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

of **XXX**

laying down ecodesign requirements for refrigerating appliances with a direct sales function pursuant to Directive 2009/125/EC of the European Parliament and of the Council

(Text with EEA relevance)

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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 products¹, and in particular point 1 of Article 15 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 Communication from the Commission COM(2016)773 final² (ecodesign working plan) established by the Commission in application of point 1 of Article 16 of Directive 2009/125/EC sets out the working priorities under the ecodesign and energy labelling framework for the period 2016-2019. Refrigerating appliances with a direct sales function are among the energy-related product groups to be considered as priorities for the undertaking of preparatory studies and eventual adoption of measures.
- (3) Measures from the ecodesign 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 with a direct sales function is one of the product groups listed in the Working Plan, with an estimated 48 TWh of annual final energy savings in 2030.
- (4) The Commission has carried out two preparatory studies covering the technical, environmental and economic characteristics of refrigerating appliances with a direct sales function typically used in the Union. The studies were carried out in close cooperation with stakeholders and interested parties from the Union and third

¹ OJ L 285, 31.10.2009, p. 10.

² Communication from the Commission. Ecodesign working plan 2016-2019 (COM(2016)773 final, Brussels, 30.11.2016).

countries. The results of the studies were made public and presented to the Consultation Forum established by Article 18 of Directive 2009/125/EC.

- (5) This Regulation should apply to the following refrigerating appliances with a direct sales function: supermarket refrigerating (freezer or refrigerator) cabinets, beverage coolers, small ice-cream freezers, gelato-scooping cabinets and refrigerated vending machines.
- (6) The environmental aspect of refrigerating appliances with a direct sales function that has been identified as most significant for the purposes of this Regulation is energy consumption in the use phase. This energy consumption could be reduced, without increasing the combined costs of purchasing and operating these products, using cost-effective non-proprietary technologies. Direct emissions from refrigerants were also identified as relevant.
- (7) As refrigerants are subject to Regulation (EU) No 517/2014 of the European Parliament and of the Council³, no specific requirements on refrigerants are set in this Regulation. Furthermore, an increasing use of low global warming potential refrigerants in the last decade in the Union market indicates that the manufacturers are already undertaking a gradual substitution towards refrigerants with reduced impact on the environment, without the need of additional policy intervention by means of ecodesign.
- (8) The annual energy consumption of products subject to this Regulation in the Union was estimated at 65 TWh in 2015, corresponding to 26 million tonnes of CO₂ equivalent. The energy consumption of refrigerating appliances with a direct sales function in a business-as-usual scenario is projected to decrease by 2030. However, this decrease is expected to slow down unless ecodesign requirements are set.
- (9) This Regulation applies to products with varying technical characteristics and functionalities. For this reason energy efficiency requirements are set according to the functionality of the appliances. In this functionality approach, a minimum breakdown of refrigerating appliances with a direct sales function categories is proposed, this will bring clear signals to the markets about more/less energy efficient refrigerating appliances with a direct sales function types with the same function. Inefficient refrigerating appliances with a direct sales types will have more difficulties to reach a certain energy labelling class or may even not meet the minimum energy requirements.
- (10) The Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions COM(2015)0614 final⁴ (circular economy action plan) and on the ecodesign working plan 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 the Council⁵ 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

³ Regulation (EC) No 842/2006 of the European Parliament and of the Council of 17 May 2006 on certain fluorinated greenhouse gases (OJ L 161, 14.6.2006, p. 1).

⁴ 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, Brussels, 02.12/2015).

⁵ 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).

upstream. This Regulation should therefore lay down appropriate requirements for this.

- (11) 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 Council⁶.
- (12) In accordance with Article 8 of Directive 2009/125/EC, this Regulation should specify the applicable conformity assessment procedures.
- (13) 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.
- (14) The terminology and testing methods of this Regulation are consistent with the terminology and testing methods adopted in EN 16901, EN 16902, EN 50597 and EN ISO 23953-2.
- (15) For market surveillance purposes, manufacturers should be allowed to refer to the product database if the technical documentation as per Commission Delegated Regulation (EU) *[OP – please enter the references of the Regulation of the Energy Labelling Regulation for refrigerating appliances with a direct sales function]* contains the same information.
- (16) 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.
- (17) 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 lifecycle subject to this Regulation widely available and easily accessible, in accordance with Directive 2009/125/EC, point 3(2) of Annex I.
- (18) 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.
- (19) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by point 1 of Article 19 of Directive 2009/125/EC.

