Commission Regulation (EU) 2019/1781 of 1 October 2019 laying down ecodesign requirements for electric motors and variable speed drives pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Regulation (EC) No 641/2009 with regard to ecodesign requirements for glandless standalone circulators and glandless circulators integrated in products and repealing Commission Regulation (EC) No 640/2009 (Text with EEA relevance)

COMMISSION REGULATION (EU) 2019/1781

of 1 October 2019

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(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to Article 114 of the Treaty on the Functioning of the European Union,

Having regard to Directive 2009/125/EC of the European Parliament and of the Council of 21 October 2009 establishing a framework for the setting of ecodesign requirements for energy-related products[(1)], and in particular Article 15(1) thereof,

Whereas:

(1) Pursuant to Directive 2009/125/EC, the Commission should set ecodesign requirements for energy-related products which account for significant volumes of sales and trade in the Union and which have a significant environmental impact and present significant potential for improvement through design in terms of their environmental impact, without entailing excessive costs.

(2) The Communication from the Commission COM(2016)773[(2)] (ecodesign working plan established by the Commission in application of Article 16(1) of Directive 2009/125/EC sets out the working priorities under the ecodesign and energy labelling framework for the period 2016-2019. The ecodesign working plan identifies the energy-related product groups to be considered as priorities for the undertaking of preparatory studies and eventual adoption of implementing measures, as well as the review of Commission Regulation (EC) No 640/2009[(3)].

(3) Measures from the Working Plan have an estimated potential to deliver a total in excess of 260 TWh of annual final energy savings in 2030, which is equivalent to reducing greenhouse gas emissions by approximately 100 million tonnes per year in 2030. Electric motors is one of the product groups listed in the Working Plan, with an estimated 10 TWh of annual final energy savings in 2030.

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(4) The Commission established ecodesign requirements for electric motors in Regulation (EC) No 640/2009 and pursuant to that Regulation, the Commission shall review that Regulation in the light of technological progress on both motors and drives.

(5) Pursuant to Article 7 of Regulation (EC) No 640/2009, the Commission has reviewed Regulation (EC) No 640/2009 and analysed the technical, environmental and economic aspects of electric motors and drives. The review was carried out in close cooperation with stakeholders and interested parties from the Union and third countries. Its results were made public and presented to the Consultation Forum established pursuant to Article 18 of Directive 2009/125/EC.

(6) The review study shows that electric motor driven systems use about half the electricity produced in the Union. It is estimated that electric motors converted 1 425 TWh of electricity into mechanical energy and heat in 2015, corresponding to 560 Mt of CO_2-equivalent emissions. This value is expected to rise to around 1 470 TWh by 2020 and to about 1 500 TWh by 2030.

(7) The review also shows that variable speed drives are placed on the Union's market in large quantities, helping to control motor speed and increase energy efficiency of motor systems, with their use-phase energy consumption being the most significant environmental aspect of all life cycle phases. In 2015, variable speed drives converted about 265 TWh of electricity from the grid into electricity with a frequency suited for the driven application; this corresponds to 105 Mt of CO_2 emissions. This value is expected to rise to around 380 TWh by 2020 and to about 570 TWh by 2030.

(8) The review indicates that Regulation (EC) No 640/2009 would save 57 TWh annually by 2020 and 102 TWh annually by 2030. As the provisions of that Regulation are being maintained, these savings will also continue to materialise.

(9) There is significant additional scope for improving these motor driven systems' energy efficiency cost-effectively. One cost-effective way to do so is by making motors more energy-efficient, including motors not covered by Regulation (EC) No 640/2009, and using energy-efficient variable speed drives. This implies that ecodesign requirements for electric motors should be adjusted and ecodesign requirements set for variable speed drives, to realise their full potential for cost-effective energy efficiency.

(10) Ecodesign requirements should also include product information requirements that will help potential buyers make the most appropriate decision and make it easier for Member States to perform market surveillance.

(11) Many motors are integrated in other products. To maximise cost-efficient energy saving, this Regulation should apply to such motors, provided that their efficiency can be tested separately.

(12) The environmental aspect of products in the scope of this Regulation that have been identified as significant for the purposes of this Regulation is energy consumption in the use phase.

(13) Electric motors are used in many different types of products, such as pumps, fans or machine tools, and under many different operating conditions. The energy use of motor-

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driven systems can be reduced if motors in variable speed and load applications are equipped with variable speed drives, but also if these drives have their own minimum energy efficiency requirements. In fixed speed (constant load) applications, a variable speed drive induces additional costs and energy losses. The use of a variable speed drive should not, therefore, be mandatory under this Regulation.

(14) Improvements in the electricity consumption of electric motors and variable speed drives should be achieved by applying existing, non-proprietary and cost-effective technologies that can reduce the total combined costs of purchasing and operating them.

(15) Ecodesign requirements should harmonise energy efficiency requirements for electric motors and variable speed drives throughout the Union, thus contributing to the smooth operation of the internal market and helping to improve these products' environmental performance.

(16) Manufacturers should have enough time to redesign or adapt their products where needed. The timing should be such as to minimise negative impact on the functionalities of electric motors or variable speed drives. It should also take account of cost implications for manufacturers, including small and medium-sized enterprises, while ensuring that the objectives pursued by this Regulation are achieved in good time.

