



Brussels, **XXX**
[...](2018) **XXX** draft

COMMISSION REGULATION (EU) .../...

of **XXX**

**amending Regulation (EU) 2017/2400 and Directive 2007/46/EC of the European
Parliament and of the Council as regards the determination of the CO₂ emissions and
fuel consumption of heavy-duty vehicles**

(Text with EEA relevance)

COMMISSION REGULATION (EU) .../...

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amending Regulation (EU) 2017/2400 and Directive 2007/46/EC of the European Parliament and of the Council as regards the determination of the CO₂ emissions and fuel consumption of heavy-duty vehicles

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

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

Having regard to 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/EC¹, and in particular Article 4(3) and Article 5(4)(e) thereof,

Having regard to Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (Framework Directive)², and in particular Article 39(7) thereof,

Whereas:

- (1) Regulation (EU) 2017/2400 introduces a common method to objectively compare the performance of heavy-duty vehicles placed on the Union market as regards their CO₂ emissions and fuel consumption. It lays down provisions for the certification of components with an impact on CO₂ emissions and fuel consumption of heavy-duty vehicles, introduces a simulation tool for the purpose of determining and declaring CO₂ emissions and fuel consumption of those vehicles and lays down, *inter alia*, requirements for Member States' authorities and manufacturers to verify the conformity of the certification of the components and the conformity of the simulation tool operation.
- (2) The experience gained following the entry into force of Regulation (EU) 2017/2400 has led to the identification of several aspects of the common method for determination of the CO₂ emissions and fuel consumption of heavy-duty vehicles, the operation of the simulation tool, the certification of components, separate technical units and systems and the procedure for the checking of conformity of the operation of the simulation tool and of the certification of components, separate technical units and systems which need clarification. Those clarifications also have an impact on the information provided by manufacturers in accordance with Directive 2007/46/EC.
- (3) The Commission has carried out an assessment regarding the technical and economic implications of the necessary clarifications.

¹ OJ L 188, 18.7.2009, p. 1.

² OJ L 263, 9.10.2007, p. 1.

- (4) The improvement of the common method to objectively compare the performance of heavy-duty vehicles in terms of CO₂ emissions and fuel consumption should increase the competitiveness of Union industry and the transparency in the market as regards the fuel consumption of heavy-duty vehicles.
- (5) Liquefied natural gas (LNG) is an available alternative fuel to diesel for heavy-duty vehicles. The deployment of upcoming innovative LNG-based technologies will contribute to further decrease in CO₂ emissions as compared to diesel vehicles. To ensure that LNG is covered by the engine test procedure, it is appropriate to include LNG as an additional reference fuel in the certification of engines in order to determine the CO₂ emissions and fuel consumption of heavy-duty vehicles.
- (6) It is appropriate to take into account the specificities of vocational vehicles, i.e. vehicles that are used for other purposes than the delivery of goods. Those vehicles should therefore be attributed to specific sub-groups within the existing vehicle groups to distinguish them from vehicles that are used only for the delivery of goods and their CO₂ emissions should be determined in accordance with dedicated mission profiles.
- (7) It is also appropriate to clearly define those vehicles which, due to their advanced powertrains, including electric, hybrid electric and dual-fuel powertrains, cannot for the moment be subject to the requirement of determining their CO₂ emissions or fuel consumption using the available simulation tool. In order to ensure a good understanding of the rate of market penetration of those vehicles, a specific procedure should be provided for to allow a clear identification of those vehicles and their respective powertrains.
- (8) It is essential for achieving CO₂ reductions that the CO₂ emissions of newly produced heavy-duty vehicles are in conformity with the values determined pursuant to Regulation (EU) 2017/2400. The conformity of the operation of the simulation tool and of the certification of the components, separate technical units and systems with an impact on CO₂ emissions and fuel consumption should therefore be verified using an on-road verification testing procedure, in addition to the procedures already set out in Regulation (EU) 2017/2400. The verification testing procedure should be carried out by manufacturers and be verified by approval authorities.
- (9) It should be possible for the approval authorities to impose remedial measures for any systematic irregularities with regard to the certification of CO₂ emissions and fuel consumption related properties of components, separate technical units or systems and the operation of the simulation tool, including when such irregularities are identified in the course of the investigation following a vehicle failure in the verification testing procedure. If the approval authorities find no irregularities with regard to the certification of CO₂ emissions and fuel consumption related properties of components, separate technical units or systems or to the operation of the simulation tool despite the vehicle test failure, it should be possible for the Commission to examine a potential malfunction of the simulation tool.
- (10) During the verification testing procedure, the wheel torque, engine speed, engaged gear and fuel consumption of the heavy-duty vehicle should be measured on the road, close to the simulation tool mission profile, and compared to the fuel consumption calculated by the simulation tool. For a successfully passed verification testing procedure, the calculated fuel consumption should correspond to the measured fuel consumption within a certain tolerance.

- (11) The systematic verification of the results of a numerical simulation by a physical test is a new concept in the European type approval legislation. The underlying verification test procedure will therefore be evaluated with a view to possible improvements. The Commission and the approval authorities should therefore be authorised to collect the results of verification test procedures from manufacturers and to evaluate them.
- (12) In order to ensure sufficient time for the approval authorities and manufacturers to adapt to the new provisions, the obligation to verify CO₂ emissions and fuel consumption of new vehicles using the on-road verification testing procedure should be applicable as of 1 July 2020.
- (13) The CO₂ emissions data for vehicles falling within vehicle groups 4, 5, 9 and 10 that have been determined in accordance with Regulation (EU) 2017/2400 are to be monitored under Regulation (EU) No 2018/956 of the European Parliament and of the Council³, starting in 2019. The aim of the amendments to Regulation (EU) 2017/2400 set out in this Regulation is to ensure that reliable CO₂ emissions data can be collected for all the vehicles concerned by Regulation (EU) No 2018/956 for 2019. It is therefore important to ensure that the amendments set out in this Regulation enter into force without delay.
- (14) The measures provided for in this Regulation are in accordance with the opinion of the Technical Committee – Motor Vehicles,

HAS ADOPTED THIS REGULATION:

Article 1

Amendments to Regulation (EU) 2017/2400

Regulation (EU) 2017/2400 is amended as follows:

- (1) in Article 2, paragraph 2 is replaced by the following:
‘2. In case of multi-stage type-approvals or individual approvals of vehicles referred to in paragraph 1, this Regulation shall apply only to base vehicles equipped at least with a chassis, engine, transmission, axles and tyres.’;
- (2) Article 3 is amended as follows:
 - (a) the following point 4a is added:
‘(4a) “vehicle manufacturer” means a body or person responsible for issuing the manufacturer’s records file and the customer information file pursuant to Article 9;’;
 - (b) point 7 is replaced by the following:
‘(7) “torque converter” means a hydrodynamic start-up component either as a separate component of the driveline or transmission with serial or parallel power flow that adapts speed between engine and wheel and provides torque multiplication;’;
 - (c) the following points 15 to 21 are added:

³ Regulation (EU) 2018/956 of the European Parliament and of the Council on the monitoring and reporting of CO₂ emissions from and fuel consumption of new heavy-duty vehicles (OJ L 173, 9.7.2018, p. 1).

‘(15) "zero emission heavy-duty vehicle" or "ZE-HDV" means a heavy-duty vehicle without an internal combustion engine, or with an internal combustion engine that emits less than 1 g CO₂/kWh;

(16) "vocational vehicle" means a heavy-duty vehicle not intended for the delivery of goods;

(17) "rigid lorry" means a lorry that is not designed or constructed for the towing of a semi-trailer;

(18) "tractor" means a tractor unit that is designed and constructed exclusively or principally to tow semi-trailers;

(19) "sleeper cab" means a type of cabin that has a compartment behind the driver's seat intended to be used for sleeping;

(20) "hybrid electric heavy-duty vehicle" or "He-HDV" is as defined in Article 3(15) of Directive 2007/46/EC;

(21) "dual-fuel vehicle" is as defined in Article 2(48) of Regulation (EU) No 582/2011’;

(d) The following paragraph 2 is added:

‘With regard to He-HDVs, Articles 5(3), 9(1) and 12(1) shall apply only to He-HDVs where at least two energy converters are physically connected to the driveline or the wheels and contribute to positive propulsion power, excluding energy converters used only for the starting of the vehicle, and if the second highest maximum net power of all energy converters, which are linked to the vehicle driveline or the wheels, is at more than 10 % of the highest maximum net power of all energy converters. The maximum net power shall be determined in accordance with UNECE Regulation No 85 and shall be declared by the manufacturer for the purposes of Table 5 of Annex III.’

(3) Article 5 is amended as follows:

(a) paragraph 3 is replaced by the following:

‘The simulation tool shall be used for the purposes of determining CO₂ emissions and fuel consumption of new vehicles, or for the purposes of determining whether those vehicles are a ZE-HDVs, He-HDVs or dual-fuel vehicle. The simulation tool shall be designed to operate on the basis of input information as specified in Annex III, as well as input data referred to in Article 12(1)’

(b) paragraph 5 is replaced by the following:

‘5. The hashing tools shall be used for establishing an unequivocal association between the certified CO₂ emission and fuel consumption related properties of a component, separate technical unit or system and its certification document, as well as for establishing an unequivocal association between a vehicle and its manufacturer's records file and customer information file as referred to in Annex IV.’;

(4) Article 9 is amended as follows:

(a) the first subparagraph of paragraph 1 is replaced by the following:

‘1. A vehicle manufacturer shall determine the CO₂ emissions and fuel consumption of each new vehicle, with the exception of ZE-HDVs, He-HDVs

and dual-fuel vehicles, to be sold, registered or put into service in the Union using the latest available version of the simulation tool referred to in Article 5(3). With regard to ZE-HDVs, He-HDVs and dual-fuel vehicles to be sold, registered or put into service in the Union, the vehicle manufacturer shall determine only the information specified for those vehicles in the models set out in Part I and Part II of Annex IV using the latest available version of the simulation tool referred to in Article 5(3).’;

- (b) paragraph 3 is replaced by the following:

‘3. The vehicle manufacturer shall create cryptographic hashes of the manufacturer's records file and of the customer information file using the hashing tool referred to in Article 5(5).’;

- (c) paragraph 5 is replaced by the following:

‘5. Each vehicle to be registered, sold or to enter into service shall be accompanied by a certificate of conformity or, in the case of vehicles approved in accordance with Article 24 of Directive 2007/46/EC, an individual approval certificate, including an imprint of the cryptographic hash of the manufacturer's records file and of the customer information file referred to in paragraph 3.’;

- (5) Article 12 is amended as follows:

- (a) the following paragraphs 6 and 7 are added:

‘6. In the case of ZE-HDVs, He-HDVs and dual-fuel vehicles, the simulation tool input data shall include the information set out in Table 5 of Annex III.’;

‘7. Where the vehicle is to be registered, sold or put into service with snow tyres and standard tyres, the vehicle manufacturer may choose which of the tyres to use for determining the CO₂ emissions.’;

- (6) in Article 13, paragraph 8 is replaced by the following:

‘8. The standard value for tyres shall be the one for C3 snow tyres as set out in Table 2 of Part B of Annex II to Regulation (EC) No 661/2009 of the European Parliament and of the Council*.

* Regulation (EC) No 661/2009 of the European Parliament and of the Council of 13 July 2009 concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor (OJ L 200, 31.7.2009, p. 1).’;

- (7) Article 20 is amended as follows:

- (a) the title is replaced by the following:

‘Responsibilities of the vehicle manufacturer, the approval authority and the Commission with regard to the conformity of simulation tool operation’

- (b) in paragraph 1, the following subparagraph is added:

‘The vehicle manufacturer shall, on a yearly basis, perform the verification testing procedure set out in Annex Xa on a minimum number of vehicles in accordance with point 3 of that Annex. The vehicle manufacturer shall provide, until 31 December of each year and in accordance with point 8 of Annex Xa, a test report to the approval authority for each vehicle tested, shall keep the test

reports for a duration of at least 10 years and shall make them available to the Commission and approval authorities of the other Member States upon request’;

- (c) in paragraph 2, the following subparagraphs are added:

‘Where a vehicle fails the verification testing procedure set out in Annex Xa, the approval authority shall start an investigation to determine the cause of that failure, in accordance with Annex Xa. As soon as the approval authority determines the cause of the failure, it shall inform the approval authorities of the other Member States thereof.

If the cause of the failure is linked to the operation of the simulation tool, Article 21 shall apply. If the cause of the failure is linked to the certified CO₂ emissions and fuel consumption related properties of components, separate technical units and systems, Article 23 shall apply.

If no irregularities could be found in the certification of components, separate technical units or systems and the operation of the simulation tool, the approval authority shall report the vehicle failure to the Commission. The Commission shall investigate whether the simulation tool or the verification testing procedure set out in Annex Xa has caused the vehicle to fail and whether an improvement of the simulation tool or the verification testing procedure is necessary.’;

- (8) in Article 23, in paragraph 1, the first subparagraph is replaced by the following:

‘1. Where the approval authority finds, pursuant to Articles 20 and 22, that the measures taken by the manufacturer to ensure that the CO₂ emissions and fuel consumption related properties of the components, separate technical units and systems listed in Article 12(1) and which have been the subject of certification in accordance with Article 17 do not deviate from the certified values are not adequate, the approval authority shall request the manufacturer to submit a plan of remedial measures no later than 30 calendar days after receipt of the request from the approval authority.’

- (9) Article 24 is amended as follows:

- (a) in paragraph 1, point (a) is replaced by the following:

‘(a) vehicles in the groups 4, 5, 9, 10 including the sub-group “v” in each vehicle group, as defined in Table 1 of Annex I, as from 1 July 2019;’;

- (b) in paragraph 2, the second sentence is replaced by the following:

‘For vehicles in the sub-group “v” of any of those vehicle groups, the obligation referred to in Article 9 shall apply as from the entry into force of this Regulation.

For the purposes of the first subparagraph, the production date shall mean:

- (a) the date of signature of the certificate of conformity;
- (b) where a certificate of conformity has not been issued, the date on which the vehicle identification number was affixed for the first time on the relevant parts of the vehicle.’;
- (c) the following paragraphs 3 and 4 are added:
- ‘3. Article 2 shall apply as from 1 July 2019.

4. The second subparagraph of Article 20(1) and the second, third and fourth subparagraphs of Article 20(2) shall apply from 1 July 2020. Remedial measures under Articles 21(5) and 23(6) shall apply pursuant to an investigation into a vehicle failure in the verification testing procedure set out in Annex Xa as from 1 July 2023.’;

- (10) Annex I is amended in accordance with Annex I to this Regulation;
- (11) Annex III is amended in accordance with Annex II to this Regulation;
- (12) Annex IV is amended in accordance with Annex III to this Regulation;
- (13) Annex V is amended in accordance with Annex IV to this Regulation;
- (14) Annex VI is amended in accordance with Annex V to this Regulation;
- (15) Annex VII is amended in accordance with Annex VI to this Regulation;
- (16) Annex VIII is amended in accordance with Annex VII to this Regulation;
- (17) Annex IX is amended in accordance with Annex VIII to this Regulation;
- (18) Annex X is amended in accordance with Annex IX to this Regulation;
- (19) a new Annex Xa is inserted as set out in Annex X to this Regulation.

Article 2

Amendments to Directive 2007/46/EC

Annexes I, IV and IX to Directive 2007/46/EC are amended in accordance with Annex XI to this Regulation.

Article 3

Entry into force

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

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

Done at Brussels,

For the Commission
The President
Jean-Claude Juncker