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter and scope

1. This Regulation establishes ecodesign requirements for placing on the market or putting into service of electric mains-operated refrigerated appliances with a direct

⁶ 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).

sales function, including remote and integral cabinets, and including appliances sold for refrigeration of items other than foodstuff.

2. This Regulation does not apply to:

- (a) refrigerated appliances with a direct sales function that are only powered by energy sources other than electricity;
- (b) refrigerating appliances with a direct sales function other than compression-type refrigerating appliances, such as absorption-type and thermoelectric-type refrigerating appliances;
- (c) the part of the refrigeration system, typically the condensing unit, placed outside the refrigerated cabinets with direct sales function in remote cabinets;
- (d) refrigerating appliances with a direct sales function specifically tested and approved for carrying out food processing such as ice-cream makers or microwave-equipped refrigerated vending machines, and excluding refrigerating appliances with a direct sales function equipped with one compartment specifically designed for carrying out food processing which is equivalent to less than 20 % of the net volume;
- (e) refrigerating appliances with a direct sales function specifically tested and approved for the storage of medicines and scientific samples;
- (f) refrigerating appliances with a direct sales function for the sale and display of live foodstuff, such as refrigerating appliances for the sale and display of living fish and shellfish, refrigerated aquaria and water tanks;
- (g) custom-made refrigerating appliances with a direct sales function made on a one-off basis according to individual customer specification and not equivalent to other refrigerating appliances with direct sales function as defined in Annex I;
- (h) built-in cabinets;
- (i) vertical static-air cabinets;
- (j) saladettes;
- (k) chilled horizontal serve-over counters with integrated chilled storage;
- (l) back-wall cabinets in assisted service, placed behind the serving personnel, with added back storage;
- (m) refrigerating appliances with a direct sales function that have no integrated system for producing cooling and function by ducting chilled air that is produced by an external air chiller unit;
- (n) corner cabinets;
- (o) products covered by Commission Regulation (EU) 2015/1095⁷;
- (p) refrigerated drum vending machines;
- (q) wine storage appliances and low noise appliances.

⁷

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).

Article 2
Definitions

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

1. 'electric mains' means the electricity supply from the grid of 230 (± 10 %) volt (V) of alternating current at 50 hertz (Hz);
2. 'refrigerating appliance with a direct sales function' means an insulated cabinet with one or more compartments that are controlled at specific temperatures, cooled by natural or forced convection through one or more energy consuming means and is intended for displaying and selling items to customers, accessible directly through open sides or through one or more doors, and/or drawers, including refrigerating appliances with a direct sales function with areas used for storage or assisted serving of items not accessible by the customers;
3. 'remote cabinet' means a refrigerating appliance with a direct sales function which consists of a factory-made assembly of components that in order to function as a refrigerating appliance, needs:
 - (a) input of electricity; and
 - (b) to be connected additionally to remote components (condensing unit and/or compressor and/or water condensed unit) which are not an integral part of the cabinet;
4. 'integral cabinet' means a refrigerating appliance with a direct sales function that does not need to be connected to remote components in order to function as a refrigerator or freezer, because it has an integral refrigeration system (i.e. incorporating a compressor and condensing unit);
5. 'refrigerator' means a refrigerating appliance with a direct sales function that maintains the temperature of the products stored in the cabinet at chilled operating temperature;
6. 'chilled operating temperature' means that the temperature of products stored in the compartment or cabinet is continuously maintained between -3,5 degrees celcius ($^{\circ}\text{C}$) and 15 degrees celcius ($^{\circ}\text{C}$) for appliances equipped with energy management systems for saving energy (EMD or EMS) and between -3,5 degrees celcius ($^{\circ}\text{C}$) and 10 degrees celcius ($^{\circ}\text{C}$) for appliances not equipped with EMD or EMS;
7. 'freezer' means a refrigerating appliance with a direct sales function that maintains the temperature of the products stored in the cabinet at frozen operating temperature;
8. 'frozen operating temperature' means that the temperature of products stored in the compartment or cabinet is continuously maintained below -12 degrees celcius ($^{\circ}\text{C}$);
9. 'foodstuff' means food, ingredients, beverages, and other items primarily intended for consumption which require refrigeration at specified temperatures;
10. 'compression-type refrigerating appliance' means a refrigerating appliance with a direct sales function in which refrigeration is effected by means of a motor-driven compressor;
11. 'absorption-type refrigerating appliance' means a refrigerating appliance with a direct sales function in which refrigeration is effected by means of an absorption process using heat as the energy source;

