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From:	Permanent Representatives Committee (Part 1)
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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) *General approach*

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 draft 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 ENVI draft report was published on 26 May 2023. The ENVI Committee has not yet voted on its final report.

II. WORK IN COUNCIL PREPARATORY BODIES

6. The examination of the proposal by the Working Party on Technical Harmonisation (Motor Vehicles) started on 21 November 2022 under the Czech Presidency. The impact assessment accompanying this proposal was presented and examined on 21 November and 19 December 2022 (respectively).

7. Six Working Party meetings were held during the Swedish Presidency. The Presidency drafted three compromise texts, which were examined on 22 March, 10 May and 12 June 2023 (respectively).

8. During the Spanish Presidency, two Working Party meetings took place on 11 and 12 July 2023, with the objective of reaching a broad agreement on pending issues. Since several of these issues proved to be divisive at Working Party level, the Working Party was seeking guidance for further work at the COREPER I meeting on 19 July 2023. Taking into account the outcome of this meeting and delegations' comments, the Presidency drafted two new compromise texts, discussed at Working Party level on 1 and 12 September 2023 (respectively).

9. Considering various views expressed on 12 September 2023 or in writing, the Presidency presented a very sensitive compromise text at the COREPER 1 meeting on 20 September 2023. At this meeting, delegations asked for some amendments to the Presidency compromise text. These new amendments were presented in a room document at the COREPER 1 meeting on 22 September 2023.

10. The Presidency considers that the compromise text set out in the Annex to this note reflects the efforts of the Presidency and Member States to strike a balance between the different positions expressed by delegations.

III. MAIN ELEMENTS OF THE COMPROMISE TEXT

a) Test conditions and emission limits for M_1 and N_1 vehicles

11. Test requirements for M_1 and N_1 vehicles were an important consideration in the discussions of the Working Party. Several delegations expressed reservations about the proposed provisions, which sought to regulate test conditions and some emission limits in a more stringent way. These delegations took the view that the relationship between investment costs and environmental benefits arising from the proposed provisions would be disproportionate.

To accommodate these concerns, the Presidency compromise text deletes the test conditions for M_1 and N_1 vehicles in Table 1 of Annex III, and it reverts to the Worldwide Harmonised Light Vehicle Test Procedure (WLTP) and Real Driving Emission (RDE) tests as defined in Euro 6e.

As regards exhaust emission limits for M_1 and N_1 vehicles with internal combustion engine in Table 1 of Annex I and evaporative emission limits for petrol fuelled M_1 and N_1 vehicles in Table 3 of Annex I, the new compromise text goes back to Euro 6. Limits for refuelling emissions in Table 3 of Annex I are deleted.

b) Test conditions and exhaust emission limits for M_2, M_3, N_2 and N_3 vehicles

12. The proposed provisions on test conditions and exhaust emission limits for M_2, M_3, N_2 and N_3 vehicles were of central importance for a number of delegations. They expressed concerns about significant development capacity and investment required on top of that already being put into electrification and overall benefits to be gained from the proposed approach.

To reflect these concerns, under the Presidency compromise text, Table 2 in Annex III is deleted. In essence, the Presidency compromise text reverts to Euro VI test conditions.

Concerning exhaust emissions from M_2, M_3, N_2 and N_3 vehicles with internal combustion engines and internal combustion engines used in these vehicles, the new compromise text removes the emission limit for formaldehyde (HCHO) from the proposed list of emission limits in Table 2 of Annex I. Compared to Euro VI, it contains more stringent limits for emissions measured in laboratory and on road than those laid down in Euro VI.

c) Brake particle emission limits and tyre abrasion rate limits

13. The European Union is a contracting party to the Agreement of the United Nations Economic Commission for Europe (UNECE) 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. Euro 7 should therefore be aligned with the UNECE regulations and amendments to UNECE regulations. Since the UNECE work on relevant test procedures related in particular to brake particle emissions and tyre abrasion emissions has not been completed yet, the Presidency compromise text clarifies in Article 15(2), how this alignment should be done.

This paragraph also contains a derogation to allow tyre abrasion rate limits to be set in case there is no proposal for a UNECE Regulation or an amendment to a UNECE Regulation on tyres of class C_1.

d) Reporting requirements

14. The Presidency compromise text introduces in Article 18 new provisions on reporting requirements for the durability performance of heavy duty vehicles with regard to emissions, tyre abrasion, battery durability and brake particle emissions.

e) On-board monitoring (OBM)

15. Delegations also discussed on-board monitoring (OBM) of emissions at all times and for the lifetime of a vehicle. Some delegations considered that this obligation should be deleted from the draft Regulation, arguing that i) this would require new sensors, which are either not available or have limited capability and lifetime, ii) Euro 6 already has in place successful measures to ensure vehicle compliance, such as on-board diagnostics (OBD) system, iii) on-board monitoring implies certain risks on the road to be seriously evaluated. Others took the view that the OBM deletion would undermine the environmental and health protection aim of the new Euro 7 Regulation. The Presidency has carefully taken into account the various views expressed and considers that the deletion could jeopardise the overall sensitive and delicate compromise that now underpins the text of the Regulation.

The Presidency compromise text includes a better definition of OBM and its functionalities, explicitly establishing that OBM may not be detrimental to road safety.

f) Adoption dates for specific implementing acts

16. A majority of delegations requested that dates be included in the draft Regulation to indicate when the Commission must adopt specific implementing acts. The Presidency compromise text clarifies, by adding new paragraphs 7 and 8 to Article 14, that implementing acts listed in the paragraph 7 for M_1, N_1 vehicles are to be adopted by 12 months after entry into force of the Regulation, and implementing acts listed in the paragraph 8 for M_2, N_2, M_3, N_3 vehicles and for O_3, O_4 trailers are to be adopted by 30 months after entry into force of the Regulation.

g) Retention of new "vehicle type" dates and "vehicle registration" dates

17. As requested by several delegations, the Presidency compromise text re-introduces a well-established practice of having one year difference between a new "vehicle type" date and "vehicle registration" date, by adding new paragraphs 3a and 4a to Article 10 and, accordingly, by amending paragraphs 4 and 5 of this Article.

h) Application dates of the new Regulation

18. In the discussion at Working Party level, many delegations considered deadlines of 1 July 2025 for M_1, N_1 vehicles and 1 July 2027 for M_2, M_3, N_2, N_3 vehicles and O_3, O_4 trailers, as proposed by the Commission, too ambitious and even unrealistic. The Presidency compromise text suggests new application dates, namely 30 months after entry into force of the Regulation for M_1, N_1 new types of vehicles, and 42 months after entry into force of the Regulation for M_1, N_1 new vehicles. For M_2, M_3, N_2, N_3 and O_3, O_4 categories, the new application dates are 48 months for new types, and 60 months for new vehicles and trailers.

