Commission Implementing Decision (EU) 2020/1167 of 6 August 2020 on the approval of the technology used in a 48 Volt efficient motor-generator combined with a 48 Volt/12 Volt DC/DC converter for use in conventional combustion engine and certain hybrid electric passenger cars and light commercial vehicles as an innovative technology pursuant to Regulation (EU) 2019/631 of the European Parliament and of the Council) (Text with EEA relevance)

COMMISSION IMPLEMENTING DECISION (EU) 2020/1167

of 6 August 2020

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(Text with EEA relevance)

THE EUROPEAN COMMISSION,

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

Having regard to 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[(1)], and in particular Article 11(4) thereof,

Whereas:

(1) On 10 October 2019, the supplier SEG Automotive Germany GmbH submitted a request ('the request') in accordance with Article 12a of the respective Commission Implementing Regulations (EU) No 725/2011[(2)] and (EU) No 427/2014[(3)] to amend Commission Implementing Decisions (EU) 2019/314[(4)] and (EU) 2019/313[(5)] with a view to taking into account the Worldwide Harmonised Light Vehicles Test Procedure (WLTP) set out in Commission Regulation (EU) 2017/1151[(6)].

(2) On 31 October 2019, the manufacturers Audi AG, Bayerische Motoren Werke AG, Daimler AG, FCA Italy S.p.A, Ford-Werke GmbH, Honda Motor Europe Ltd, Hyundai Motor Europe Technical Center GmbH, Jaguar Land Rover LTD, Renault, Toyota Motor Europe NV/SA, Volkswagen AG, Volkswagen Nutzfahrzeuge and the suppliers SEG Automotive Germany GmbH, Valeo Electrical systems and Mitsubishi Electric Corporation, submitted a joint application ('the application') for the approval as an innovative technology of the technology used in 48 Volt efficient motor-generator combined with a 48 Volt/12 Volt DC/DC converter for use in passenger cars and light commercial vehicles with conventional internal combustion powertrains (conventional ICE vehicles) and in certain not-off vehicle charging hybrid electric vehicles (NOVC-HEVs). The application refers to CO_2 emissions savings that cannot be demonstrated by

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measurements performed in accordance with the WLTP as set out in Regulation (EU) 2017/1151.

(3) The request and the application have been assessed in accordance with Article 11 of Regulation (EU) 2019/631, Implementing Regulations (EU) No 725/2011 and (EU) No 427/2014 and the Technical Guidelines for the preparation of applications for the approval of innovative technologies pursuant to Regulation (EC) No 443/2009 of the European Parliament and of the Council[7] and (EU) No 510/2011 of the European Parliament and of the Council[8] (July 2018 version)[9]. In accordance with Article 11(3) of Regulation (EU) 2019/631, the request and the application were accompanied by verification reports undertaken by independent and certified bodies.

(4) Considering that the request and the application refer to the same innovative technology and that the same conditions should apply for its use in the vehicle categories concerned, it is appropriate to address both the request and the application in one single decision.

(5) The 48 Volt motor-generator may operate as either an electric motor converting electrical energy into mechanical energy, or as a generator converting mechanical energy into electrical energy, i.e. as a standard alternator. The 48 Volt/12 Volt DC/DC converter enables the 48 Volt motor-generator to provide electric energy at the voltage required to power the 12 Volt electric power board of the vehicle and/or charging the 12 Volt battery.

(6) The technology used in the 48 Volt efficient motor-generator combined with a 48 Volt/12 Volt DC/DC converter supplied by SEG Automotive Germany GmbH has already been approved for use in conventional ICE powered and certain NOVC-HEV passenger cars by Implementing Decision (EU) 2019/314 as well as for use in conventional ICE powered and certain NOVC-HEV light commercial vehicles by Implementing Decision (EU) 2019/313, as an innovative technology capable of saving CO_2 emissions in a way that is only partially covered by the measurements performed as part of the emission test under the New European Driving Cycle (NEDC) set out in Commission Regulation (EC) No 692/2008[10]. The technology has also been approved as a generic innovative technology by reference to NEDC conditions by Commission Implementing Decision (EU) 2020/1102[11].