12. 'thermoelectric-type refrigerating appliance' means a refrigerating appliance with a direct sales function in which refrigeration is effected by means of a thermoelectric process;
13. 'condensing unit' means a product integrating at least one electrically driven compressor and one condenser, capable of cooling down and continuously maintaining low or medium temperature inside a refrigerated appliance or system, using a vapour compression cycle once connected to an evaporator and an expansion device, as defined in Regulation (EU) 2015/1095;
14. 'specifically tested and approved' means that the product complies with all the following requirements:
 - (1) it has been specifically tested for the mentioned operating condition or application, according to the European legislation mentioned or related acts, relevant Member State legislation, and/or relevant European or international standards;
 - (2) it is accompanied by evidence, in the form of a certificate, a type approval mark, a test report or other documentation, that the product has been specifically approved for the mentioned operating condition or application;
 - (3) it is placed on the market specifically for the mentioned operating condition or application, as evidenced at least by the technical documentation, information on the packaging and any advertising or marketing materials;
15. 'net volume' means the part of the gross volume of any compartment which is left after deduction of the volume of components and spaces unusable for the storage and display of items, in cubic decimetre (dm³) or litre (l);
16. 'gross volume' means the volume within the inside liner of the compartment with an external door, without internal fittings and with doors or lids closed, in dm³ or litres;
17. 'built-in cabinet' means a refrigerating appliance with a direct sales function that is designed, tested and marketed exclusively to be:
 - (a) installed in cabinetry or encased (top, bottom and sides) by panels;
 - (b) securely fastened to the sides, top or floor of the cabinetry or panels; and
 - (c) equipped with an integral factory-finished face or to be fitted with a custom front panel;
18. 'vertical static-air cabinet' means a vertical cabinet without internal forced-air circulation; a single static-air compartment within the cabinet is not sufficient to designate the refrigerating appliance with a direct sales function as a static-air cabinet;
19. 'vertical cabinet' means a refrigerating appliance with a direct sales function with a vertical display opening from the front;
20. 'saladette' means a refrigerating appliance with a direct sales function with one or more doors or drawer fronts in the vertical plane that has cut-outs in the top surface into which temporary storage bins can be inserted for easy-access storage of foodstuff (e.g. pizza toppings and salad items);
21. 'horizontal serve-over counter' means a horizontal cabinet for assisted service;
22. 'horizontal cabinet' means a refrigerating appliance with a direct sales function with horizontal display opening on its top and accessible from above;

23. ‘corner cabinet’ means a refrigerating appliance with a direct sales function used to achieve geometrical continuity between two linear cabinets that are at an angle to each other and/or that form a curve. A corner cabinet does not have a recognisable longitudinal axis or length since it consists only of a filling shape (wedge or similar) and is not designed to function as a stand-alone refrigerated unit. The two ends of the corner cabinet are inclined at an angle between 30 ° and 90 °;
24. ‘refrigerated drum vending machines’ means a refrigerated vending machine with rotating drums each divided in partitions, in which the products are placed horizontally, and where the products are retrieved through individual delivery doors;
25. ‘refrigerated vending machine’ means a refrigerating appliance with a direct sales function designed to accept consumer payments or tokens to dispense chilled items without on-site labour intervention;
26. ‘wine storage appliance’ means refrigerating appliance with only one type of compartment for the storage of wine, with precision temperature control for the storage conditions and target temperature, and equipped with anti-vibration measures, as defined in Commission Regulation (EU) *[OP – please insert the references of the Ecodesign Regulation for refrigerating appliances]*⁸;
27. ‘compartment’ means an enclosed space within a cabinet, which is directly accessible through one or more external doors or drawers 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;
28. ‘external door’ is the part of a cabinet that can be moved or removed to at least allow inserting the load from the exterior to the interior or extracting the load from the interior to the exterior of the cabinet;
29. ‘sub-compartment’ means a permanent enclosed space within a compartment having a different operating temperature range from the compartment within which it is located;
30. ‘low noise refrigerating appliance’ means a refrigerating appliance with airborne acoustical noise emission lower than 23 A-weighted decibel (dB(A)), as defined in Commission Regulation (EU) *[OP – please insert the references of the Ecodesign Regulation for refrigerating appliances]*.