In case of systems, components or separate technical units, 30 months has been established for new systems, components or separate technical units to be fitted on M_1, N_1 vehicles approved under the new Regulation, and 48 months for those new types to be fitted on M_2, M_3, N_2, N_3, O_3, O_4 vehicle approved under the new Regulation.

The new compromise text also introduces 48 months for new tyres of class C_1 and 72 months for new tyres of classes C_2 and C_3. Additional 30 months are allowed for being made available on the market and entering into service of tyres already placed on the market.

i) Alignment of the Euro 7 application dates with 2030 zero-CO_2 emission target for some M_2 and M_3 vehicles

19. In February 2023, the Commission proposed a revision of the Regulation on CO_2 emission standards for heavy-duty vehicles. Negotiations on this proposal are ongoing. If adopted, the proposal would introduce 2030 zero-CO_2 emission target for some M_2 and M_3 vehicles. To align this target with emission requirements and timelines for heavy-duty vehicles set out in the Presidency compromise text, a new paragraph 5a in Article 10 was introduced establishing an exception for some vehicles of categories M_2 and M_3. In line with this exception, they would be allowed to be placed on the market until 2030, if they have a valid Euro VI emission type-approval.

IV. CONCLUSION

20. In light of the above, the Council (Competitiveness) is invited, at its meting on 25 September 2023, to agree on a general approach regarding the text set out in the Annex to this note, and mandate the Presidency to enter into negotiations with the European Parliament with a view to achieving a first reading agreement.

ANNEX

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[2],

Having regard to the opinion of the Committee of the Regions[3],

Acting in accordance with the ordinary legislative procedure,

[2] OJ C , , p. .
[3] OJ C , , p. .

Whereas:

(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[4] 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.

(2) The technical requirements for the type-approval of motor vehicles, engines**, electric motors** 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.

(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, are fully applicable to this Regulation.**

(3a) ~~It~~ **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] 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).

(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') [5] and Regulation (EC) No 595/2009 of the European Parliament and of the Council ('Euro VI') [6]. ~~The reason for having two Regulations was that the emissions of heavy-duty vehicles were checked based on engine testing, while for light-duty vehicles the basis was whole vehicle testing. Since then, methodologies have been developed that allow testing of both light- and heavy-duty vehicles on the road. It is therefore no longer necessary to base type-approval on engine testing.~~

(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 for such vehicles.

(6) Furthermore, the current emission limits were adopted ~~in 2007 for light-duty vehicles and~~ for heavy-duty vehicles in 2009~~. Both emission limits were adopted~~ on the basis of the then 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.

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5 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).

6 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).

(7) ~~It is also necessary to reduce complexity, administrative and implementation costs for manufacturers and authorities and to ensure effective and efficient implementation of the Euro emission standards.~~ Simplification is achieved ~~by eliminating different application dates for the limits and tests which existed under Euro 6 and Euro VI,~~ by eliminating ~~multiple and complex emission~~ tests ~~where such tests~~ **which** are not needed, by referring to standards under existing UN Regulations where applicable, and by ensuring a ~~streamlined and~~ 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 with a minimum set of restrictions, boundaries and other driving requirements and not only in the laboratory is required.

~~(9) The accuracy of the portable emission measurement equipment used for measuring the emissions of vehicles used on the road has improved significantly since their introduction. It is therefore appropriate to base the emission limits on such on-road measurements and therefore on-road testing no longer requires the use of conformity factors.~~

(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.

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

(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 prepare a report on tyre abrasion by the end of 2024 to review the measurement methods and state-of-the-art in order to propose tyre abrasion limits **by December 2025 at the latest, should the work on tyre abrasion done at UN WP 29 be delayed.**

(13) Regulation (EU) 2019/2144 of the European Parliament and of the Council[7] 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.

[7] 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).

(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**, including state of range (SOCR) or state of energy (SOCE),** should therefore be required for all vehicles that use traction batteries. In addition minimum performance requirements for battery durability of passenger cars should be introduced, taking into account the UN Global Technical Regulation 22[8].

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

(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 force 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 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 **in a manner that has no detriment to road safety.**

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

(17) Manufacturers may opt to produce vehicles ~~which comply with lower emission limits or with better battery durability than what is required in this Regulation, or~~ which include advanced options ~~including~~ **such as** geofencing ~~and adaptive controls~~. Consumers and national authorities should be able to identify such vehicles through appropriate documentation. An environmental vehicle passport (EVP) should therefore be made available.

(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[9] and (EU) 2019/1242[10] 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 vehicle energy consumption calculation tool (VECTO) in order to take better into account, among other aspects, the energy efficiency of heavier vehicle combinations**.

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9 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).

10 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)

(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 ~~conformity~~ **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 ~~multistage~~ vehicles**, including multistage vehicles,** as well as procedures to determine ~~the~~ **their** CO_2 value ~~for these multistage vehicles~~; 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 ~~lab~~ **laboratory** and on the road~~, including random and worst-case RDE test cycles,~~ **and** the use of portable emissions measurement systems for verifying real driving emissions, ~~and idle 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) ~~criteria for~~ **methods to evaluate compliance with** emission type-approvals for small and ultra-small volume manufacturers; ~~(xiii) checks and test procedures for multistage vehicles;~~ (xiv) performance requirements for test equipment; (xv) specification of

reference fuels; and (xvi) methods for assessing the absence of ~~defeat~~ **manipulation** devices and ~~defeat~~ **manipulation** strategies; (xvii) to measure tyre abrasion, as well as (xviii) EVP format~~,~~ **and** 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[11]. **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 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 definitions and 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[12]. In particular, in order to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.

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11 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).

12 OJ L 123, 12.5.2016, p. 1.

(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. This Regulation should be aligned with the UNECE Regulations or amendments to UNECE Regulations, in particular regarding limits for brake particle emissions and abrasion limits for tyre types as well as minimum performance requirements of 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.

If by 31 December 2025 there is no proposal for a UNECE Regulation or an amendment to a UNECE Regulation, the Commission should adopt delegated acts, setting out abrasion limits for tyre types in line with the work performed in the GRBP/GRPE Task Force on Tyre Abrasion.

(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[13] and Regulation (EC) No 45/2001 of the European Parliament and of the Council[14], as well as the national implementing measures thereto.

(25) It is important to grant Member States, national ~~type-approval~~ authorities and economic operators enough time to prepare for the application of the new rules introduced by this Regulation. **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 possible, for heavy duty vehicles and trailers the date of application may be further delayed by two years, since the transition to zero-emission vehicles will be longer for heavy duty vehicles.

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13 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).

14 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).

(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 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 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 ~~initial~~ 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 excluding 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;

~~(2) ‘initial emission type approval’ or ‘IETA’ means the first phase of an emission type approval procedure before the emission type approval certificate is granted by the authorities and vehicles are put into production;~~

(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**, separate technical units or components** with the purpose of verifying the durability requirements set out in this Regulation;

(5) ‘engine’ means the ~~propulsion source~~ **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: CO2, 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 ~~of the motor vehicle or engine~~;

(10) 'nitrogen oxides' or 'NOx' means the sum of ~~the oxides of nitrogen~~ **NO and NO_2** emitted from the tailpipe;

(10a) 'nitrous oxide' or 'N_2O' means the emission of dinitrogen monoxide 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~~ **an aerodynamic** 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~~ **an aerodynamic** diameter larger or equal than 10 nm;

(14a) 'particle number above 23 nm' or 'PN_{23}' means the total number of solid particles emitted from the tailpipe or the brakes that have an aerodynamic diameter larger or equal than 23 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 ~~'NHMC'~~ **'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’ means the consumption of electric energy from each and all propulsion sources within a vehicle;

(23b) ‘fuel consumption’ means the consumption of fuel from each and all propulsion sources within a vehicle;

(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; ~~‘energy consumption’ means the consumption of electric energy from each and all propulsion sources within a vehicle;~~

~~(25) ‘fuel consumption’ means the consumption of fuel from each and all propulsion sources within a vehicle;~~

(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;

~~(36) ‘adaptive control function’ means a system that adjusts engine, pollution control systems or other vehicle parameters with the purpose to improve fuel or energy consumption and the effectiveness of the pollution control system based on the expected usage of the vehicle;~~

(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 ~~via the OBD port and over the air~~ **off-board**;

(38) ‘on-board monitoring system’ or ‘OBM’ means a system on board a vehicle that is capable of **monitoring exhaust emmissions** detecting ~~either~~ **both exhaust** emission exceedances ~~or~~ **and** when a vehicle is in zero emission mode ~~if applicable~~, and capable of ~~indicating the occurrence of such exceedances by means of information stored in the vehicle, and of~~ communicating that information ~~via the OBD port and over the air~~ **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) ‘~~defeat~~ **manipulation** device’ means any ~~software or hardware that senses temperature, vehicle speed, engine speed, transmission gear, manifold vacuum or any other parameter to activate, modulate, delay or deactivate the operation of any part of the pollution control system, with the purpose of reducing the effectiveness of the pollution control system when the vehicle is driven~~ **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) ‘~~defeat~~ **manipulation** strategy’ means a strategy that ~~reduces the effectiveness of the pollution controls under ambient or engine operating conditions encountered either during vehicle operation or outside the type-approval test procedures or falsifies~~ **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 **its** normal ~~driving~~ conditions **of use** ~~and extended conditions as 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 ~~by the economic operators or independent operators,~~ of the engine **or electric motor**, vehicle pollution control device**s** 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, unless required by this Regulation or Regulation (EU) 2018/858**;

(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 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 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_1 or fewer than 1 000 new motor vehicles of category N_1 registered 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;

(62) ‘power-to-mass-ratio’ means the ratio of rated power to the **maximum** mass ~~in running order~~;

(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~~ **as defined in accordance with Regulation (EU) 2019/2144**;

(64a) ‘maximum mass’ means the technically permissible maximum laden mass as defined in accordance with Regulation (EU) 2019/2144;

(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 ~~zero-emission~~ vehicle can travel **with zero exhaust emissions** ~~until the traction battery or fuel tank is depleted~~, 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 the durability of ~~a~~ **an in-vehicle** 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;

(70a) ‘state of certified energy’ or ‘SOCE’ means the measured or on-board usable battery energy performance at a specific point in its lifetime, expressed as a percentage of the certified energy;

(70b) ‘state of certified range’ or ‘SOCR’ means the measured or on-board electric range at a specific point in its lifetime, expressed as a percentage of the certified range;

(71) ‘environmental vehicle passport’ or ‘EVP’ means a record on ~~paper and~~ 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 ~~enforce~~ **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 ~~enforce~~ **ensure** the use of the reagent;

~~(74) ‘idle emissions’ means exhaust emissions produced when the internal combustion engine operates but is not under load for the purposes of propelling the vehicle;~~

(75) ‘declaration of ~~conformity~~ **compliance’ or ‘declaration’** means a declaration by the manufacturer that a specific type or group of vehicles, component or separate technical unit is in ~~conformity~~ **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 ~~structure~~ **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 ~~or~~ **and** ~~maintain~~ **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. 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. 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 Annex III.~~

~~The emissions during regeneration of pollution control systems will be included as a weighted average based on the frequency and duration of the regeneration events.~~

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 conditions set out in Annex III**.

5. Manufacturers shall not design, construct and assemble vehicles with ~~defeat~~ **manipulation** devices or ~~defeat~~ **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 capable of detecting malfunctioning systems which lead to **exhaust** emission exceedances in order to facilitate repairs;

   (b) OBM systems capable of ~~detecting~~ **monitoring exhaust** emissions ~~above the emission limites due to malfunctions, increased degradation or other situations that increase emissions~~;

(c) OBFCM device to monitor their real-world fuel and **electric** energy consumption and other relevant parameters ~~such as payload/mass~~ which are needed to determine their real-world fuel and energy efficiency;

(d) SOH monitors of the traction battery ~~and emission systems~~;

(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 ~~over the air~~, 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_3 in 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,

(d) odometer ~~and~~**,**

(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 **by his knowledge and state of the art at the time of type-approval**. When such a vulnerability is found, the manufacturer shall ~~remove~~ **handle** the vulnerability **effectively, if technically feasible at the time where the vulnerability is found**, by software update or any other appropriate means.

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[15].

~~10. The Commission shall adopt, by means of implementing acts, detailed rules on the procedures, tests and methodologies to verify compliance with the requirements laid down in paragraphs 1 to 9. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).~~

[15] 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

~~1. Manufacturers may designate the vehicles they manufacture as "Euro 7+ vehicle" where those vehicles comply with the following:~~

~~(a) for ICEV and NOVC-HEV by declaring compliance with at least 20 % lower emission limits than those set out in Annex I for gaseous pollutants and one order of magnitude lower emission limits for particle number emissions;~~

~~(b) for OVC-HEV by declaring compliance with at least 20 % lower emission limits than those set out in Annex I for gaseous pollutants, one order of magnitude lower emission limits for particle number emissions and battery durability that is at least 10 percentage points higher than the requirements set out in Annex II;~~

~~(c) for PEV by declaring battery durability that is at least 10 percentage points higher than the requirements set out in Annex II.~~

~~2. Compliance of these vehicles with the requirements under paragraph 1 shall be checked against the declared values.~~

~~3. Manufacturers may designate vehicles as "Euro 7A vehicle" where those vehicles are equipped with adaptive control functions. The use of adaptive control functions shall be demonstrated to the type-approval authorities during type-approval and verified during the lifetime of the vehicle as set out in table 1, Annex IV.~~

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. The application of such geofencing technologies ~~may~~ **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 N_2 vehicles between 3.5 and 5 tonnes maximum mass originating from an N_1 vehicle type, the approval authority may grant an emission type-approval for an N_1 vehicle type. Such vehicles shall be designated as "Euro 7ext vehicle".

5. Manufacturers may construct vehicles combining ~~two or more of~~ the characteristics referred to in paragraphs ~~1, 2 or 3~~ **4 or 4a** and designate them ~~using a combination of symbols and letters such as "Euro 7+A", "Euro 7+G", "Euro 7+AG" or "Euro 7AG"~~ **as "Euro 7Gext"** vehicles.

~~6. At the manufacturer'sArticle type, the type-approval authority may grant an emission type-approval for N_1 vehicle type. Such vehicles shall be designated as "Euro 7ext vehicle".~~

~~7. The Commission shall adopt, by means of implementing acts, detailed rules on the procedures, tests and methodologies to verify compliance with the requirements laid down in paragraphs 1 to 6. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).~~

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 ~~the normal and extended driving~~ 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~~, Table 1~~.

3. Manufacturers shall ~~ensure~~ **design** ~~that~~ OBFCM, OBD ~~and~~**,** OBM devices and anti-tampering measures ~~installed in these vehicles~~**, so that they** comply with the provisions of this Regulation as long as the vehicle is in use.

4. The requirements referred to in ~~points~~ **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 all of the following:

   (a) **monitoring and** registering ~~the magnitude and duration of~~ all **exhaust** emission**s** ~~exceedances~~ **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 of the vehicle~~, including pollutant sensor and exhaust flow data,~~ via the OBD port ~~and over the air~~, including for the purpose of roadworthiness tests[16] and technical roadside inspections[17]~~,~~ ~~[18],~~ **and anonymously over the air for the purpose of monitoring compliance of vehicle types**;

(c) triggering ~~repair of the vehicle when~~ the driver warning system ~~notifies significantly excess emissions~~ **when exhaust emissions are significantly exceeded, using harmonised methods to induce timely repairs within 2 000 km, without preventing vehicles from completing an ongoing trip to avoid road safety issues.**

7. The OBFCM**, OBD and OBM** devices installed by the manufacturer in these vehicles shall be capable of communicating the **relevant** vehicle data they record via the OBD port and over the air.

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16 **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).**

17 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).

~~18 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)~~

8. ~~For~~ **Where a** vehicle~~s~~, system~~s~~, component~~s~~ ~~and~~ **or** separate technical unit~~s~~ ~~presenting~~ **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 ~~withdraw it from the market or recall it, as appropriate~~ **apply Regulation (EU) 2018/858 accordingly**. The manufacturer shall immediately inform the ~~type~~ approval authority that granted the type-approval of the non-conformity with appropriate details.

~~9. The Commission shall adopt, by means of implementing acts, detailed rules on requirements, tests, methods and corrective measures related to the obligations referred to in paragraphs 1 to 8. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).~~

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 ~~type~~ 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 ~~type~~ approval authority with a signed declaration of ~~conformity~~ **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 ~~type-~~approval authority a signed declaration of ~~conformity~~ **compliance** on the use of ~~adaptive controls and~~ geofencing option~~s~~ when the manufacturer selects ~~these options~~ **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.

~~5. The Commission shall adopt implementing acts laying down the testing and compliance verifications as well as procedures, related to emission type-approval, conformity of production, in-service conformity, declaration of conformity and EVP under paragraphs 1to 4. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).~~

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 ~~conformity~~ **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~~(4)~~**(6)** point**s** (b) **and (c)** shall not apply to small volume manufacturers.

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

Article 9

Special rules for multistage vehicles

1. In multistage type-approvals, manufacturers of the second or subsequent stages shall be responsible for the emission type-approval where they modify any part of the vehicle that, according to the data provided by the manufacturers of the previous stage, might affect emissions or battery durability.

2. The Commission shall adopt implementing acts laying down the administrative requirements and data to be provided by manufacturers of the previous stage in accordance with paragraph 1 and procedures for the determination of CO_2 emissions of such vehicles. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

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. ~~National a~~**A**pproval 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. ~~National m~~**M**arket 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 ~~national~~ 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 CO_2 and pollutant emissions, fuel and electric energy consumption or battery durability, in the case of new types of M_1, N_1 vehicles, refuse to grant EU emission type-approval or national emission type-approval which do not comply with this Regulation.

4. With effect from ~~1 July 2025~~ **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 CO_2 and pollutant emissions, fuel and electric energy consumption or battery durability, in the case of new types of M_2, M_3, N_2, N_3 vehicles and new types of O_3, O_4 trailers, refuse to grant EU emission type-approval or national emission type-approval which do not comply with this Regulation.

5. With effect from ~~1 July 2027~~ **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 M_2 and M_3 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.

8. The Commission shall adopt implementing acts laying down the administrative and technical elements required for performing tests, checks and inspections for the purposes of verifying compliance with paragraph 1, as well as the technical elements required for market surveillance checks under paragraph 2. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 11

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

1. With effect from 1 July 2025 **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 of type approved in compliance with this Regulation.

2. With effect from ~~1 July 2027~~ **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. ~~National a~~**A**pproval 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 ~~initial~~ **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.

~~4.~~ With effect from 48 months after entry into force of this Regulation, national authorities shall, for new tyres of class C_1, on grounds relating to tyre abrasion, prohibit the placing on the market or entry into service of tyres, where they do not comply with the requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it. Therefore, from that date national authorities shall prohibit the registration of new vehicles equipped with tyres of class C_1 if the tyres are not compliant with this Regulation.

