



Brussels, **XXX**  
[...](2018) **XXX** draft

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

**of **XXX****

**laying down ecodesign requirements for refrigerating appliances pursuant to  
Directive 2009/125/EC of the European Parliament and of the Council**

**and repealing Commission Regulation (EC) No 643/2009**

(Text with EEA relevance)

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Directive 2009/125/EC of the European Parliament and of the Council**

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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<sup>1</sup>, 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 presenting significant potential for improvement through design in terms of their environmental impact, without entailing excessive costs.
- (2) The Ecodesign Working Plan 2016-2019 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 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 the current regulations.
- (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. Refrigerating appliances is one of the product groups listed in the Working Plan, with an estimated 10 TWh of annual final energy savings in 2030.
- (4) The Commission established ecodesign requirements for household refrigerating appliances in Commission Regulation (EU) No 643/2009<sup>2</sup> and pursuant to that Regulation, the Commission should regularly review the Regulation in the light of technological progress.

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<sup>1</sup> 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 (OJ L 285, 31.10.2009, p. 10).

<sup>2</sup> Commission Regulation (EU) No 643/2009 of 22 July 2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household refrigerating appliances (OJ L 193, 23.07.2009, p. 53).

- (5) The Commission has reviewed (EU) No 643/2009 and analysed the technical, environmental and economic aspects of refrigerating appliances as well as real-life user behaviour. The review was carried out in close cooperation with stakeholders and interested parties from the Union and third countries. The results of the review were made public and presented to the Consultation Forum established by Article 18 of Directive 2009/125/EC.
- (6) The review shows the benefit of continued and improved requirements, adapted to the technological progress of refrigerating appliances. Specifically, it shows that energy efficiency requirements for wine storage appliances can be introduced and that correction factors can be eliminated or significantly reduced.
- (7) The annual energy consumption of products subject to this Regulation in the Union was estimated at 86 TWh in 2015, corresponding to 34 million tonnes of CO<sub>2</sub> equivalent greenhouse gas emissions. The projected energy consumption of refrigerating appliances in a business-as-usual scenario is projected to decrease by 2030. However, this reduction is expected to slow down unless the existing ecodesign requirements are updated.
- (8) The environmental aspects of the refrigerating appliances in the scope of this Regulation that have been identified as significant for the purposes of this Regulation are energy consumption in the use phase, increased energy use over the product life due to leaking door gaskets, poor reparability and suboptimal food preservation options resulting in avoidable food waste.
- (9) The Commission Communications on the circular economy<sup>3</sup> and the Communication on the ecodesign working plan<sup>4</sup> underline the importance of using the ecodesign framework to support the move towards a more resource efficient and circular economy. Directive 2012/19/EU of the European Parliament and of the Council<sup>5</sup> refers to Directive 2009/125/EC which indicates that ecodesign requirements should facilitate the re-use, dismantling and recovery of waste electrical and electronic equipment (WEEE) by tackling the issues upstream. This Regulation should therefore lay down appropriate requirements for this.
- (10) Refrigerating appliances with a direct sales function will be subject to a separate ecodesign regulation which is under preparation at the time of publication of this Regulation.
- (11) Chest freezers, including professional chest freezers, should be in the scope of this Regulation, as they are out of the scope of the Commission Regulation (EU) 2015/1095<sup>6</sup> and can be used in other environments than professional environments.
- (12) Wine storage appliances and low noise refrigerating appliances (such as minibars), including those with transparent doors, do not have a direct sales function. Wine bars

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<sup>3</sup> Communication From The Commission To The European Parliament, The Council, The European Economic And Social Committee And The Committee Of The Regions Closing The Loop - An EU Action Plan For The Circular Economy (COM/2015/0614 final of 02.12/2015)

<sup>4</sup> Communication from the Commission Ecodesign Working Plan. COM(2016) 773 final, Brussels, 30 November 2016. (COM(2016) 773 final of 30.11.2016)

<sup>5</sup> Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE) (OJ L 197, 24.7.2012, p. 38)

<sup>6</sup> Commission Regulation (EU) 2015/1095 of 5 May 2015 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for professional refrigerated storage cabinets, blast cabinets, condensing units and process chillers. (OJ L 177, 8.7.2015, p. 19).

are usually either used in household environments or in restaurants, whereas mini bars are usually used in hotel rooms. Therefore, wine storage appliances and mini bars, including those with transparent doors should be covered by this Regulation.

- (13) The relevant product parameters should be measured using reliable, accurate and reproducible methods. Those methods should take into account recognised state-of-the-art measurement methods including, where available, harmonised standards adopted by the European standardisation bodies, as listed in Annex I to Regulation (EU) No 1025/2012 of the European Parliament and of the Council<sup>7</sup>.
- (14) In accordance with Article 8 of Directive 2009/125/EC, this Regulation should specify the applicable conformity assessment procedures.
- (15) To facilitate compliance checks, manufacturers should provide information in the technical documentation referred to in Annexes IV and V to Directive 2009/125/EC in so far as that information relates to the requirements laid down in this Regulation.
- (16) For market surveillance purposes, manufacturers should be allowed to refer to the product database if the technical documentation as per Regulation *[OP – please enter the Regulation number of the Energy Labelling Regulation for refrigerating appliances]* contains the same information.
- (17) 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.
- (18) In addition to the legally binding requirements laid down in this Regulation, indicative benchmarks for best available technologies should be identified to make information on the products' environmental performance over their life cycle subject to this Regulation widely available and easily accessible, in accordance with Directive 2009/125/EC, Annex 1, part 3, point (2).
- (19) A review of this Regulation should assess the appropriateness and effectiveness of its provisions in achieving its goals. The timing of the review should allow for all provisions to be implemented and show an effect on the market.
- (20) Regulation (EU) No 643/2009 should therefore be repealed.
- (21) 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 and scope**

1. This Regulation establishes ecodesign requirements for the placing on the market of and the putting into service of electric mains-operated refrigerating appliances with a volume of more than 10 litres and less than or equal to 1500 litres.
2. This Regulation does not apply to:

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<sup>7</sup> Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council (OJ L 316, 14.11.2012, p. 12)

- (a) products covered by Commission Regulation (EU) 2015/1095 with regard to ecodesign requirements for professional refrigerated storage cabinets, blast cabinets, condensing units and process chillers;
- (b) refrigerating appliances with a direct sales function;
- (c) mobile refrigerating appliances.

*Article 2*  
**Definitions**

For the purpose of this Regulation, the following definitions shall apply:

- (1) ‘mains’ or ‘electric mains’ means the electricity supply from the grid of 230 ( $\pm 10$  %) volt of alternating current at 50 Hz;
- (2) ‘refrigerating appliance’ means an insulated cabinet with one or more compartments that are controlled at specific temperatures, cooled by natural or forced convection whereby the cooling is obtained by one or more energy consuming means;
- (3) ‘compartment’ means an enclosed space within a refrigerating appliance, which is directly accessible through one or more external doors and may itself be divided into sub-compartments. For the purpose of this Regulation, unless specified otherwise, ‘compartment’ refers to both compartments and sub-compartments;
- (4) ‘external door’ is the part of a cabinet that can be moved or removed to at least allow the load to be moved from the exterior to the interior or from the interior to the exterior of the cabinet;
- (5) ‘sub-compartment’ means a permanent enclosed space in a compartment having a different operating temperature range from the compartment in which it is located;
- (6) ‘volume’ ( $V$ ) means the volume of the space within the inside liner of the refrigerating appliance, equal to the sum of the compartment volumes, in  $\text{dm}^3$  or litres;
- (7) ‘compartment volume’ ( $V_c$ ) means the volume of the space within the inside liner of the compartment, expressed in  $\text{dm}^3$  or litres;
- (8) ‘refrigerating appliance with a direct sales function’ means an refrigerating appliance used for the functions of displaying and selling items at specified temperatures below the ambient temperature to customers, accessible directly through open sides or via one or more doors or drawers, or both, including cabinets with areas used for storage or assisted serving of items not accessible by the customers;
- (9) ‘mobile refrigerating appliance’ means a refrigerating appliance used in vehicles or any other means of transport where there is no access to the mains electricity grid, that:
  - (a) can operate reliably and safely when exposed to mechanical vibrations and a tilted position; and
  - (b) uses extra low-voltage electricity ( $<120\text{V DC}$ ) or fossil fuel or both as the energy source for the refrigeration functionality, including a refrigerating appliance that, in addition to extra low voltage electricity or fossil fuel, or both, can be electric mains operated.