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

Article 3

Ecodesign requirements

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

⁸ Commission Regulation (EU) *[OP – please enter the number of the Regulation]* of *[OP-please enter the date]* 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 364/2009 (*[OP – please enter the references to the OJ]*).

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 shall contain a copy of the product information provided in accordance with point 2 of Annex II 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 set out in Annex IV to this Regulation when performing the market surveillance checks referred to in point 2 of Article 3 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.

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 no later than *[OP please enter date - five years after its entry into force]*.

Article 9

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 September 2020.

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



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

ANNEXES 1 to 5

ANNEXES

to the

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

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

ANNEX I
Definitions applicable for the Annexes

The following definitions shall apply:

- (1) ‘energy efficiency index’ (EEI) means an index number for the relative energy efficiency of a refrigeration appliance with a direct sales function expressed in percentage, calculated in accordance with point 2 of Annex III;
- (2) ‘vacuum insulation panel (VIP)’ means an insulation panel consisting of a firm, highly-porous material encased in a thin, gas-tight outer envelope, from which the gases are evacuated and which is sealed to prevent outside gases from entering the panel;
- (3) ‘spare part’ means a separate part that can replace a part with the same or similar function in a product;
- (4) ‘door gasket’ means a mechanical seal which fills the space between the door and the cabinet of the refrigerating appliance with a direct sales function to prevent leakage from the cabinet to the outdoor air;
- (5) ‘blowing agent’ means the gas trapped in the bubbles forming the insulation panel (typically PUR foams in a closed-cell shape) of a cabinet, this gas expands and to support the structure and gives it insulating properties;
- (6) ‘commercial guarantee’ means any undertaking by the trader or a producer (the guarantor) to the consumer, in addition to any legal obligation relating to the guarantee of conformity, to:
 - (a) reimburse the price paid; or
 - (b) replace, repair or service goods in any way if they do not meet the specifications or any other requirements not related to conformity set out in the guarantee statement or in the relevant advertising available at the time of, or before, the conclusion of the contract;
- (7) ‘product database’ means a collection of data on products, which is arranged in a systematic manner and consists of a consumer-oriented public part, where information concerning individual product parameters is accessible by electronic means, an online portal for accessibility and a compliance part, with clearly specified accessibility and security requirements, as referred to in Regulation (EU) 2017/1369 of the European Parliament and of the Council¹;
- (8) ‘equivalent model’ means a model with the same relevant technical and performance characteristics but placed on the market under a different model identifier;
- (9) ‘operating temperature’ means the reference temperature inside a compartment during testing;
- (10) ‘M’ and ‘N’ means modelling parameters that take into account the volume-dependence of the energy use, with values as set out in Table 4, Annex III;
- (11) ‘annual energy consumption’ (AE) means the average daily energy consumption multiplied with 365 (days per year), expressed in kilowatt hour (kWh), calculated in accordance with point 2(b) of Annex III;

¹ Regulation (EU) 2017/1369 of the European Parliament and of the Council of 4 July 2017 setting a framework for energy labelling and repealing Directive 2010/30/EU (OJ L 198, 28.7.2017, p. 1).

- (12) ‘daily energy consumption’ (E_{daily}) means the electricity used by a refrigerating appliance with a direct sales function over 24 hours at reference conditions, expressed in kilowatt hour per day (kWh/24h);
- (13) ‘standard annual energy consumption’ (SAE) means the reference annual energy consumption of a refrigeration appliance, expressed in kilowatt hour (kWh), calculated in accordance with point 2(c) of Annex III;
- (14) ‘beverage cooler’ means a refrigerating appliance with a direct sales function designed to cool at a specified speed, packaged non-perishable beverages loaded at ambient temperature, for sale at specified temperatures below the ambient temperature, which allows to access the beverages directly through open sides or through one or more doors, drawers or both. The temperature inside the cooler may be allowed to increase during periods of no demand, for the purpose of energy saving, in view of the non-perishable nature of beverages;
- (15) ‘ice-cream freezer’ means a horizontal closed cabinet intended to store and/or display and sell pre-packed ice cream, where access by the consumer to the pre-packed ice cream is achieved by opening a solid or transparent lid from the top, with a net volume ≤ 600 litres (l) and, only in the case of transparent lid ice-cream freezers, a net volume divided by the TDA $\geq 0,35$ meter (m);
- (16) ‘transparent lid’ means a door made of a transparent material that allows the user to clearly see items through it;
- (17) ‘total display area (TDA)’ means the total visible items area, including visible area through glazing, defined by the sum of horizontal and vertical projected surface areas of the net volume, expressed in dm^3 or liters;
- (18) ‘gelato-scooping cabinet’ means a refrigerating appliance with a direct sales function in which ice-cream can be stored, displayed and scooped, within prescribed temperature limits;
- (19) ‘semi-vertical cabinet’ means a vertical cabinet whose overall height does not exceed 1,5 meter (m) and that has either a vertical or inclined display opening;
- (20) ‘combined cabinet’ means a refrigerating appliance with a direct sales function which combines display and opening directions from a vertical, a horizontal or a semi-vertical cabinet;
- (21) ‘supermarket cabinet’ means a refrigerating appliance with a direct sales function intended for the sale and display of items in retail applications, such as in supermarkets, including refrigerator or freezers, but excluding beverage coolers, refrigerated vending machines, gelato-scooping cabinets and ice-cream freezers;
- (22) ‘roll-in cabinet’ means a cabinet which enables goods to be displayed directly on their pallets or rolls which can be placed inside by lifting, swinging, or removing the lower front part, where fitted;
- (23) ‘M-package’ means a test package fitted with a temperature measuring device;
- (24) ‘multi-temperature vending machine’ means a refrigerated vending machine including at least two compartments with different operating temperatures.