5. With effect from 72 months after entry into force of this Regulation, national authorities shall, for new tyres of class C_2 and C_3, on grounds relating to tyre abrasion, prohibit the placing on the market or entry into service of tyres, where they do not comply with the requirements of this Regulation and of the delegated acts and implementing acts adopted pursuant to it. Therefore, from that date national authorities shall prohibit the registration of new vehicles and trailers equipped with tyres of class C_2 and C_3 if the tyres are not compliant with this Regulation.

6. In derogation from paragraphs 4 and 5 above, tyres of class C_1, C_2 and C_3 placed on the Union market before the dates mentioned, may continue to be made available on the market and entered into service during 30 months. This paragraph shall not apply to the the registration of new vehicles and trailers according to paragraphs 4 and 5 of this Article.

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. The Commission or third parties, in accordance with Article 9 and 13(10) of Regulation (EU) 2018/858, may perform in-service conformity and market surveillance checks set out in Tables 2, 4, 6, 8, and 10 of Annex V, 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 ~~as specified in Annex V~~. For the requirements specified in Annex V, where applicable the manufacturer shall provide a declaration of ~~conformity~~ **compliance** to the ~~type-~~approval authority.

2. Tests to prove compliance with the requirements of ~~Article 4~~ **this Regulation** shall be applied by manufacturers and national authorities as specified in Annex V. Tests to prove compliance with the requirements of ~~Article 4~~ **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 ~~for all the phases of emission type-approval, including conformity of production, in-service conformity and market surveillance, addressing~~ **to set out** procedures and ~~tests for emission type-approval,~~ 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;

(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) tyre**s** ~~types~~ **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 ~~engine~~ 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 ~~engine~~ 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 ~~be empowered to~~ adopt implementing acts for ~~all phases of~~ the emission type-approval, ~~including~~ in-service conformity, conformity of production and market surveillance, to lay down the following:

(a) the methods to measure exhaust emissions in the ~~lab~~ **laboratory** and on the road **as per usual use for real world driving**~~, including random and worst-case RDE test cycles,~~ **and** the use of portable emissions measurement systems for verifying real driving emissions~~, and idle emissions~~;

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

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

(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 HDV, real driving brake particle emissions and regenerative braking;

(h) the methods to measure tyre abrasion ~~in order to monitor tyre abrasion rates~~;

(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**~~, including compliance thresholds, performance requirements and tests, methods to ensure performance of sensors~~ and ~~over the air~~ **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 criteria for emission type-approvals and implementation of special rules for~~ **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 ~~defeat~~ **manipulation** devices and ~~defeat~~ **manipulation** strategies;

~~(t) methods to measure tyre abrasion;~~

(u) format and data ~~and over the air communication methods~~ for the EVP;

(v) administrative requirements and documentation for emission type-approval;

(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).

9. 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).

~~Those implementing acts 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 ~~the following~~ **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~~, based on technical progress~~;

   (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 definitions and 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.

2. **Where a proposal for a UNECE Regulation or an amendment to a UNECE Regulation has been approved in accordance with the procedure set out in Article 218(9) TFEU and Decision 97/836/EC, and on the basis of work conducted under the auspices of the UN World Forum for Harmonisation of Vehicle Regulations (WP.29),** ~~T~~**t**he Commission shall ~~be empowered to~~ adopt delegated acts ~~to supplement this Regulation~~ in accordance with Article 16 ~~in order to take into account technical progress by~~**, amending this Regulation as follows**:

(a) setting out brake particle emission limits in **Tables 4 and 5 of** Annex I **in line with ~~that~~ proposal** ~~referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29)~~ **resulting from the completion of the work in the Task Force on Brake Emissions**;

(b) setting out abrasion limits for tyre types in **Table 6 of** Annex I **in line with that proposal** ~~referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29)~~ **resulting from the completion of the work on tyre abrasion in the common GRBP/GRPE Task Force on Tyre Abrasion**.

In derogation from the first subparagraph of this paragraph, if by 31 December 2025 there is no proposal to WP.29 for a UNECE Regulation or an amendment to a UNECE Regulation on tyres of class C_1, the Commission shall adopt delegated acts in accordance with Article 16, amending this Regulation, setting out abrasion limits for tyres of class C_1 in Table 6 of Annex I in line with the work performed in the GRBP/GRPE Task Force on Tyre Abrasion;

(c) setting out the minimum performance requirements of batteries laid down in Annex II **in line with that proposal** ~~referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29)~~ **resulting from the completion of the work on battery durability in the Informal Working Group on Electric Vehicles and the Environment**~~;~~**.**

~~(d) setting out durability multipliers in Annex IV based on data collected when testing Euro 7 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;~~

~~(e) setting out definitions and 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.~~

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.

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

Article 18

Reporting

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.

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. By 31 December 2024, the Commission shall submit to the European Parliament and to the Council a report on tyre abrasion reviewing measurement methods and state-of-the-art, as a basis for the proposal on tyre abrasion limits for tyres of class C_1.

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.

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 Table 5 of Annex I.

Chapter VI- 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 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 [EURO 7 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 ~~of Regulation (EC) 715/2007 and Regulation (EC) 595/2009~~

1. Regulation (EC) 715/2007 is repealed with effect from 1 July ~~2025~~ **2030**.

Regulation (EC) 595/2009 is repealed with effect from 1 July ~~2027~~ **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 ~~1 July 2025~~ **30 months after entry into force of this Regulation** for M_1, N_1 vehicles and components and separate technical units for those vehicles and from ~~1 July 2027~~ **48 months after entry into force of this Regulation** for 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 48 months after entry into force of this Regulation for new tyres of class C_1 and from 72 months after entry into force of this Regulation for new tyres of classes C_2 and C_3.

It shall apply 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**.

