Required on the parent engine and a declaration for all family members**	Audit or optional testing	Performed only with the complete vehicle as in Tables 3 and 4	Performed only with the complete vehicle as in Tables 3 and 4
Engine tests for verifying data required for CO_2 determination	Required	Required		
Continuous/periodic regeneration	Declaration	Not required		
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe	Not required		
Emissions durability	Declaration	Not required		
Power determination	Required	Not required		
On-board diagnostics (OBD family level)	Declaration	Not required		
On-board monitoring (OBM family level)	Performed only with the complete vehicle as in Tables 3 and 4			
Engine power	Required	Not required		
Anti-tampering, security and cybersecurity	Declaration and documentation*	Not required		

* Only if the engine manufacturer provides those systems together with the engine.

** Supported by data of engine testing of all power ratings.

Table 7: Application of test requirements and declarations for type-approval of pollution control systems for manufacturers

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
Demonstration of performance and durability with aged parts	Required/Declaration	Not required	Optional
Durability requirement check in real life (RDE test with aged vehicles)	Declaration	Not required	Optional

Table 8: Application of test requirements and declarations for type-approval of pollution control systems for Member States and recognised third parties/Commission

Test requirements	**Tests and requirements for emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Demonstration of performance and durability with aged parts	Required	Optional	Optional	Optional	Optional	Optional
Durability requirement check in real life (RDE test with aged vehicles)	Declaration	Not required	Optional	Optional	Required	Optional

Table 9: Application of test requirements for type-approval of brake systems for manufacturers

Test requirements	Tests and requirements for emission type approval	Tests at conformity of production	Tests at in-service conformity
Brake system emissions test in WLTP brake cycle	Required	Required	Not required

Table 10: Application of test requirements for type-approval of brake systems for Member States and recognised third parties/Commission

Test requirements	**Tests and requirements for emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***Granting type approval authority***	***Granting type approval authority***	***Granting type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Brake system emissions test in WLTP brake cycle	Required	Audit or optional testing	Not required	Optional for verifying the share of friction braking during WLTP tests	Optional for verifying the share of friction braking during WLTP tests	Optional for verifying the share of friction braking during WLTP tests