ANNEX II
Ecodesign requirements

1. Energy efficiency requirements:

- (a) From 1 September 2020, the EEI of refrigerating appliances with a direct sales function shall not be above the values as set out in Table 1.

Table 1: Maximum EEI for refrigerating appliances with a direct sales function, expressed in % from 01/09/2020 onwards

	EEI
All refrigerating appliances with a direct sales function	110

- (b) From 1 September 2023, the EEI of refrigerating appliances with a direct sales function shall not be above the values in Table 2.

Table 2: Maximum EEI for refrigerating appliances with a direct sales function, expressed in % from 01/09/2023 onwards

	EEI
All refrigerating appliances with a direct sales function	80

2. Functional requirements and requirements on repair and end-of-life aspects:

From 1 September 2020, refrigerating appliances with a direct sales function shall meet the following requirements:

- (a) if the refrigerating appliances with a direct sales function contains a VIP, the VIP shall be labelled with the letters ‘VIP’ in a clearly visible and readable way;
- (b) manufacturers shall ensure that refrigerating appliances with a direct sales function are designed so that the components referred to in Annex VII of Directive 2012/19/EU can be identified and removed with non-proprietary and commonly available tools. The appliance shall be designed so that no gluing or welding fastening technique is encountered for any of the dismantling operations leading to the removal of these components. Within two weeks of a request made by a market surveillance authority or a recycler, manufacturers shall provide them with technical instructions illustrating the operations needed to access the relevant components, including: the type of operation, the type and number of fastening technique(s) to be unlocked, and the tool(s) to be used;
- (c) manufacturers shall make available necessary spare parts, including at least thermostats, temperature sensors and printed circuit boards, for their refrigerating appliances with a direct sales function for at least 6 years after the production of the specific model has ceased;
- (d) if a refrigerating appliance with a direct sales function contains door gaskets and light sources, these shall be replaceable without special tools and without permanent damage, and manufacturers shall make available door gaskets and light sources to end-users for their refrigerating appliances for at least 6 years after the production of the specific model has ceased;

- (e) manufacturers of refrigerating appliances with a direct sales function shall mark in the back panel of the appliances the chemical name of the principal component of the blowing agent used in the insulation of the appliance. In case of using flammable blowing agents, manufacturers shall mark the appliance with the applicable international warning symbol for flammable material or fire hazard.
3. Information requirements:
- (a) From 1 September 2020, instruction manuals for installers and end-users, and free access websites of manufacturers, their authorised representatives and importers shall include the following information, in the order as set out below:
- (1) the recommended setting of temperatures in each compartment for optimum food preservation;
 - (2) instructions for the correct installation and maintenance of the refrigerating appliance with a direct sales function;
 - (3) access to professional repair (internet webpages, addresses, contact details);
 - (4) relevant information for ordering spare parts, directly or through other channels provided by the manufacturer;
 - (5) the minimum period during which spare parts, necessary for the repair of the refrigerating appliance with a direct sales function, are available;
 - (6) the duration of the commercial guarantee of the refrigerating appliance with a direct sales function offered by the manufacturer;
 - (7) a weblink that links the product database, as defined in Commission Delegated Regulation (EU) *[OP- Please insert here the references of the energy labelling regulation]*²; on the free access website this weblink shall link the model information as stored in the product database.
- (b) The information shall also include a list equivalent models.
- (c) The technical documentation for the purposes of conformity assessment pursuant to Article 4 shall include the information in the order and as set out in Table 6 of Regulation *[OP - Please insert here references of the energy labelling regulation for refrigerating appliances with a direct sales function]*. For market surveillance purposes, manufacturers may refer to the technical documentation uploaded to the product database that contains the same information as per Regulation (EU) *[OP - Please insert here references of the energy labelling regulation for refrigerating appliances with a direct sales function]*.