(17) The inclusion of motors not covered by Regulation (EC) No 640/2009, notably smaller and larger motors, in conjunction with updated minimum energy efficiency requirements that are in line with international standards and technological progress, and together with the inclusion of variable speed drives, should increase the market penetration of electric motors and variable speed drives with an improved life-cycle environmental impact. This should result in additional estimated net electricity savings of 10 TWh per year, and should reduce net greenhouse gas emissions by 3 Mt CO_2 equivalent annually by 2030, compared with the situation that would prevail if no additional measures were taken.

(18) Although the environmental impacts of medium voltage motors are relevant, for the time being no classification exists for the energy efficiency of electric motors with a rated voltage above 1 000 V. Once such a classification is developed, the possibility of setting minimum requirements for medium voltage motors should be reassessed.

(19) Although the environmental impacts of submersible motors are relevant, there is, at the present time, no test standard that defines energy efficiency classes for these motors. Once such a test standard and classification is developed, the possibility of setting minimum requirements for submersible motors should be reassessed.

(20) The Commission communication on the circular economy[(4)] and the Communication on the ecodesign working plan[(5)] underline the importance of using the ecodesign framework to support the move towards a more resource efficient and circular economy. This Regulation should therefore, in order to cut the costs of repairing products containing motors that were placed on the market before the entry into force of the Regulation, or to avoid scrapping them early if they cannot be repaired, provide that motors supplied as spare parts be exempted for a given period. This is meant to avoid the problem that arises if it is impossible to replace a non-compliant motor by a compliant

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one without disproportionate costs to the end-user. If such motors are intended for the repair of products for which specific availability of spare parts provisions covering motors have been set in other ecodesign regulations, such specific provisions have precedence over the spare parts provisions in this Regulation.

(21) In particular situations, for instance, where safety, functionality or disproportionate costs are at stake, certain motors or variable speed drives (VSDs) should be exempted from efficiency requirements. However, this Regulation should nonetheless cover such products as regards product information requirements, such as information concerning disassembly, recycling or disposal at end-of-life, or other information useful for market surveillance purposes.

(22) The relevant product parameters should be determined using reliable, accurate and reproducible methods. These methods should take into account the recognised state-of-the-art methods including, where available, harmonised standards adopted by the European standardisation organisations, as listed in Annex I to Regulation (EU) No 1025/2012 of the European Parliament and of the Council[(6)].

(23) An appropriate standard to determine the specific duty types S1, S3 or S6 is IEC 60034-1:2017. Appropriate standards to determine Ex eb increased safety motors and other explosion-protected motors are IEC/EN 60079-7:2015, IEC/EN 60079-31:2014 or IEC/EN 60079-1:2014.

(24) In accordance with Article 8(2) of Directive 2009/125/EC, this Regulation should specify the applicable conformity assessment procedures.

(25) Compliance of products should be demonstrated either when the product is placed on the market or when it is put into service, not both.

(26) To facilitate compliance checks, manufacturers, importers or authorised representatives should provide the information in the technical documentation referred to in Annexes IV and V to Directive 2009/125/EC, insofar as that information relates to the requirements laid down in this Regulation.

(27) To improve the effectiveness of this Regulation and to protect consumers, products that automatically alter their performance in test conditions to improve the declared parameters should be prohibited from being placed on the market or put into service.

(28) To facilitate verification testing, market surveillance authorities should be allowed to test, or witness the testing of, larger motors at premises such as those of the manufacturer.

(29) In addition to the legally binding requirements laid down in this Regulation, benchmarks for best available technologies should be identified to make information on product's environmental performance over their life-cycle subject to this Regulation widely available and easily accessible in accordance with Directive 2009/125/EC, Annex I, part 3, point (2).

(30) A review of this Regulation should assess the appropriateness and effectiveness of its provisions in achieving its goals. The timing of the review should be sufficient for all provisions to be implemented and show an effect on the market.

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(31) Regulation (EC) No 640/2009 should therefore be repealed.

(32) Ecodesign requirements on circulators integrated in boilers are set out in Commission Regulation (EC) No 641/2009[7]. To ensure that installed boilers with a defective circulator can be repaired within their technical lifetime, the exemption in that regulation for circulators provided as a spare part for existing boilers should be extended.

(33) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 19(1) of Directive 2009/125/EC,

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter

This Regulation establishes ecodesign requirements for the placing on the market or the putting into service of electric motors and variable speed drives, including where they are integrated in other products.

Article 2

Scope

(1) This Regulation applies to the following products:

(a) induction electric motors without brushes, commutators, slip rings or electrical connections to the rotor, rated for operation on a 50 Hz, 60 Hz or 50/60 Hz sinusoidal voltage, that:

(i) have two, four, six or eight poles;

(ii) have a rated voltage U_N above 50 V and up to and including 1 000 V;

(iii) have a rated power output P_N from 0,12 kW up to and including 1 000 kW;

(iv) are rated on the basis of continuous duty operation; and

(v) are rated for direct on-line operation;

(b) variable speed drives with 3 phases input that:

(i) are rated for operating with one motor refered to in point (a), within the 0,12 kW-1 000 kW motor rated output range;

(ii) have a rated voltage above 100 V and up to and including 1 000 V AC;

(iii) have only one AC voltage output.

(2) The requirements in section 1, and points (1), (2), (5) to (11), and (13) of section 2 of Annex I shall not apply to the following motors: