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**COMMISSION IMPLEMENTING REGULATION (EU) .../...**

**of **XXX****

**amending Implementing Regulation (EU) 2017/1153 as regards the reporting for the calendar year 2020 of WLTP CO<sub>2</sub> measurement results for certain categories of new passenger cars and adjusting the input data for the correlation tool**

(Text with EEA relevance)

*This draft has not been adopted or endorsed by the European Commission. Any views expressed are the preliminary views of the Commission services and may not in any circumstances be regarded as stating an official position of the Commission.*

# COMMISSION IMPLEMENTING REGULATION (EU) .../...

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**amending Implementing Regulation (EU) 2017/1153 as regards the reporting for the calendar year 2020 of WLTP CO<sub>2</sub> measurement results for certain categories of new passenger cars and adjusting the input data for the correlation tool**

(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 443/2009 of the European Parliament and of the Council of 23 April 2009 setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO<sub>2</sub> emissions from light-duty vehicles<sup>1</sup>, and in particular the first subparagraph of Article 8(9) and the first subparagraph of Article 13(7) thereof,

Whereas:

- (1) Regulation (EU) 2019/631 of the European Parliament and of the Council<sup>2</sup> provides that the EU fleet-wide CO<sub>2</sub> emissions targets for 2025 and 2030 for new passenger cars are to be calculated on the basis of the CO<sub>2</sub> emissions measured in accordance with Commission Regulation (EU) 2017/1151<sup>3</sup> for new passenger cars registered in 2020 (hereinafter "measured CO<sub>2</sub> emission values").
- (2) Commission Implementing Regulation (EU) 2017/1153<sup>4</sup> sets out rules about the calculation and reporting by manufacturers of the measured CO<sub>2</sub> emission values. It is, however, necessary to further specify how those values are to be determined, in particular, as regards Not-Off-Vehicle Charging Hybrid Electric Vehicles (NOVC-HEV) and Off-Vehicle Charging Hybrid Electric Vehicles (OVC-HEV).
- (3) It should also be clarified how the measured CO<sub>2</sub> emissions are to be determined where several CO<sub>2</sub> emissions tests are performed for the purpose of type-approval.

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<sup>1</sup> OJ L 140, 5.6.2009, p. 1.

<sup>2</sup> Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO<sub>2</sub> 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).

<sup>3</sup> Commission Regulation (EU) 2017/1151 of 1 June 2017 supplementing Regulation (EC) No 715/2007 of the European Parliament and of the Council 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, amending Directive 2007/46/EC of the European Parliament and of the Council, Commission Regulation (EC) No 692/2008 and Commission Regulation (EU) No 1230/2012 and repealing Commission Regulation (EC) No 692/2008 (OJ L 175, 7.7.2017, p. 1).

<sup>4</sup> Commission Implementing Regulation (EU) 2017/1153 of 2 June 2017 setting out a methodology for determining the correlation parameters necessary for reflecting the change in the regulatory test procedure and amending Regulation (EU) No 1014/2010 (OJ L 175, 7.7.2017, p. 679).

- (4) The correlation of the CO<sub>2</sub> emissions of NOVC-HEVs and OVC-HEVs should be performed on the basis of physical vehicle tests and not on the basis of simulations performed by the correlation tool, due to the complexity of adapting the correlation tool to take into account such vehicle technologies. In order to ensure effective verification of the correlation results, technical test data relating to those vehicles should, however, be provided to the Commission in the same way as for conventional vehicles.
- (5) Implementing Regulation (EU) 2017/1153 should therefore be amended accordingly.
- (6) The measures provided for in this Regulation are in accordance with the opinion of the Climate Change Committee,

HAS ADOPTED THIS REGULATION:

### *Article 1*

Implementing Regulation (EU) 2017/1153 is amended as follows:

- (1) Article 7a is amended as follows:
  - (a) the first sub-paragraph of paragraph 1 is replaced by the following:
 