² Commission Delegated Regulation (EU) *[OP - please enter regulation number]* of *[OP – please enter date]* supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to the energy labelling of refrigerating appliances with a direct sales function (*[OP-please insert the reference to the OJ]*).

ANNEX III
Measurement and calculation methods

For the purposes of compliance and verification of compliance with the requirements of this Regulation, measurements and calculations shall be made using harmonised standards, or other reliable, accurate and reproducible methods, which take into account the generally recognised state-of-the-art methods and are in line with the following provisions set out below. The reference numbers of these harmonised standards have been published for this purpose in the *Official Journal of the European Union*.

1. General conditions for testing:
 - (a) the ambient conditions shall correspond to Set 1 as set out in Table 3, except for ice-cream freezers and gelato scooping cabinets which shall be tested in ambient conditions corresponding to Set 2 set out in Table 3;
 - (b) where or a compartment can be set to different temperatures, it shall be tested at the lowest operating temperature;
 - (c) refrigerated vending machines with compartments with variable volumes shall be tested with the volume of the compartment with the highest operating temperature is adjusted to its minimum volume.

Table 3: Ambient conditions

	Dry bulb temperature, °C	Relative humidity, %	Dew point, °C	Water vapour mass in dry air, g/kg
Set 1	25	60	16,7	12,0
Set 2	30	55	20,0	14,8

2. Determination of the EEI:
 - (a) For all refrigerating appliances with a direct sales function, the EEI, expressed in % and rounded to the first decimal place, compares the *AE* (in kWh/a) with the reference *SAE* (in kWh/a) and is calculated as:

$$EEI = AE / SAE.$$

- (b) The *AE*, expressed in kWh/a and rounded to two decimal places, is calculated as follows:

$$AE = 365 \cdot E_{daily};$$

with:

AE is the sum of the *AE* of all compartments of the cabinet.

E_{daily} is the energy consumption of the cabinet over 24 hours, expressed in kWh/24h and rounded to three decimal places.

The *SAE*, expressed in kWh/a and rounded to two decimal places, is calculated as follows. For cabinets with multiple temperature classes, the *SAE* is calculated separately for each compartment and added together to obtain the total *SAE* of the cabinet:

$$SAE = (M + N \cdot Y) \cdot 365 \cdot C \cdot P$$

with:

- (1) M and N are the coefficient values of the modelling parameters per cabinet type and are given in Table 4. For roll-in cabinets the values in Table 4 shall apply from 1 September 2023; from 1 September 2020 to 31 August 2023 the values for roll-in cabinets shall be $M = 9,2$ and $N = 11,6$.

Table 4: M and N coefficient values of the modelling parameters

Category	Value for M	Value for N
Beverage coolers	2,1	0,006
Ice-cream freezers	2,0	0,009
Refrigerated vending machines	4,1	0,004
Gelato-scooping cabinets	25	30,4
Vertical, semi-vertical and combined supermarket refrigerator cabinets	9,1*	9,1*
Horizontal supermarket refrigerator cabinets	3,7	3,5
Vertical, semi-vertical and combined supermarket freezer cabinets	7,5	19,3
Horizontal supermarket freezer cabinets	4,0	10,3

- (2) C is the temperature coefficient value per cabinet type and the values are given in Table 5.
- (3) as regards the coefficient Y:
 - (a) for beverage coolers:

Y is the equivalent volume of the appliance (Veq), calculated as follows:

$$Y = Veq = \text{GrossVolume} \cdot ((25 - Tc)/20) \cdot Cc$$

where Tc is the average compartment classification temperature of the compartment and Cc is the climate class factor. The values for Tc are set out in Table 6. The values for Cc are set out in Table 7.

