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*Changes to legislation: There are outstanding changes not yet made to Commission Implementing Decision of 16 July 2014 on the approval of the DENSO efficient alternator as an innovative technology for reducing CO<sub>2</sub> emissions from passenger cars pursuant to Regulation (EC) No 443/2009 of the European Parliament and of the Council and amending Commission Implementing Decision 2013/341/EU (Text with EEA relevance) (2014/465/EU). Any changes that have already been made to the legislation appear in the content and are referenced with annotations. (See end of Document for details) View outstanding changes*

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Commission Implementing Decision of 16 July 2014 on the approval of the DENSO efficient alternator as an innovative technology for reducing CO<sub>2</sub> emissions from passenger cars pursuant to Regulation (EC) No 443/2009 of the European Parliament and of the Council and amending Commission Implementing Decision 2013/341/EU (Text with EEA relevance) (2014/465/EU)

## COMMISSION IMPLEMENTING DECISION

of 16 July 2014

on the approval of the DENSO efficient alternator as an innovative technology for reducing CO<sub>2</sub> emissions from passenger cars pursuant to Regulation (EC) No 443/2009 of the European Parliament and of the Council and amending Commission Implementing Decision 2013/341/EU

(Text with EEA relevance)

(2014/465/EU)

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 emissions 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 Article 12(4) thereof,

Whereas:

- (1) The supplier DENSO Corporation (the 'Applicant') submitted an application for the approval of the DENSO efficient alternator as an innovative technology on 31 October 2013. The completeness of the application was assessed in accordance with Article 4 of Commission Implementing Regulation (EU) No 725/2011<sup>(2)</sup>. The Commission identified certain relevant information as missing in the original application and requested the Applicant to complete it. The Applicant provided the information on 30 January 2014. The application was found to be complete and the period for the Commission's assessment of the application started on the day following the date of official receipt, i.e. 31 January 2014.
- (2) The application has been assessed in accordance with Article 12 of Regulation (EC) No 443/2009, Implementing Regulation (EU) No 725/2011 and the Technical Guidelines for the preparation of applications for the approval of innovative technologies pursuant to Regulation (EC) No 443/2009 (the Technical Guidelines)<sup>(3)</sup>.
- (3) The application refers to the DENSO efficient alternator, for the output classes of 150A, 180A, and 210A. The alternator has an efficiency of at least 77 per cent as determined in accordance with the VDA approach described in point 5.1.2 in Annex I to the Technical Guidelines. That approach makes reference to the testing methodology specified in the

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International standard ISO 8854:2012<sup>(4)</sup>. The Applicant's alternator has an increased efficiency compared to the baseline alternator by reducing the following three losses: rectification losses by optimising the rectification by the use of a 'MOSFET module', i.e. by a use of metal-oxide-semiconductor field-effect transistor; stator iron losses by the use of thin laminated core made by magnetic steel, and stator copper losses by the use of a 'segment conductor', which has higher space factor and shorter coil end. This technology is therefore different from the Valeo Efficient Generation Alternator approved as an eco-innovation by Commission Implementing Decision 2013/341/EU<sup>(5)</sup>.

- (4) The Commission finds that the information provided in the application demonstrates that the conditions and criteria referred to in Article 12 of Regulation (EC) No 443/2009 and in Articles 2 and 4 of Implementing Regulation (EU) No 725/2011 have been met.
- (5) The Applicant has demonstrated that a high efficiency alternator of the kind described in this application did not exceed 3 % of the new passenger cars registered in the reference year 2009.
- (6) In order to determine the CO<sub>2</sub> savings that the innovative technology will deliver when fitted to a vehicle, it is necessary to define the baseline vehicle against which the efficiency of the vehicle equipped with the innovative technology should be compared as provided for in Articles 5 and 8 of Implementing Regulation (EU) No 725/2011. The Commission finds that it is appropriate to consider an alternator with 67 % efficiency as an appropriate baseline technology in the case the innovative technology is fitted on a new vehicle type. Where the DENSO efficient alternator is fitted to an existing vehicle type, the baseline technology should be the alternator of the most recent version of that type placed on the market.
- (7) The Applicant has provided a methodology for testing the CO<sub>2</sub> reductions which includes formulae that are consistent with the formulae described in the Technical Guidelines for the simplified approach with regard to efficient alternators. The Commission considers that the testing methodology will provide testing results that are verifiable, repeatable and comparable and that it is capable of demonstrating in a realistic manner the CO<sub>2</sub> emissions benefits of the innovative technology with strong statistical significance in accordance with Article 6 of Implementing Regulation (EU) No 725/2011.
- (8) The Commission notes that the Applicant in its methodology has used a formula for calculating the standard deviation of the efficiency value of the alternator which increases the accuracy of the result as compared to the formula (1) in the methodology specified in the Annex to Implementing Decision 2013/341/EU. The Applicant's testing methodology and formulae to calculate the CO<sub>2</sub> savings are in all other respects identical to the methodology specified in that Implementing Decision. As a consequence, the Commission considers that the methodology specified in Implementing Decision 2013/341/EU should be used to determine the reduction in CO<sub>2</sub> emissions due to the use of the DENSO efficient alternator. However, in view of the improved accuracy due to the standard deviation calculation proposed by Denso, it is appropriate to adjust formula (1) set out in the Annex to Implementing Decision 2013/341/EU. The adjustment should

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not affect any CO<sub>2</sub> savings certified using the methodology laid down in Implementing Decision 2013/341/EU prior to the entry into force of this Implementing Decision.