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

~~Pollutant emissions~~	~~M_1, N_1 vehicles~~	~~Only for N_1 vehicles with power to mass ratio[19] less than 35 kW/t~~	~~Emission budget for all trips less than 10 km for M_1, N_1 vehicles~~	~~Emission budget for all trips less than 10 km only for N_1 vehicles with power to mass ratio less than 35 kW/t~~
	~~*per km*~~	~~*per km*~~	~~*per trip*~~	~~*per trip*~~
~~NO_x in mg~~	~~60~~	~~75~~	~~600~~	~~750~~
~~PM in mg~~	~~4.5~~	~~4.5~~	~~45~~	~~45~~
~~PN_{10} in #~~	~~6×10^{11}~~	~~6×10^{11}~~	~~6×10^{12}~~	~~6×10^{12}~~
~~CO in mg~~	~~500~~	~~630~~	~~5000~~	~~6300~~
~~THC in mg~~	~~100~~	~~130~~	~~1000~~	~~1300~~
~~NMHC in mg~~	~~68~~	~~90~~	~~680~~	~~900~~
~~NH_3 in mg~~	~~20~~	~~20~~	~~200~~	~~200~~

~~[19] Measured in accordance with paragraph 5.3.2. of UN/ECE Regulation No 85 in the case of ICEVs and PEVs, or, in all other cases, measured in accordance with one of the test procedures laid down in paragraph 6 of UN Global Technical Regulation 21~~

		Mass in running order (MRO) (kg)	Mass of carbon monoxide (CO)		Mass of total hydrocarbons (THC)		Mass of non-methane hydrocarbons (NMHC)		Mass of oxides of nitrogen (NOx)		Combined mass of total hydrocarb ns and oxides of nitrogen (THC + NOx)		Mass of particulate matter (PM)		Number of particles (PN_{23})	
			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[20]**	**CI**	**PI[20]**	**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	$6x10^{11}$	$6x10^{11}$

[20] **Positive ignition particulate mass and number limits shall apply only to vehicles with direct injection engines.**

Key: PI = Positive Ignition, CI = Compression Ignition

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)	~~Cold emissions[21]~~	~~Hot emissions[22]~~	~~Emission budget for all trips less than 3*WHTC long~~	Real Driving Emissions (RDE)	~~Optional idle emission limits[23]~~
	per kWh	~~*per kWh*~~	~~*per kWh*~~	~~*per kWh*~~	*per kWh*	~~*per hour*~~
NO_x in mg	***230***	~~350~~	~~90~~	~~150~~	***300***	~~**5000**~~
PM in mg	***8***	~~12~~	~~8~~	~~10~~	**-**	
$PN_{~~10~~\ 23}$ in #	***6 x 10^{11}***	~~$5x10^{11}$~~	~~$2x10^{11}$~~	~~$3x10^{11}$~~	***9 x 10^{11}***	
CO in mg	***1500***	~~3500~~	~~200~~	~~2700~~	***1950***	
NMOG in mg	***80***	~~200~~	~~50~~	~~75~~	***105***	
NH_3 in mg	***65***	~~65~~	~~65~~	~~70~~	***85***	
CH_4 in mg	***500***	~~500~~	~~350~~	~~500~~	***650***	
N_2O in mg	***200***	~~160~~	~~100~~	~~140~~	***260***	
~~**HCHO in mg**~~	~~**30**~~	~~**30**~~	~~**30**~~		~~*40*~~	

~~[21] Cold emissions refers to the 100th percentile of moving windows (MW) of 1 WHTC for vehicles, or $WHTC_{cold}$ for engines~~

~~[22] Hot emission refers to the 90th percentile of moving windows (MW) of 1 WHTC for vehicles or $WHTC_{hot}$ for engines~~

~~[23] Applicable only if a system is not present that automatically shuts down the engine after 300 seconds of continuous idling operation (once the vehicle is stopped and brakes applied).~~

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

~~**Pollutant emissions**~~	~~**M_1, N_1 with maximum mass up to less than 2650 kg**~~	~~**N_1 with maximum mass equal or more than 2650 kg**~~
~~**Evaporative emissions (in hot soak + 2 day diurnal test)**~~	~~0.50 g at worst day + hot soak~~	~~0.70 g at worst day + hot soak~~
~~**Refuelling emissions**~~	~~0.05 g/L of fuel~~	~~0.05 g/L of fuel~~

Mass of evaporative emmission (g/test)
2.0

Table 4: Euro 7 brake particle emission limits in standard driving cycle applying until 31/12/2034

Emission limits ~~in mg/km per vehicle~~	**M_1, N_1 vehicles**	**M_2, M_3 vehicles**	**N_2, N_3 vehicles**
Brake particle emissions (PM_{10})	7 **mg/km per vehicle**		
Brake particle emissions (PN)			

Table 5: Euro 7 brake particle emission limits in applying from 1/1/2035

Brake particle ~~E~~emission limits ~~in mg/km per vehicle~~	**M_1, N_1 vehicles**	**M_2, M_3 vehicles**	**N_2, N_3 vehicles**
Brake particle emissions (PM_{10})	3 **mg/km per vehicle**		
Brake particle emissions (PN)			

Table 6: Euro 7 tyre abrasion rate limits

Tyre ~~mass lost~~ abrasion rate limits ~~in g/1000 km~~	**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%	70%	
PEV	80%	70%	

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			

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%	65%	
PEV	75%	65%	

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			

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

Parameter	Normal driving conditions	Extended driving conditions*
Extended driving divider	-	1.6 (applies to measured emissions only during the time when one of the conditions set out in this column applies)
Ambient temperature	0°C to 35°C	-10 C to 0°C or 35°C to 45°C
Maximum altitude	700 m	More than 700 m and below 1 800 m
Maximum speed	Up to 145 km/h	Between 145 and 160 km/h
Towing/aerodynamic modifications	Not allowed	Allowed according to manufacturer specifications and up to the regulated speed.
Auxiliaries	Possible as per normal use	-
Maximum average wheel power during first 2 km after cold start	Lower than 20% of maximum wheel power	Higher than 20% of maximum wheel power
Trip composition	Any	-
Minimum mileage	10 000 km	Between 3 000 and 10 000 km -

* The same emission strategy shall be used when a vehicle is run outside those conditions, unless there is a technical reason approved by the type approval authority.

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[24] 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[25] shall apply, with emissions evaluation fulfilled with respect to the 4-phase WLTP.**

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

~~Parameter~~	~~Normal driving conditions~~	~~Extended driving conditions*~~
~~Extended Driving Divider~~	~~-~~	~~2 (applies to measured emissions only during the time when one of the conditions set out in this column applies)~~
~~Ambient temperature~~	~~-7°C to 35°C~~	~~-10°C to 7°C or 35 °C to 45°C~~
~~Maximum altitude~~	~~1 600~~	~~From 1600 to 1 800 m~~
~~Towing/aerodynamic modifications~~	~~Not allowed~~	~~Allowed according to manufacturer specifications and up to the regulated speed~~
~~Vehicle Payload~~	~~Higher or equal than 10%~~	~~Less than 10%~~ -
~~Auxiliaries~~	~~Possible as per normal use~~	~~-~~

[24] 02 series of amendments (OJ L 290, 10.11.2022, p. 1).

[25] Original version of Regulation (OJ, …).