Table 5: Temperature coefficient values, C

(a) Supermarket cabinets					
Category	Name of the class**	Highest temperature of warmest M-package (°C)	Lowest temperature of coldest M-package (°C)	Highest minimum temperature of all M-package (°C)	Value for C
Vertical, semi-vertical and combined supermarket refrigerator cabinet	M2	$\leq +7$	≥ -1	n.a.	1
	H1 and H2	$\leq +10$	≥ -1	n.a.	0,82
	M1	$\leq +5$	≥ -1	n.a.	1,15
Horizontal supermarket refrigerator cabinets	M2	$\leq +7$	≥ -1	n.a.	1
	H1 and H2	$\leq +10$	≥ -1	n.a.	0,92
	M1	$\leq +5$	≥ -1	n.a.	1,08
Vertical, semi-vertical and combined supermarket freezer cabinets	L1	≤ -15	n.a.	≤ -18	1
	L2	≤ -12	n.a.	≤ -18	0,9
	L3	≤ -12	n.a.	≤ -15	0,9
Horizontal supermarket freezer cabinets	L1	≤ -15	n.a.	≤ -18	1
	L2	≤ -12	n.a.	≤ -18	0,92
	L3	≤ -12	n.a.	≤ -15	0,92
(b) Refrigerated vending machines					
Category	Name of the class***	Maximum measured product temperature (T_V) (°C)		Value for C	
Refrigerated vending machine	Category 1	7		$1+(12-T_V)/25$	
	Category 2	12			
	Category 3	3			
	Category 4	$(T_{V1}+T_{V2})/2$			
	Category 5	25			
	Category 6	$(T_{V1}+T_{V2})/2^*$			
(c) other appliances					
Category			Value for C		
Other appliances			1		
<p><i>Notes:</i></p> <p>* For multi-temperature vending machines, T_V shall be the average of T_{V1} (the maximum measured product temperature in the warmest compartment) and T_{V2} (the maximum measured product temperature in the coldest compartment).</p> <p>** Following EN ISO 23953-2:2015.</p> <p>*** Following EN 50597:2018.</p> <p>n.a = not applicable</p>					

Table 6: T_c values for beverage coolers

<i>Class of the beverage cooler*</i>	<i>T_c (°C)</i>
K1	+3,5
K2	+2,5
K3	-1
K4	+5

Note:
*The classes of the beverage cooler are defined according to EN 16902.

Table 7: C_c values for beverage coolers

<i>Warmest temperature of the beverage cooler (°C)</i>	<i>Relative humidity of the beverage cooler (%)</i>	<i>C_c</i>
+25	60	1,00
+32	65	1,05
+40	75	1,10

(b) for ice-cream freezers:

Y is the equivalent volume of the appliance (V_{eq}), calculated as follows:

$$Y = V_{eq} = \text{NetVolume} \cdot ((12 - T_c)/30) \cdot C_c$$

where T_c is the average compartment classification temperature of the compartment and C_c is the climate class factor. The values for T_c are set out in Table 8. The values for C_c are set out in Table 9.

Table 8: T_c values for ice-cream freezers

<i>Class of the ice-cream freezer</i>		<i>T_c (°C)</i>
<i>Warmest temperature colder or equal to in all tests (except lid opening test) (°C)</i>	<i>Warmest M-package temperature rise allowed during the lid opening test (°C)</i>	
-18	2	-18
-7	2	-7

Table 9: Cc values for ice-cream freezers

<i>Ice-cream freezer type</i>	<i>Operating conditions of the ice-cream freezer</i>				<i>Cc</i>
	<i>Minimum</i>		<i>Maximum</i>		
	<i>Temperature (°C)</i>	<i>Relative humidity (%)</i>	<i>Temperature (°C)</i>	<i>Relative humidity (%)</i>	
Ice-cream freezer with transparent lid	16	80	30	55	1,00
			35	75	1,10
			40	40	1,20
Ice-cream freezer with solid lid	16	80	30	55	1,00
			35	75	1,04
			40	40	1,10

(c) for refrigerated vending machines:

Y is the volume of the appliance, which is the sum of the volumes of all compartments of the cabinet, expressed in litres. For refrigerated vending machines the net volume shall be used and only those compartments that are directly available for vending without service visit shall be taken into account.

(d) for all other cabinets:

Y is the TDA, which is the sum of the display areas of all compartments of the cabinet, expressed in square meters (m²).

(4) P is the coefficient to distinguish between remote and non-remote cabinets. The values for P set out in Table 10.

