COMMISSION IMPLEMENTING REGULATION (EU) 2019/1840

of 31 October 2019

amending Implementing Regulation (EU) 2017/1153 as regards the reporting of WLTP CO_2 values 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_2 emissions from light-duty vehicles ([1]), 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 ([2]) provides that the EU fleet-wide CO_2 emissions targets for 2025 and 2030 for new passenger cars are to be calculated on the basis of the CO_2 emissions measured in accordance with Commission Regulation (EU) 2017/1151 ([3]) for new passenger cars registered in 2020 (hereinafter 'measured CO_2 emission values').

(2) Commission Implementing Regulation (EU) 2017/1153 ([4]) sets out rules about the calculation and reporting by manufacturers of the measured CO_2 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_2 emission values are to be determined where several CO_2 emissions tests are performed for the purpose of type-approval.

(4) The correlation of the CO_2 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,

([1]) OJ L 140, 5.6.2009, p. 1.
([2]) Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO_2 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).
([3]) 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).
([4]) 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).

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 subparagraph of paragraph 1 is replaced by the following:

'Manufacturers shall calculate the combined or, where applicable, weighted combined CO_2 emissions, determined as $M_{CO2,\ measured}$, 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 $M_{CO2\text{-}ind}$ 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 $M_{CO2\text{-}H}$ and $M_{CO2\text{-}L}$ shall, for the interpolation family concerned, be replaced by the values $M_{CO2,C,5}$ (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: $M_{CO2\text{-}measured} = M_{CO2\text{-}L,C,5} + K_{ind} \times (M_{CO2\text{-}H,C,5} - M_{CO2\text{-}L,C,5})$

Where,

$M_{CO2\text{-}L,C,5}$	is the value $M_{CO2,C,5}$ (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_{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;
$M_{CO2\text{-}H,C,5}$	is the value $M_{CO2,C,5}$ (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: $M_{CO2\text{-}measured} = M_{CO2\text{-}L,C,5} + K_{ind} \times (M_{CO2\text{-}H,C,5} - M_{CO2\text{-}L,C,5})$

Where,

$M_{CO2\text{-}L,C,5}$, $M_{CO2\text{-}H,C,5}$	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 $M_{CO2,CD}$ (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 $M_{CO2,C,5}$ (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 $M_{CO2,C,5}$ or $M_{CO2,CD}$ 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_2 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_2 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 the provisions in 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) entries 38 to 41 are replaced by the following:

'38	WLTP CO_2 value phase 1 (Charge-Sustaining value in case of NOVC and OVC-HEVs)	gCO_2/km	Entry 2.1.1.2.1. of Appendix 8a to Annex I of (EU) 2017/1151	*Uncorrected measured value $M_{CO2,p,1}$ of phase Low*
39	WLTP CO_2 value phase 2 (Charge-Sustaining value in case of NOVC and OVC-HEVs)	gCO_2/km	Idem	*Uncorrected measured value $M_{CO2,p,1}$ of phase Medium*
40	WLTP CO_2 value phase 3 (Charge-Sustaining value in case of NOVC and OVC-HEVs)	gCO_2/km	Idem	*Uncorrected measured value $M_{CO2,p,1}$ of phase High*
41	WLTP CO_2 value phase 4 (Charge-Sustaining value in case of NOVC and OVC-HEVs)	gCO_2/km	Idem	*Uncorrected measured value $M_{CO2,p,1}$ of phase Extra-High*'

(iii) in entry 60, the text in the second column under 'Input parameters for the correlation tool' is replaced by the words 'WLTP Alternator (DC/DC converter – low voltage side — in case of NOVC and OVC-HEVs) Current';

(iv) in entry 61, the text in the second column under 'Input parameters for the correlation tool' is replaced by the words 'Service battery current';

(v) entry 75 is deleted;

(vi) entry 77 is replaced by the following:

'77	WLTP CO_2 measured corrected (Charge-Sustaining value in case of NOVC and OVC-HEVs) for vehicle H and/or L	g/km	Entry 2.1.1.2.1 of Appendix 8a to Annex I of (EU) 2017/1151	*Combined measured CO_2 emissions for vehicle H and L after all applicable corrections, $M_{CO2,C,5}$. In case of 2 and 3 WLTP tests all measured results shall be provided (except for NOVC and OVC-HEVs where only final type-approval value shall be provided).*'

(vii) the following entries 79 to 101 are added:

'79	WLTP Charge-depleting CO_2 results (combined)	gCO_2/km	2.5.3.2 of Appendix 4 to Annex I to Regulation (EU) 2017/1151	*Combined charge depleting CO_2 mass emissions $M_{CO2,CD}$ (average values in case of 2 and 3 tests) for the Type I test as calculated according to paragraph 4.1.2 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151(OVC-HEV only)*
80	WLTP utility factor-weighted combined CO_2 emission (measured)	gCO_2/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)*
81	WLTP utility factor-weighted combined CO_2 emission (declared)	gCO_2/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)*
82	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) (OVC-HEV only)*
83	Index number of the transition cycle	—	Entry 2.1.1.4.1.4 of Appendix 8a to Annex I to Regulation (EU) 2017/1151	*for OVC-HEV indicate the index number of the transition cycle*
84	Relative electric energy change REECi of each charge-depleting test	—	Calculated according to paragraph 3.2.4.5.2 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151	*Indicate REECi of each CD test*
85	NEDC Charge- Sustaining CO_2 emission (declared, Condition B)	gCO_2/km	Information document (Appendix 3 of Annex I to Regulation (EU) 2017/1151) (for NOVC-HEV entry 3.5.7.2.1; for OVC-HEV entry 3.5.7.2.2)	*OEM declaration for NOVC-HEV: Declared combined NEDC CO_2 value; For OVC-HEV: Declared combined charge sustaining CO_2 mass emission (NEDC condition B).*
86	NEDC Charge- Depleting CO_2 emission (declared, Condition A)	gCO_2/km	Information document, (entry 3.5.7.2.3 of Appendix 3 of Annex I to Regulation (EU) 2017/1151)	*Combined CD CO_2 emission, OEM declaration (only OVC-HEV)*
87	NEDC weighted-combined CO_2 emission (declared)	gCO_2/km	OEM declaration	*OEM declaration (only OVC-HEV)*

88	NEDC electric range for OVC-HEV (declared)	km	OEM declaration	*OEM declaration (only OVC-HEV)*
89	K_{CO2} factor for charge sustaining mode correction	(g/km)/(Wh/km)	paragraph 2.3.2 of Appendix 2 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151	*RCB CO_2 mass emission correction coefficient for NOVC and OVC-HEV*
90	Hybrid Vehicle Configuration (P0, P1, P2, P2 planetary, P3, or P4) (***)	—		*Does the vehicle have an electric machine used for vehicle propulsion and electric energy generation in P0, P1, P2, P2 planetary, P3, or P4 position, or a combination thereof? OEM declaration*
91	Maximum power output of each electric machine (P0, P1, P2, P2 planetary, P3, or P4) (***)	kW	Point 3.3.1.1.1 of Appendix 3 of Annex I to Regulation (EU) 2017/1151	*OEM declaration*
92	Maximum torque output of each electric machine (P0, P1, P2, P2 planetary, P3, or P4) (***)	Nm		*OEM declaration*
93	For each electric machine, the ratio between the electric machine rotational speed and the reference rotational speed (P0, P1, P2, P2 planetary, P3, or P4) (***)	—		*OEM declaration*
94	Traction REESS capacity	Ah	Point 3.3.2.3 of Appendix 3 of Annex I to Regulation (EU) 2017/1151	*OEM declaration*
95	Traction REESS current	A	Appendix 3 of Sub-Annex 8 to Annex XXI to Regulation (EU) 2017/1151	*20Hz time-series values used for the test(s) re-sampled to 1Hz*
96	Traction REESS technology type	—	Point 1.1.10 of Appendix 8a of Annex I to Regulation (EU) 2017/1151	*OEM declaration*
97	Traction REESS initial state of charge	%		*OEM declaration*
98	Number of REESS cells		Point 3.3.2.1 of Appendix 3 of Annex I to Regulation (EU) 2017/1151	*OEM declaration*

99	Traction REESS 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 (20Hz minimum)*
100	Engine-idle 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)?*
101	Engine-off coasting function	—	Y/N	*Does the vehicle have the engine-off coasting function (allow the engine to switch off during vehicle coasting in order to save fuel)?*

(***) P0: the electric machine is connected to the engine transmission belt therefore has the engine speed as reference speed;
P1: the electric machine is connected to the engine crankshaft therefore has the engine speed as reference speed;
P2: the electric machine is mounted right upstream the transmission (gearbox or continuously variable transmission), therefore has the transmission input speed as reference speed;
P2 planetary: the electric machine is connected to the gear of a planetary gearset that is not connected to the internal combustion engine or the final drive sides, here referred to as the planetary side. In this case the speed ratio to be specified is the ratio between the electric machine and planetary side rotational speed (reference speed) reflecting the speed multiplication/reduction effect of a reduction gear
P3: the electric machine is right upstream the final drive of a driven axle therefore has the final drive input rotational speed as reference speed (this includes electric machines mounted on the gear of a planetary gearset on the final drive side). A vehicle can have up to two P3 machines (one for the front (P3a) and one for the rear (P3b) axle;
P4: the electric machine 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, where P4a indicates front wheels and P4b rear wheels).
Further specifications of these inputs are to be provided in the input template for the correlation tool';

(d) in the second paragraph of point 4.2.1.4.2, the following sentence is added:

'In the case of point (d), where the road load coefficients for the road load matrix family have been determined in accordance with point 2.3.8.2.1(a), the road load coefficients for the individual vehicle may be determined in accordance with the formulae set out in the second paragraph of point 4.2.1.5.'

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) 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, 31 October 2019.

For the Commission
The President
Jean-Claude JUNCKER