~~Internal Combustion Engine Loading at cold start~~	~~Any~~	-
~~Trip composition~~	~~As per usual use~~	-
~~Minimum mileage~~	~~5 000 km for <16t TPMLM~~ ~~10 000 km for > 16t TPMLM~~	~~Between 3 000 km and 5 000 km for <16t TPMLM~~ ~~Between 3 000 km and 10 000 km for > 16t TPMLM~~

* ~~The same emission strategy shall be used when a vehicle is run outside those conditions, unless there is a technical reason approved by the type approval authority.~~

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[26], Annex 4 shall apply.	**The provisions of UN Regulation No 49[27], Annex 8 shall apply with the following exceptions of:** • **the power threshold in Table 1 of Annex III is 0%. For windows where power is below 6%, 6% shall be used for calculations;** • **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.**

[26] 07 series of amendments (OJ L 14, 16.1.2023, p. 1).
[27] 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	~~• Baking of entire vehicle or of individual components (optional)~~ ~~• Vehicle canister preconditioning and fuel refilling and vehicle precondition drive~~ ~~• Drive temperature and hot soak test 25 and 38°C (38 °C for type approval)~~ • ~~48 h diurnal test~~ **Provisions of UN Regulation No 154, Level 1A (4-phase WLTP) shall apply.[29]**
~~Refuelling emission test~~	~~Vehicle preconditioning~~ ~~• Fuel drain and fill to 40%~~ ~~• 6 h min soak at 20-30°C~~ ~~• preconditioning drive~~ ~~Canister preconditioning~~ ~~• Fuel drain and fill to 40%~~ ~~• 12-36 h soak~~ ~~• Load canister with hydrocarbon vapours until 2g breakthrough at 40 g/h 50% butane/N2~~ ~~• Exhaust test: WLTP (recording emissions)~~ ~~• 0-1 h soak at 20-30°C~~ ~~• Canister purge drive at 20-30°C~~ ~~Refuelling event~~ ~~• Disconnect canister(s)~~ ~~• Fuel drain and fill to 10%~~ ~~• 6-24h soak at 27°C.~~ ~~• Reconnect canisters~~ ~~• Dispense fuel at 38 l/min until automatic shut-off. If < 85% of total tank capacity is dispensed, continue auto-refuelling until~~

[28] SHED: Sealed ~~House~~ **housing** ~~for~~ evaporative **determination.**

[29] **02 series of amendments (OJ L 290, 10.11.2022, p. 1).**

	~~fuel dispensed is ≥ 85%. Authorities may use 15 l/min~~ ~~• Dispense fuel temperature:19°C~~

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

	~~**M_1, N_1 vehicles**~~ **C1 tyres**	~~**M_2, M_3, N_2 and N_3 vehicles**~~ **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<16t, M_3<7.5t:**	**N_3>16t, M_3>7.5t**
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**

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<16t, M_3<7.5t:**	**N_3>16t, M_3>7.5t**
Durability multiplier for additional lifetime	1.2 for gaseous pollutant emissions		

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 ~~at initial~~ **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[30]
~~Gaseous pollutants, PM and PN in RDE cycles in the laboratory and CO_2 emissions, fuel consumption (OBFCM), electric energy consumption and electric range (Battery Durability) (WLTP at 23 °C)~~	~~Required where all pollutants cannot be measured on the road~~	Required	~~Required where all pollutants cannot be measured on the road~~
Gaseous pollutants, CO_2 emissions, fuel consumption (OBFCM), electric energy consumption and electric range (Battery Durability) and pollutants (WLTP at 23 °C)	**Required**	**Required for exhaust emissions**	**Required for exhaust emissions and SOH monitors of battery durability**
CO_2 ambient temperature correction (WLTP at 14°C)	Declaration[28]	Not required	Optional[28]

[30] The ~~type~~ approval authority may request the test to be performed.

Test requirements	Tests and requirements ~~at initial~~ <u>for</u> emission type approval	Tests at conformity of production	Tests at in-service conformity
Crankcase emissions	Declaration that a closed crankcase system or routing to the tailpipe is installed[28]	Required	Optional[28]

Test requirements	Tests and requirements ~~at initial~~ for emission type approval	Tests at conformity of production	Tests at in-service conformity
Evaporative emissions SHED test	Required	Required	Optional[28]
~~Refuelling emissions~~	~~Required~~	~~Not required~~	~~Not required~~
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	Not required
Laboratory test of low temperature for emissions and range	Required	Not required	Optional[28]
On-board diagnostics	Declaration	Not required	Optional[28]
On-board monitoring	Declaration and demonstration	Not required	Required
~~Engine p~~**P**ower **determination**	Required	Not required	Optional[28]
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required
~~Adaptive controls (where applicable)~~	~~Declaration and demonstration~~	~~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 ~~at initial~~ <u>for</u> emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance)**	
Relevant actor	***<u>Granting</u> ~~T~~type approval authority ~~for issuing the type approval~~***	***<u>Granting</u> ~~T~~type approval authority***	***<u>Granting</u> ~~T~~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 for 5% of the vehicle types approved per year	Optional	Required	Optional
~~Gaseous pollutants, PM and PN in RDE cycles in the laboratory and~~ CO_2 emissions, fuel consumption (OBFCM), electric energy consumption ~~and~~**<u>,</u>**	Required	Audits or optional testing	Optional **<u>for exhaust emissions, required for SOH monitors of batery durability</u>**	Optional	Optional	Optional

Test requirements	**Tests and requirements ~~at initial~~ <u>for</u> emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance)**	
Relevant actor	***<u>Granting</u> ~~T~~type approval authority ~~for issuing the type approval~~***	***<u>Granting</u> ~~T~~type approval authority***	***<u>Granting</u> ~~T~~type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
electric range (Battery Durability) **<u>and gaseous pollutants, PM and PN (WLTP at 23 °C)</u>**						
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
Evaporative emissions SHED test	Required	Audits or optional testing	Optional	Optional	Required	Optional
~~Refuelling emissions~~	~~Required~~	~~Not required~~	~~Optional~~	~~Optional~~	~~Required~~	~~Optional~~
Emissions durability	Declaration	Not required	Required	Optional	Required	Optional
<u>Correct operation of</u>	**<u>Not required</u>**	**<u>Not required</u>**	**<u>Required</u>**	**<u>Optional</u>**	**<u>Required</u>**	**<u>Optional</u>**