Table 10: P values

<i>Cabinet type</i>	<i>P</i>
Non-remote supermarket cabinets	1,10
Other cabinets	1,00

ANNEX IV

Verification procedure for market surveillance purposes

The verification tolerances defined in this Annex relate only to the verification of the measured parameters by Member State authorities and shall not be used by the manufacturer or importer as an allowed tolerance to establish the values in the technical documentation or in interpreting these values with a view to achieving compliance or to communicate better performance by any means.

When verifying the compliance of a product model with the requirements laid down in this Regulation pursuant to point 2 of Article 3 of Directive 2009/125/EC, the authorities of the Member States shall apply the following procedure for the requirements referred to in Annex II:

1. The Member State authorities shall verify one single unit of the model.
2. The model shall be considered to comply with the applicable requirements if:
 - (a) the values given in the technical documentation pursuant to point 2 of Annex IV to Directive 2009/125/EC (declared values), and, where applicable, the values used to calculate these values, are not more favourable for the manufacturer or importer than the results of the corresponding measurements carried out pursuant to paragraph (g) thereof; and
 - (b) the declared values meet any requirements laid down in this Regulation, and any required product information published by the manufacturer or importer does not contain values that are more favourable for the manufacturer or importer than the declared values; and
 - (c) when the Member State authorities test the unit of the model, the determined values (the values of the relevant parameters as measured in testing and the values calculated from these measurements) comply with the respective verification tolerances as given in Table 11; and
 - (d) when the Member State authorities check the unit of the model, it complies with the functional requirements and the requirements on repair and end-of-life aspects.
3. If the results referred to in point 2(a), (b) and (d) are not achieved, the model and all models that have been listed as equivalent refrigerating appliance with a direct sales function models in the manufacturer's or importer's technical documentation shall be considered not to comply with this Regulation.
4. If the result referred to in point 2(c) is not achieved, the Member State authorities shall select three additional units of the same model for testing. As an alternative, the three additional units selected may be of one or more different models that have been listed as equivalent models in the manufacturer's or importer's technical documentation.
5. The model shall be considered to comply with the applicable requirements if, for these three units, the arithmetical mean of the determined values complies with the respective verification tolerances given in Table 11.
6. If the result referred to in point 5 is not achieved, the model and all models that have been listed as equivalent refrigerating appliance with a direct sales function models

in the manufacturer's or importer's technical documentation shall be considered not to comply with this Regulation.

7. The Member State authorities shall provide all relevant information to the authorities of the other Member States and to the Commission without delay after a decision being taken on the non-compliance of the model according to points 3 and 6.

The Member State authorities shall use the measurement and calculation methods set out in Annex III.

The Member State authorities shall only apply the verification tolerances that are set out in Table 11 and shall use only the procedure described in points 1 to 7 for the requirements referred to in this Annex. No other tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied.

Table 11: Verification tolerances

Parameter	Verificatio
Net volume, gross volume or TDA	The determined value shall not be more than 3% or 1 l lower – whichever is the greater value – than the declared value.
<i>AE</i>	The determined value shall not be more than 10% higher than the declared value.

ANNEX V
Benchmarks

At the time of entry into force of this Regulation, the best available technology on the market for refrigerating appliances with a direct sales function in terms of their EEI was identified as outlined below.

	TDA (m ²), net volume (l) or gross volume (l) as applicable	T ₁ or T _V	AE (kWh/yr)
Supermarket cabinets (Vertical refrigerator)	3,3		4526 (= 12,4 kWh/day)
Supermarket cabinets (Horizontal refrigerator)	2,2		2044 (=5,6 kWh/day)
Supermarket cabinets (Vertical freezer)	3		9709 (=26,6 kWh/day)
Supermarket cabinets (Horizontal freezer)	1,36 or 2,76		2336 (= 6,4 kWh/day) or 6424 (=17,6 kWh/day)
Can and bottle machine	548	7 °C*	1547 (= 4,24 kWh/day)
Spiral refrigerated vending machine	472	3 °C	2070 (= 5,67 kWh/day in ready mode)
Beverage cooler	520		511 (= 1,4 kWh/day)
Ice-cream freezer	302		584 (= 1,6 kWh/day)
Gelato-scooping cabinet	1,43		10862 (= 29,76 kWh/day)

* This temperature is higher than the normal maximum measured product temperature for these appliances, which is between 3 °C and 5 °C.