- (9) Against that background the Commission finds that the Applicant has demonstrated satisfactorily that the emission reduction achieved by the innovative technology is at least 1 g CO<sub>2</sub>/km.
- (10) The Commission notes that the savings of the innovative technology may be partially demonstrated on the standard test cycle, and the final total savings to be certified should therefore be determined in accordance with the second subparagraph of Article 8(2) of Implementing Regulation (EU) No 725/2011.
- (11) The Commission finds that the verification report has been prepared by the Vehicle Certification Agency (VCA) which is an independent and certified body and that the report supports the findings set out in the application.
- (12) Against that background, the Commission finds that no objections should be raised as regards the approval of the innovative technology in question.
- (13) For the purposes 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<sup>(6)</sup>, the individual code to be used for the innovative technology approved through this Implementing Decision should be specified,
- (14) Any manufacturer wishing to benefit from a reduction of its average specific CO<sub>2</sub> emissions for the purpose of meeting its specific emissions target by means of the CO<sub>2</sub> savings from the use of the innovative technology approved by this Implementing Decision, should in accordance with Article 11(1) of Implementing Regulation (EU) No 725/2011, refer to this Implementing Decision in its application for an EC type-approval certificate for the vehicles concerned,

HAS ADOPTED THIS DECISION:

#### *Article 1*

1 The DENSO efficient alternator having an efficiency of at least 77 per cent by reducing three different losses and intended for use in M1 vehicles is approved as an innovative technology within the meaning of Article 12 of Regulation (EC) No 443/2009.

2 The CO<sub>2</sub> emissions reduction from the use of the alternator referred to in paragraph 1 shall be determined using the methodology set out in the Annex to Implementing Decision 2013/341/EU.

3 In accordance with the second subparagraph of Article 11(2) of Implementing Regulation (EU) No 725/2011, the CO<sub>2</sub> emission reduction determined in accordance with paragraph 2 of this Article, may only be certified and entered into the certificate of conformity and relevant type approval documentation specified in Annexes I, VIII and IX to Directive 2007/46/EC where the reductions are on or above the threshold specified in Article 9(1) of Implementing Regulation (EU) No 725/2011.

4 The individual eco-innovation code to be entered into type approval documentation to be used for the innovative technology approved through this Implementing Decision shall be '6'.

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## *Article 2*

### **Amendment to Implementing Decision 2013/341/EU**

1 In Section 2 of the Annex to Implementing Decision 2013/341/EU, the formula (1) is replaced by the following formula:

$$\Delta\eta_A = \sqrt{\left( (0,25 * S_{1800})^2 + (0,40 * S_{2000})^2 + (0,25 * S_{6000})^2 + (0,1 * S_{10000})^2 \right)}$$

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2 The amendment shall not affect certifications performed in accordance with Article 11 of Implementing Regulation (EU) No 725/2011 prior to the entry into force of this Implementing Decision.

## *Article 3*

This Decision shall enter into force on the 20th day following that of its publication in the *Official Journal of the European Union*.

Done at Brussels, 16 July 2014.

*For the Commission*

*The President*

José Manuel BARROSO

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- (1) [OJ L 140, 5.6.2009, p. 1.](#)
- (2) Commission Implementing Regulation (EU) No 725/2011 of 25 July 2011 establishing a procedure for the approval and certification of innovative technologies for reducing CO<sub>2</sub> emissions from passenger cars pursuant to Regulation (EC) No 443/2009 of the European Parliament and of the Council ([OJ L 194, 26.7.2011, p. 19](#)).
- (3) [http://ec.europa.eu/clima/policies/transport/vehicles/cars/docs/guidelines\\_en.pdf](http://ec.europa.eu/clima/policies/transport/vehicles/cars/docs/guidelines_en.pdf)
- (4) ISO 8854. Road vehicles — Alternators with regulators — Test methods and general requirements. Reference number ISO 8854:2012(E).
- (5) Commission Implementing Decision 2013/341/EU of 27 June 2013 on the approval of the Valeo Efficient Generation Alternator as an innovative technology for reducing CO<sub>2</sub> emissions from passenger cars pursuant to Regulation (EC) No 443/2009 of the European Parliament and of the Council ([OJ L 179, 29.6.2013, p. 98](#)).
- (6) 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) ([OJ L 263, 9.10.2007, p. 1](#)).

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**Changes and effects yet to be applied to :**

- Art. 3 omitted by [S.I. 2019/550 reg. 11\(2\)](#)