Test requirements	Tests and requirements ~~at initial~~ **for** emission type approval	Tests at conformity of production	Tests at in-service conformity		Tests at market surveillance)	
Relevant actor	***Granting ~~T~~type approval authority ~~for issuing the type approval~~***	***Granting ~~T~~type approval authority***	***Granting ~~T~~type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
systems using a consumable reagent and pollution control systems						
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 ~~at initial~~ <u>for</u> emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance)**	
Relevant actor	***<u>Granting</u> ~~T~~type approval authority ~~for issuing the type approval~~***	***<u>Granting</u> ~~T~~type approval authority***	***<u>Granting</u> ~~T~~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
~~Engine p~~**<u>P</u>**ower **<u>determination</u>**	Required	Not required	Optional	Optional	Optional	Optional
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required	Not required	Required	Optional
~~Adaptive controls (where applicable)~~	~~Declaration~~	~~Not required~~	~~Not required~~	~~Not required~~	~~Optional~~	~~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 ~~at initial~~ 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** **	
Gaseous pollutants, ~~PM and~~ PN in road testing (RDE) for each fuel and for the applicable vehicle categories (M_2, M_3, N_2 and N_3) ~~and low load test (if applicable)~~	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 ~~types~~ **categories** **	~~Conformity of production performed at engine level only~~ **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 **
Energy efficiency of trailers	VECTO licence	For components	Not required
Verification testing procedure	Not required	Required	Not required
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe **	Not required	Optional[28]
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	Not required

Test requirements	Tests and requirements ~~at initial~~ **for** emission type approval	Tests at conformity of production	Tests at in-service conformity
Power determination	**Required** ******	**Not required**	**Not required**
On-board diagnostics (OBD family level)	Declaration	Not required	Optional[28]

Test requirements	Tests and requirements ~~at initial~~ 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
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required
~~Adaptive controls (where applicable)~~	~~Declaration~~	~~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 to perform this test.**

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 ~~at initial~~ <u>for</u> emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***<u>Granting</u> ~~T~~type approval authority ~~for issuing the type approval~~***	***<u>Granting</u> ~~T~~type approval authority***	***<u>Granting</u> ~~T~~type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Gaseous pollutants, ~~PM and~~ PN in road testing (RDE) for each fuel and for the applicable vehicle categories (M_2, M_3, N_2 and N_3) ~~+ low load test (if applicable)~~	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 ~~types~~ **<u>categories</u>** **<u>**</u>**	(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 **<u>**</u>**	Optional	Required/Optional	Optional
CO_2, emissions, fuel/**<u>electric</u>** energy consumption, zero-emissions/electric range determination of a vehicle	Issue VECTO licence	For components	Not required	Not required	Optional	Optional
Energy efficiency of trailers	Issue VECTO licence	For components	Not required	Not required	Optional	Optional

Test requirements	**Tests and requirements ~~at initial~~ <u>for</u> emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***<u>Granting</u> ~~T~~type approval authority ~~for issuing the type approval~~***	***<u>Granting</u> ~~T~~type approval authority***	***<u>Granting</u> ~~T~~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
<u>Correct operation of systems using a consumable reagent and pollution control systems</u>	**<u>Not required</u>**	**<u>Not required</u>**	**<u>Required</u>**	**<u>Optional</u>**	**<u>Required</u>**	**<u>Optional</u>**
Battery durability	Declaration	Not required	Optional	Optional	Optional	Optional
<u>Power determination</u>	Required **<u>**</u>**	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	~~Not required~~ **<u>Required</u>**	Not required	Required	Optional

Test requirements	Tests and requirements ~~at initial~~ <u>for</u> emission type approval	Tests at conformity of production	Tests at in-service conformity		Tests at market surveillance	
Relevant actor	***<u>Granting</u> ~~T~~type approval authority ~~for issuing the type approval~~***	***<u>Granting</u> ~~T~~type approval authority***	***<u>Granting</u> ~~T~~type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required	Not required	Required	Optional
~~Adaptive controls (where applicable)~~	~~Declaration~~	~~Not required~~	~~Not required~~	~~Not required~~	~~Optional~~	~~Optional~~
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required	Not required	Required	Optional

<u> In the case of a vehicle with an approved engine system with regard to emissions, the engine manufacturer is responsible to perform this test.</u>**

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 ~~at initial~~ **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	
~~Engine power~~	~~Required~~		

~~* The type approval authority may request a test to be performed during initial type approval.~~

** 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 ~~at initial~~ for emission type approval	Tests at conformity of production	Tests at in service conformity	Tests at market surveillance
Relevant actor	***Granting ~~T~~type approval authority ~~for issuing the type approval~~***	***Granting ~~T~~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	Audit or optional testing		
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		

**** 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 ~~at initial~~ 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 ~~at initial~~ <u>for</u> emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***<u>Granting</u> ~~T~~type approval authority ~~for issuing the type approval~~***	***<u>Granting</u> ~~T~~type approval authority***	***<u>Granting</u> ~~T~~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~~	**<u>Optional</u>**	Optional~~/Optional~~	**<u>Optional</u>**
Durability requirement check in real life (RDE test with aged vehicles)	Declaration	Not required	Optional~~/Optional~~	**<u>Optional</u>**	Required~~/Optional~~	**<u>Optional</u>**

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

Test requirements	**Tests and requirements ~~at initial~~ for emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**
Brake system emissions test in WLTP brake cycle	Required	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 ~~at initial~~ for emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***Granting ~~T~~type approval authority ~~for issuing the type approval~~***	***Granting ~~T~~type approval authority***	***Granting ~~T~~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	~~Required~~ **Not required**~~/Optional~~	**Optional for verifying the share of friction braking during WLTP tests**	Optional **for verifying the share of friction braking during WLTP tests** ~~/Optional~~	**Optional for verifying the share of friction braking during WLTP tests**

ANNEX VI

CORRELATION TABLE

1. Regulation (EC) No 715/2007

Regulation (EC) No 715/2007	This Regulation
Article 1(1)	Article 1(1)
Article 1(2)	Article 1(2)
Article 2(1)	Article 2(1)
Article 2(2)	~~Article 5(6)~~
Article 3	Article 3
Article 4(1)~~, first subparagraph~~	Article 4(1)~~, first subparagraph~~
~~Article 4(1), second subparagraph~~	~~Article 4(1), second subparagraph~~
Article 4(2)	Article 7(1)
Article 4(3)	Article 7~~(4)~~ **(24)**
Article 4(4)	Article ~~7(6)~~ **14**
Article 5(1)	Article 4(2)
Article 5(2)	Article ~~4(3)~~ **4(5)**
Article 5(3)	Article 14~~(2)~~
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