(7) The request and the application refer, however, to the WLTP set out in Regulation (EU) 2017/1151. It has been demonstrated that the measurements performed as part of the emissions test under the WLTP only partially cover the CO_2 savings resulting from the technology used in 48 Volt efficient motor-generators combined with a 48 Volt/12 Volt DC/DC converter.

(8) Based on the experience gained from the assessment of the applications approved by Implementing Decisions (EU) 2019/313, (EU) 2019/314 and (EU) 2020/1102, and taking into account the information provided with the present request and application, it has been satisfactorily and conclusively demonstrated that the technology used in a 48 Volt efficient motor-generator combined with a 48 Volt/12 Volt DC/DC converter meets the criteria referred to in Article 11(2) of Regulation (EU) 2019/631 and the eligibility criteria specified in Article 9(1)(b) of Implementing Regulations (EU) No 725/2011 and (EU) No 427/2014.

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(9) The innovative technology should be used in conventional ICE passenger cars or light commercial vehicles, or in NOVC-HEVs of those categories for which uncorrected measured fuel consumption and CO_2 emission values may be used in accordance with paragraph 1.1.4 of Appendix 2 to Sub-annex 8 to Annex XXI to Regulation (EU) 2017/1151.

(10) Both the request and the application refer to the methodology for determining the CO_2 savings from the use of the 48 Volt efficient motor-generator combined with a 48 Volt/12 Volt DC/DC converter in passenger cars and light commercial vehicles set out in point 3 of the Annex to Implementing Decisions (EU) 2019/313 and (EU) 2019/314, i.e. the 'separate method'.

(11) The methodology proposed in the application differs, however, from the 'separate method' with regard to the voltage level to be used for the efficiency measurement of the 48 Volt motor-generator, which is proposed to be set to 48 Volt, instead of 52 Volt. In addition the output current for the efficiency measurement of the 48 Volt/12 Volt DC/DC converter is proposed to be set as half the nominal power of the DC/DC converter divided by 14,3 Volt, instead of the nominal power of the DC/DC converter divided by 14,3 Volt. Moreover, in the application it is proposed to introduce a run-in procedure for the 48 Volt motor-generator.

(12) With regard to the changes proposed to the 'separate method' set out in Implementing Decisions (EU) 2019/313 and (EU) 2019/314 regarding the voltage level of the efficiency measurement of the 48 Volt motor-generator and the output current of the efficiency measurement of the 48 Volt/12 Volt DC/DC converter, it is found that those changes may lead to less conservative results in terms of CO_2 savings. The applicants have claimed that the changes are justified as they would be more representative of real world driving conditions. The evidence provided in support of that claim can, however, not be considered sufficient, in particular due to the limited studies performed in support of the application and the absence of evidence supporting the change of the output current for the efficiency measurement of the 48 Volt/12 Volt DC/DC converter. Against that background, it is considered that these aspects of the 'separate method' set out in point 3 of the Annex to the respective Implementing Decisions (EU) 2019/313 and (EU) 2019/314 should not be changed based on the information provided in the applications.

(13) With regard to the proposed addition to the testing methodology of a run-in procedure for the 48 Volt motor-generator, the application does not set out with sufficient precision the details for how such run-in should be performed nor how the run-in effect should be taken into account. As the efficiency of the 48 Volt efficient motor-generator combined with a 48 Volt/12 Volt converter is determined on the basis of the average of the measurement results, any run-in effects, positive or negative, may be adequately taken into account in the final efficiency determination, where necessary by increasing the number of measurements. Against that background, it is not appropriate to complement the testing methodology with an additional specific run-in procedure such as that proposed in the application.

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(14) It is proposed in the request to modify the average speed from the one of the NEDC (33,58 km/h) to the one of the WLTP (46,6 km/h). As the conditions of the WLTP should be taken into account, the average speed should be set accordingly.

(15) It follows implicitly from the 'separate method' that the input voltage for testing the efficiency of the 48 Volt/12 Volt DC/DC converter should be the same as the output voltage of the 48 Volt motor-generator, i.e. 52 Volt. In order to ensure that the efficiency tests are performed in a harmonised way, it is appropriate to clarify in the testing methodology that the value of the input voltage should be set to 52 Volt.