- (10) ‘energy efficiency index’ (EEI) means an index number for the relative energy efficiency of a refrigeration appliance expressed in percentage, calculated according to point 5 of Annex III;
- (11) ‘low noise refrigerating appliance’ means a refrigerating appliance with airborne acoustical noise emission lower than 23 dB(A);
- (12) ‘airborne acoustical noise emission’ means the sound power level of the refrigerating appliance, expressed in dB(A) re 1 pW (A-weighted);
- (13) ‘wine storage appliance’ means a dedicated refrigerating appliance for the storage of wine, with precision temperature control for the storage conditions and target temperature, and equipped with anti-vibration measures;
- (14) ‘dedicated refrigerating appliance’ means a refrigerating appliance with only one type of compartment;
- (15) ‘target temperature’ ( $T_c$ ) means the reference temperature inside a compartment  $c$  during testing and relates to the maximum temperature for testing energy consumption expressed as the average over time and over a set of sensors;
- (16) ‘refrigerator-freezer’ means a combi appliance that has at least one freezer compartment and at least one fresh food compartment;
- (17) ‘fresh food compartment’ means a compartment with a target temperature of 4 °C and storage conditions ranging from 0 °C and 8 °C;
- (18) ‘freezer compartment’ or ‘4-star compartment’ means a compartment with a target temperature and storage conditions of -18 °C and which fulfils the requirements for the specific freezing capacity;
- (19) ‘combi appliance’ means a refrigerating appliance that has more than one compartment type. An appliance with a 3- or 4-star compartment with a 2-star section or sub-compartment is not a combi appliance;
- (20) ‘compartment type’ means the declared compartment type in accordance with the refrigerating performance parameters  $T_{min}$ ,  $T_{max}$ ,  $T_c$  and others;
- (21) ‘minimum temperature’ ( $T_{min}$ ) means the minimum temperature inside a compartment during storage testing;
- (22) ‘maximum temperature’ ( $T_{max}$ ) means the maximum temperature inside a compartment during storage testing;
- (23) ‘3-star compartment’ means a compartment with a target temperature and storage conditions of -18 °C;
- (24) ‘2-star section’ means part of a 3-star or 4-star compartment which does not have its own individual access door or lid and in which the temperature is not warmer than -12 °C;
- (25) ‘2-star compartment’ means a compartment with a target temperature and storage conditions of -12 °C;
- (26) ‘specific freezing capacity’ (x) means the rate of heat extraction by an appropriately loaded compartment to bring the temperature of the light load from +25 to -18 °C at an ambient temperature of 25 °C, expressed in kg/12h;

- (27) ‘ambient controlled anti-condensation heater’ means a heater which prevent condensation on the refrigeration appliance and where the heating capacity depends on either the ambient temperature or the ambient humidity or both;
- (28) ‘anti-condensation heater’ means a heater which prevents condensation on the refrigeration appliance;
- (29) ‘auxiliary energy’ ( $E_{aux}$ ) means the energy used by auxiliary devices or functions that affect the energy consumption of a refrigerating appliance and where the actual energy consumption of the auxiliary device or function depends on the conditions of use or operation in kWh/a.

For the purposes of the Annexes, additional definitions are set out in Annex I.

#### *Article 3*

### **Ecodesign requirements**

Refrigerating appliances shall comply with the ecodesign requirements set out in Annex II from the dates indicated therein.

#### *Article 4*

### **Conformity assessment**

1. The conformity assessment procedure referred to in Article 8 of Directive 2009/125/EC shall be the internal design control system set out in Annex IV to that Directive or the management system set out in Annex V to that Directive.
2. For the purposes of conformity assessment pursuant to Article 8 of Directive 2009/125/EC, the technical documentation file shall contain a copy of the product information provided in accordance with Annex II, point 2, and the results of the calculations set out in Annex III to this Regulation.
3. Where the information included in the technical documentation for a particular model has been obtained by calculation on the basis of design, or extrapolation from another model, or both, the documentation shall include details of such calculations or extrapolations, or both, and of tests carried out by manufacturers to verify the accuracy of the calculations.

#### *Article 5*

### **Verification procedure for market surveillance purposes**

Member States shall apply the verification procedure laid down in Annex IV when performing the market surveillance checks referred to in Article 3(2) of Directive 2009/125/EC.

#### *Article 6*

### **Circumvention**

The manufacturer or importer shall not place on the market products designed in such a way that a model's performance is automatically altered under test conditions with the aim of reaching a more favourable level for any of the parameters declared by the manufacturer in the technical documentation or included in any of the documentation provided with the product.

Where applicable, the energy consumption of the product shall not increase after a software or firmware update when measured with the same test standard originally used for the declaration of conformity, except with explicit consent of the end-user prior to update.

#### *Article 7*

#### **Indicative benchmarks**

The indicative benchmarks for the best-performing products and technologies available on the market at the time of adopting this Regulation are set out in Annex V.

#### *Article 8*

#### **Review**

The Commission shall review this Regulation in the light of technological progress and present the results of this assessment, including, if appropriate, a draft revision proposal, to the Consultation Forum *[OP please insert date – 5 years after its entry into force]*.

This review shall in particular assess:

- (a) the energy efficiency index requirements for low noise refrigerating appliances and for wine storage appliances;
- (b) the appropriateness to set energy efficiency index requirements for low noise refrigerator-freezers;
- (c) the tolerances for energy use and specific freezing capacity, the appropriateness of a mandatory sound signal for long door openings;
- (d) the compensation factors and the modelling parameters;
- (e) the appropriateness to set additional resource efficiency requirements for products in accordance with the principles of the circular economy;
- (f) the appropriateness of including other auxiliary devices or functions than the ambient controlled anti-condensation heater in the determination of the auxiliary energy.

#### *Article 9*

#### **Repeal**

Commission Regulation (EC) No 643/2009 shall be repealed with effect from 1 April 2021.

#### *Article 10*

#### **Entry into force and application**

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

It shall apply from 1 April 2021.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

*For the Commission*  
Jean-Claude JUNCKER  
*The President*