‘Manufacturers shall calculate the combined or, where applicable, weighted combined CO<sub>2</sub> emissions, determined as  $M_{CO_2, \text{measured}}$ , for each new passenger car registered in 2020 in accordance with the following equations:

    - (a) For pure internal combustion engine vehicles:
 

the equation for calculating  $M_{CO_2\text{-ind}}$  set out in the second subparagraph of paragraph 3.2.3.2.4 of Sub-Annex 7 to Annex XXI to Regulation (EU) 2017/1151, where the terms  $M_{CO_2\text{-H}}$  and  $M_{CO_2\text{-L}}$  shall, for the interpolation family concerned, be replaced by the values  $M_{CO_2,C,5}$  (combined) taken from the entries 2.5.1.1.3 (vehicle H) and 2.5.1.2.3 (vehicle L) of the EC type-approval certificate, as indicated in the model set out in Appendix 4 to Annex I to Regulation (EU) 2017/1151;
    - (b) For Not-Off-Vehicle Charging Hybrid Electric Vehicles (NOVC-HEV):
 

the equation:  $M_{CO_2\text{-measured}} = M_{CO_2\text{-L},C,5} + K_{\text{ind}} \times (M_{CO_2\text{-H},C,5} - M_{CO_2\text{-L},C,5})$

Where,

|                         |  |
|-------------------------|--|
| $M_{CO_2\text{-L},C,5}$ | is the value $M_{CO_2,C,5}$ (combined) for the interpolation family concerned, taken from entry 2.5.1.2.3 of the EC type-approval certificate as indicated in the model set out in Appendix 4 to Annex I to Regulation (EU) 2017/1151; |
| $K_{\text{ind}}$        | is the interpolation coefficient for the considered individual vehicle for the applicable WLTP test cycle as specified in paragraph 4.5.3 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151;                                    |
| $M_{CO_2\text{-H},C,5}$ | is the value $M_{CO_2,C,5}$ (combined) for the interpolation family concerned, taken from entry 2.5.1.1.3 of the EC type-approval certificate as indicated in the model set out in Appendix 4 to Annex I to Regulation (EU) 2017/1151. |
    - (c) For Off-Vehicle Charging Hybrid Electric Vehicles (OVC-HEV):

the equation:  $M_{CO_2\text{-measured}} = M_{CO_2\text{-L,C,5}} + K_{ind} \times (M_{CO_2\text{-H,C,5}} - M_{CO_2\text{-L,C,5}})$

Where,

$M_{CO_2\text{-L,C,5}}$ ,  $M_{CO_2\text{-H,C,5}}$  are, for the interpolation family concerned, determined in accordance with the formula set out in paragraph 4.1.3.1 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151, where the term  $M_{i,CDj}$  shall be replaced by the value  $M_{CO_2,CD}$  (combined) taken from the entry 2.5.3.2 for vehicle H and L, as applicable, of the EC type-approval certificate, and the term  $M_{i,CS}$  shall be replaced by the value  $M_{CO_2,C,5}$  (combined) taken from entry 2.5.3.1. of the EC type-approval certificate for vehicle H, L, or M, as applicable;

$K_{ind}$  is the interpolation coefficient for the considered individual vehicle for the applicable WLTP test cycle as defined in paragraph 4.5.3 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151.’;

(b) the following paragraph 1a is inserted:

‘1a. Where more than one measurement value is recorded in entries 2.5.1.1.3., 2.5.1.2.3., 2.5.3.1 or 2.5.3.2. of an EC type-approval certificate, the  $M_{CO_2,C,5}$  or  $M_{CO_2,CD}$  values referred to in paragraph 1 shall, for the purpose of this provision, be determined as follows:

- (a) in the case of one measurement: the combined value recorded for Test 1;
- (b) in the case of two measurements: the average of the two combined values recorded for Tests 1 and 2;
- (c) in the case of three measurements: the average of the three combined values recorded for Tests 1, 2 and 3.’;

(2) Annex I is amended as follows:

(a) in point 2.1, the last sentence of the second paragraph is replaced by the following:

‘With regard to Not-Off-Vehicle Charging Hybrid Electric Vehicles (NOVC-HEV) and Off-Vehicle Charging Hybrid Electric Vehicles (OVC-HEV), the NEDC CO<sub>2</sub> values to be used as a reference for the purpose of Section 3 shall be determined by way of physical vehicle tests instead of correlation tool simulations. The physical measurements shall be performed in accordance with the relevant provisions referring to physical vehicle tests set out in this Annex. The input data for the physical vehicle tests shall be determined and submitted to the type-approval authority or, where applicable, technical service, in accordance with point 2.4’;

(b) in point 2.2a, point (a) is replaced by the following:

‘(a) The correction of the WLTP test results for CO<sub>2</sub> mass emissions in accordance with Appendix 2 to Sub-Annex 6 and Appendix 2 to Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151 shall apply to all such test results, notwithstanding paragraph 3.4.4(a) of Appendix 2 to Sub-Annex 6 and paragraph 1.1.4(a) of Appendix 2 to Sub-Annex 8 to Annex XXI to that Regulation.’;

(c) in point 2.4, table 1 is amended as follows:

- (i) in entry 24, the text in the second column under “Input parameters for the correlation tool” is replaced by the words ‘Service battery capacity’;
- (ii) in entry 38, the text in the fourth column under “Source” is replaced by the words ‘Points 2.1.1. or 2.1.2 of the test report set out in Appendix 8a to Annex I to Regulation (EU) 2017/1151’;
- (iii) in entry 61, the text in the second column under “Input parameters for the correlation tool” is replaced by the words ‘Service battery current’;
- (iv) the following entries 79 to 103 are added:

|    |   |                      |  |   |
|----|---|----------------------|--|---|
| 79 | WLTP Charge-Sustaining CO <sub>2</sub> bag results (Phase 1-4) measured   | gCO <sub>2</sub> /km | Test results   | Phase bag values, not corrected for RCB (applicable to NOVC and OVC-HEVs), M <sub>CO<sub>2</sub>,C,5</sub> taken from entry 2.5.3.1 of the EC type-approval certificate |
| 80 | WLTP Charge-depleting CO <sub>2</sub> results (combined)                  | gCO <sub>2</sub> /km | Test results   | Combined utility factor weighted CD CO <sub>2</sub> results (OVC-HEV only) M <sub>CO<sub>2</sub>,CD</sub> taken from entry 2.5.3.2 of the EC type-approval certificate  |
| 81 | WLTP utility factor-weighted combined CO <sub>2</sub> emission (measured) | gCO <sub>2</sub> /km | Calculated according to paragraph 4.1.3.1 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151 | Calculated weighted combined results (measured) as described in Article 7a(1)(c) of this Regulation (OVC-HEV only)  |
| 82 | WLTP utility factor-weighted combined CO <sub>2</sub> emission (declared) | gCO <sub>2</sub> /km | Entry 2.5.3.3 of the EC type-approval certificate  | Calculated weighted combined results (declared) taken from entry 2.5.3.3 of the EC type-approval certificate (OVC-HEV only)   |
| 83 | WLTP Equivalent all electric range (EAER) combined                        | km                   | Entry 2.5.3.7.2 (EAER) of the EC type-approval certificate   | Combined Equivalent all Electric Range (EAER) (for OVC-HEV)   |
| 84 | WLTP number of charge-depleting tests                                     | -                    | Test results   | for OVC-HEV indicate number of tests driven in CD mode  |
| 85 | Relative electric energy change REECi of each charge-depleting test       | -                    | Calculated according to paragraph 3.2.4.5.2 of   | Indicate REECi of each CD test  |

|    |   |                      |  |   |
|----|---|----------------------|--|---|
|    |   |                      | Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151                                    |   |
| 86 | NEDC Charge-Sustaining CO <sub>2</sub> emission (declared, Condition B) | gCO <sub>2</sub> /km | Information document (Appendix 3 of Annex I to Regulation (EU) 2017/1151)                | CS CO <sub>2</sub> emission, not corrected for RCB (applicable to NOVC and OVC-HEVs), OEM declaration                   |
| 87 | NEDC Charge- Depleting CO <sub>2</sub> emission (declared, Condition A) | gCO <sub>2</sub> /km | Information document (Appendix 3 of Annex I to Regulation (EU) 2017/1151)                | Combined CD CO <sub>2</sub> emission, OEM declaration (only OVC-HEV)  |
| 88 | NEDC weighted-combined CO <sub>2</sub> emission (declared)              | gCO <sub>2</sub> /km | OEM declaration  | OEM declaration (only OVC-HEV)  |
| 89 | NEDC electric range for OVC-HEV (declared)                              | km                   | OEM declaration  | OEM declaration (only OVC-HEV)  |
| 90 | K factor for charge sustaining mode correction                          | (g/km)/(Wh/km)       | paragraph 2.3.2.2 of Appendix 2 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151 | CO <sub>2</sub> mass emission correction coefficient for NOVC and OVC-HEV   |
| 91 | Hybrid Vehicle Configuration (P0 P1, P2, P3, or P4)*                    | -                    |  | Does the vehicle have an electric machine used for vehicle propulsion in P0, P1, P2, P3, or P4 position OEM declaration |
| 92 | Maximum power of motor (P0, P1, P2, P3, P3, P4, P4, P4, P4)             | kW                   | Point 3.3.1.1.1 of Appendix 3 of Annex I to Regulation (EU) 2017/1151                    | OEM declaration   |
| 93 | Maximum torque of motor (P0, P1, P2, P3, P3, P4, P4, P4, P4)            | Nm                   |  | OEM declaration   |

|     |   |    |  |   |
|-----|---|----|--|---|
| 94  | Ratio between electric machine rotational speed and reference rotational speed (P0, P1, P2, P3, P3, P4, P4, P4, P4) | -  |  | OEM declaration   |
| 95  | Traction battery capacity   | Ah | Point 3.3.2.3 of Appendix 3 of Annex I to Regulation (EU) 2017/1151  | Capacity of traction battery (OEM declaration)  |
| 96  | Traction battery current  | A  | Appendix 3 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151  | 10Hz time-series values used for the test(s)  |
| 97  | Traction battery type   | -  | Point 1.1.10 of Appendix 8a of Annex I to Regulation (EU) 2017/1151  | Type of traction battery (OEM declaration)  |
| 98  | Number of battery cells   |    | Point 3.3.2.1. of Appendix 3 of Annex I to Regulation (EU) 2017/1151 | OEM declaration   |
| 100 | Traction battery voltage nominal/time-series  | V  | Appendix 3 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151  | Nominal or time-series values used for the test (1hz minimum)   |
| 101 | Service battery nominal Voltage   | V  |  | Voltage of service battery, OEM declaration   |
| 102 | Engine-idle coasting function   | -  | Y/N  | Does the vehicle have the engine-stop coasting function (allow the engine to switch off during vehicle coasting in order to save fuel)? |

|     |                               |   |     |   |
|-----|-------------------------------|---|-----|---|
| 103 | Engine-stop coasting function | - | Y/N | Does the vehicle have the engine idle coasting function (allow the engine to idle during vehicle coasting in order to save fuel)? |
|-----|-------------------------------|---|-----|---|

- \* P0: the electric motor is on the engine service belt therefore has the engine speed as reference speed;  
P1: the electric motor is on the engine crankshaft therefore has the engine speed as reference speed;  
P2: the electric motor is mounted between the engine clutch/torque converter and the gearbox, therefore has the gearbox input speed as reference speed;  
P3: the electric motor is between the gearbox and the final drive, therefore has the final drive input speed (rotational speed entering the final drive from the gearbox side) as reference speed. A vehicle can have up to two P3 motors (one for the front and one for the rear axle);  
P4: the electric motor is downstream the final drive, therefore has the wheel speed as reference speed. A vehicle can have up to four P4 motors (one for each wheel).’.

## Article 2

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

Point (2)(c)(iv) of Article 1 shall apply from 1 January 2020.

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*