(16) Manufacturers should have the possibility to apply to a type-approval authority for the certification of CO_2 savings from the use of the innovative technology where the conditions laid down in this Decision are met. Manufacturers should for that purpose ensure that the application for certification is accompanied by a verification report from an independent and certified body confirming that the innovative technology complies with the conditions laid down in this Decision and that the savings have been determined in accordance with the testing methodology referred to in this Decision.

(17) In order to facilitate a wider deployment of the innovative technology in new vehicles, a manufacturer should also have the possibility to submit a single application for the certification of the CO_2 savings from several 48 Volt efficient motor generators combined with a 48 Volt/12 Volt DC/DC converter. It is, however, appropriate to ensure that, where that possibility is used, a mechanism is applied that incentivises the deployment of only those innovative technologies that offer the highest CO_2 savings.

(18) It is the responsibility of the type-approval authority to verify thoroughly that the conditions for certifying the CO_2 savings from the use of an innovative technology as specified in this Decision are met. Where the certification is issued, the responsible type-approval authority should ensure that all elements considered for the certification are recorded in a test report and kept together with the verification report and that this information is made available to the Commission on request.

(19) For the purpose of determining the general eco-innovation code to be used in the relevant type-approval documents in accordance with Annexes I, VIII and IX to Directive 2007/46/EC of the European Parliament and of the Council[(12)], it is necessary to attribute an individual code to the innovative technology.

(20) From 2021, manufacturers' compliance with their specific CO_2 emissions targets is to be established on the basis of CO_2 emissions determined in accordance with the WLTP. CO_2 savings from the innovative technology certified by reference to this Decision may therefore be taken into account for the calculation of manufacturers average specific CO_2 emissions from the calendar year 2021 onwards,

HAS ADOPTED THIS DECISION:

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Article 1

Innovative technology

The technology used in a 48 Volt efficient motor-generator combined with a 48 Volt/12 Volt DC/DC converter is approved as an innovative technology within the meaning of Article 11 of Regulation (EU) 2019/631 taking into account that the CO_2 savings it delivers are only partially covered by the standard test procedure set out in Regulation (EU) 2017/1151, and provided that the technology conforms to the following:

(a) it is fitted in passenger cars (M_1) or light commercial vehicles (N_1) powered by internal combustion engines running on petrol or diesel (conventional ICE powered M_1 and N_1 vehicles) or in not-off-vehicle charging hybrid electric vehicles of category M_1 or N_1 for which uncorrected measured fuel consumption and CO_2 emission values may be used in accordance with paragraph 1.1.4 of Appendix 2, Sub-annex 8 to Annex XXI to Regulation (EU) 2017/1151;

(b) its efficiency, which is the product of the efficiency of the 48 Volt motor-generator and the efficiency of the 48 Volt/12 Volt DC/DC converter, determined in accordance with point 2.3 of the Annex, is at least

  (i) 73,8 % for petrol-fuelled vehicles other than turbo-charged;

  (ii) 73,4 % for turbo-charged petrol-fuelled vehicles;

  (iii) 74,2 % for diesel-fuelled vehicles.

Article 2

Application for certification of CO_2 savings

1 A manufacturer may apply to a type-approval authority for certification of the CO_2 savings from the use of the technology approved in accordance with Article 1 ('the innovative technology') by reference to this Decision.

2 The manufacturer shall ensure that the application for the certification is accompanied by a verification report from an independent and certified body confirming that the technology conforms to points (a) and (b) of Article 1.

3 Where CO_2 savings have been certified in accordance with Article 3, the manufacturer shall ensure that the certified CO_2 savings and the eco-innovation code referred to in Article 4(1) are recorded in the certificate of conformity of the vehicles concerned.

Article 3

Certification of CO_2 savings

1 The type-approval authority shall ensure that CO_2 savings achieved from the use of the innovative technology have been determined using the methodology set out in the Annex.

2 Where a manufacturer applies for the certification of the CO_2 savings for more than one type of 48 Volt motor-generator combined with a 48 Volt/12 Volt DC/DC converter in relation to one vehicle version, the type-approval authority shall determine which of the 48 Volt