COMMISSION REGULATION (EU) 2023/826

of 17 April 2023

laying down ecodesign requirements for off mode, standby mode, and networked standby energy consumption of electrical and electronic household and office equipment pursuant to Directive 2009/125/EC of the European Parliament and of the Council and repealing Commission Regulations (EC) No 1275/2008 and (EC) No 107/2009

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

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

(2) Communication COM(2016)773 ([2]) sets out the working priorities under the ecodesign and energy labelling framework for 2016-2019. The 2016 ecodesign working plan sets out the energy-related product groups to be considered as priorities for undertaking preparatory studies and possibly adopting implementing measures, and provides for a review of Commission Regulation (EC) No 1275/2008 ([3]).

(3) The energy consumption of electrical and electronic household and office equipment in off mode, standby mode and networked standby is one of the measures listed in the Communication, with an estimated 4 TWh of annual final energy savings by 2030, corresponding to reducing greenhouse gas emissions by 1,36 million tonnes of CO_2 equivalent.

([1]) OJ L 285, 31.10.2009, p. 10.
([2]) Communication from the Commission of 30 November 2016, Ecodesign working plan 2016-2019, COM(2016) 773 final.
([3]) Commission Regulation (EC) No 1275/2008 of 17 December 2008 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for standby and off mode, and networked standby, electric power consumption of electrical and electronic household and office equipment (OJ L 339, 18.12.2008, p. 45).

(4) The Commission established ecodesign requirements for off mode and standby mode energy consumption of electrical and electronic household and office equipment in Regulation (EC) No 1275/2008 and added requirements for networked standby energy consumption in Commission Regulation (EU) No 801/2013 ([4]). Under those Regulations the Commission is to review the ecodesign requirements in the light of technological progress.

(5) The Commission has reviewed Regulation (EC) No 1275/2008 and analysed the technical, environmental and economic aspects of energy consumption of electrical and electronic household and office equipment in off mode, standby mode, and networked standby, 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 technological progress, regarding the energy consumption of electrical and electronic household and office equipment in off mode, standby mode, and networked standby.

(7) The annual energy consumption in off mode, standby mode and networked standby of products subject to this Regulation in the EU was estimated in the review at 59,4 TWh in 2015, corresponding to 23,8 million tonnes of CO_2 equivalent greenhouse gas emissions. In a business-as-usual scenario, that energy consumption is projected to decrease by 2030, mostly because of the gradual application of ecodesign requirements introduced by Regulation (EU) No 801/2013. However, that decrease is expected to slow down unless the applicable ecodesign requirements are updated.

(8) The application of this Regulation should be limited to products corresponding to household and office equipment intended for use in the domestic environment, which, for information technology equipment, corresponds to class B equipment as set out in the EN 55022:2010 standard.

(9) Operating modes not covered by this Regulation, such as the ACPI S3 mode of computers, should be considered in product-specific implementing measures under Directive 2009/125/EC.

(10) Requirements on off mode, standby mode, and networked standby should be set out in product-specific implementing measures under Directive 2009/125/EC where possible, taking into account the specificities of each product group and the possibility to deliver additional energy and greenhouse gas emission savings.

(11) Products equipped with low voltage external power supplies, which were exempted from the scope of Regulation (EC) No 1275/2008 by Commission Regulation (EC) No 278/2009 ([5]), are rapidly evolving in terms of their functionalities and are being placed on the EU market in increasing numbers. They should therefore be included in scope of this Regulation to ensure further energy savings and provide a level playing field for manufacturers.

(12) Portable battery-operated products with a recharging circuit that have to be plugged in to recharge should be covered by this regulation, because they depend on energy input from the mains.

(13) Products containing a recharging circuit, where the power is consumed in off mode and standby mode while the battery is not being charged, should be included in the scope of this regulation to ensure energy savings.

([4]) Commission Regulation (EU) No 801/2013 of 22 August 2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions (OJ L 225, 23.8.2013, p. 1).

([5]) Commission Regulation (EC) No 278/2009 of 6 April 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for no-load condition electric power consumption and average active efficiency of external power supplies (OJ L 93, 7.4.2009, p. 3).

(14) Printing equipment that generates printed output from electronic input on paper or other media should be covered by this Regulation to ensure energy savings, while three-dimensional printing equipment should be excluded for the time being from this Regulation.

(15) Simple set-top boxes covered by Commission Regulation (EC) No 107/2009 ([6]) are no longer significant part of the market and their remaining standby and off mode power consumption should be covered by this Regulation. Regulation (EC) No 107/2009 should therefore be repealed.

(16) Motor-operated adjustable furniture operated by electric means and motor-operated building elements spend extensive amounts of time in off mode, standby mode, and networked standby and so offer significant potential for improved energy consumption while in those modes. Therefore, they should also be included in scope of this Regulation.

(17) Ecodesign requirements should align across the EU, levels of the energy consumption by electrical and electronic household and office equipment in off mode, standby mode, and networked standby. This will contribute to the functioning of the single market. It should also improve the environmental performance of electrical and electronic household and office equipment.

(18) 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 organisations, listed in Annex I to Regulation (EU) No 1025/2012 of the European Parliament and of the Council ([7]).

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

(20) In order to improve the effectiveness and credibility of this Regulation and protect consumers, products that automatically alter their performance in test conditions with the objective of reaching a more favourable level for any of the parameters specified in this Regulation should not be allowed to be placed on the market.

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

(22) A review of this Regulation should assess the appropriateness and effectiveness of its provisions in achieving its goals.

(23) In view of the scope of new and modified ecodesign requirements set out in this Regulation and in order to ensure better clarity, Regulation (EC) No 1275/2008 should be repealed.

(24) 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,

([6]) Commission Regulation (EC) No 107/2009 of 4 February 2009 implementing Directive 2005/32/EC of the European Parliament and of the Council with regard to ecodesign requirements for simple set-top boxes (OJ L 36, 5.2.2009, p. 8).

([7]) 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).

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter

This Regulation establishes ecodesign requirements related to off mode, standby mode, and networked standby energy consumption for the placing on the market or putting into service of electrical and electronic household and office equipment.

Article 2

Definitions

For the purposes of this Regulation, the following definitions apply:

(1) 'electrical and electronic household and office equipment' or 'equipment' means any energy-related product listed in Annex II which fulfils the following conditions:

(a) it is dependent on energy input from the mains power source in order to work as intended;

(b) it is designed for use with a nominal voltage rating of 250 V or below;

(2) 'mains' means the electricity supply from the grid of 230 (± 10 %) volts of alternating current at 50 Hz;

(3) 'standby mode' means a condition where the equipment is connected to the mains power source, depends on energy input from the mains power source to work as intended and provides only one or more of the following functions, which may persist for an indefinite time:

(a) reactivation function;

(b) reactivation function and only an indication of enabled reactivation function;

(c) information or status display;

(4) 'reactivation function' means a function that via a remote switch, a remote control, an internal sensor or timer provides a switch from standby mode to another mode, including active mode, providing additional functions;

(5) 'main function' means a function delivering the main service(s) for which the equipment is designed, tested and marketed, and which corresponds to the intended use of the equipment;

(6) 'information or status display' means a continuous function providing information or indicating the status of the equipment on a display, including clocks. A simple light indicator is not considered a status display;

(7) 'active mode' means a condition in which the equipment is connected to the mains power source and at least one of the main functions has been activated;

(8) 'off mode' means a condition in which the equipment is connected to the mains power source and is not providing any function, or it is in a condition providing only:

(a) an indication of off mode condition;

(b) functionalities intended to ensure electromagnetic compatibility under Directive 2014/30/EU of the European Parliament and of the Council ([8]);

(9) 'network' means a communication infrastructure with a topology of links, an architecture, including the physical components, organisational principles, communication procedures and formats (protocols);

([8]) Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (OJ L 96, 29.3.2014, p. 79).

(10) 'networked standby' means a condition in which the equipment is able to resume a function by way of a remotely initiated trigger from a network connection;

(11) 'remotely initiated trigger' means a signal that comes from outside the equipment via a network;

(12) 'model identifier' means a code, usually alphanumeric, which distinguishes a specific equipment model from other models with the same trade mark or the same manufacturer's, importer's or authorised representative's name;

(13) 'equivalent model' means an equipment model which has the same technical characteristics relevant for the technical information to be provided in accordance with Annex II, but which is placed on the market or put into service by the same manufacturer, importer or authorised representative as another equipment model with a different model identifier;

(14) 'declared values' means the values provided by the manufacturer, importer or authorised representative for the stated, calculated or measured technical parameters in accordance with Article 4, for the verification of compliance by the Member State authorities.

Article 3

Ecodesign requirements

The ecodesign requirements are set out in Annex III.

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 under Article 8 of Directive 2009/125/EC, the technical documentation shall contain the information set out in point 3(b) of Annex III to this Regulation and the details and results of the calculations made in accordance with Annex IV to this Regulation.

3. Where the information included in the technical documentation for that particular model has been obtained, alternatively:

(a) from a model that has the same technical characteristics relevant for the technical information to be provided in accordance with Annex III to this Regulation but is produced by a different manufacturer;

(b) by calculation on the basis of design or extrapolation from another model of the same or a different manufacturer, or both,

the technical documentation for a model shall include the details and results of the calculations or extrapolations, the assessment made by the manufacturer to verify the accuracy of the calculations and, where appropriate, the declaration of identity between the models of different manufacturers.

The technical documentation shall include a list of equivalent models referred to in the first and second subparagraph, including the model identifiers.

4. The technical documentation shall include the information listed in point 3(a) of Annex III to this Regulation.

Article 5

Verification procedure for market surveillance purposes

Member States' authorities shall apply the verification procedure laid down in Annex V to this Regulation where they perform the market surveillance checks referred to in Article 3(2) of Directive 2009/125/EC.

Article 6

Circumvention and software updates

The manufacturer, importer or authorised representative shall not place on the market equipment designed to be able to detect they are being tested, including by recognising the test conditions or test cycle, and to react specifically by automatically altering their performance during the test to reach a more favourable level for any of the parameters in the technical documentation or included in any of the documentation provided.

The energy consumption of the equipment and any of the other declared parameters shall not deteriorate after a software or firmware update where measured with the same test standard originally used for the declaration of conformity, unless the user explicitly consents to this before the update. No performance change shall occur as result of rejecting the update.

A software update shall not have the effect of changing the equipment's performance in a way that makes it non-compliant with the ecodesign requirements applicable for the declaration of conformity.

Article 7

Indicative benchmarks

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

Article 8

Review

The Commission shall review this Regulation in the light of technological progress and present the results of this review to the Consultation Forum, no later than 9 May 2027.

The review shall in particular assess the appropriateness of:

(a) the requirements for standby, off mode and networked standby;

(b) the requirements for networked standby for HiNA equipment and equipment with HiNA functionality and their distinction with non-HiNA equipment;

(c) including in the scope of this Regulation other relevant product groups, including products used in the services sector;

(d) setting requirements for the battery maintenance mode of battery chargers.

Article 9

Repeal

Regulation (EC) No 1275/2008 is repealed with effect from 9 May 2025.

Regulation (EC) No 107/2009 is repealed with effect from 9 May 2025.

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 9 May 2025. However, Article 6 first paragraph shall apply when the Regulation enters into force.

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

Done at Brussels, 17 April 2023.

For the Commission
The President
Ursula VON DER LEYEN

ANNEX I

DEFINITIONS

1. 'Information technology equipment' means any equipment which has a main function of either entry, storage, display, retrieval, transmission, processing, switching, or control of data or telecommunication messages, or a combination of those functions, and which can be equipped with one or more terminal ports typically operated for information transfer;

2. 'Domestic environment' means an environment where the use of broadcast radio and television receivers may be expected within a distance of 10 m of the equipment concerned;

3. 'Network port' means a wired or wireless physical interface of the network connection located on the equipment through which the equipment can be remotely activated;

4. 'Logical network port' means the network technology running over a physical network port;

5. 'Physical network port' means the physical (hardware) medium of a network port. A physical network port can host two or more network technologies;

6. 'Network availability' means a capability of the equipment to resume functions after a remotely initiated trigger has been detected by a network port;

7. 'Networked equipment' means equipment that can connect to a network and has one or more network ports;

8. 'Networked equipment with high network availability' or 'HiNA equipment' means equipment with one or more of the following functionalities, but no other, as the main function(s): those of a router, network switch, wireless network access point, hub, modem, VoIP telephone, video phone;

9. 'Networked equipment with high network availability functionality' or 'equipment with HiNA functionality' means equipment that has the functionality of a router, network switch, wireless network access point or combination thereof included, but not being HiNA equipment;

10. 'Router' means a network device whose main function is to determine the optimal path along which network traffic should be forwarded. Routers forward packets of data from one network to another, based on network layer information (L3);

11. 'Network switch' means a network device whose main function is to filter, forward and distribute frames based on the destination address of each frame. All switches operate at least at the data link layer (L2);

12. 'Wireless network access point' means a network device whose main function is to provide IEEE 802.11 (Wi-Fi) connectivity to multiple clients;

13. 'Hub' means a network device that contains multiple ports and is used to connect segments of a Local Area Network;

14. 'Modem' means a network device whose main function is to transmit and receive digitally modulated analogue signals over a wired network;

15. 'Printing equipment' means equipment that generates printed output from electronic input on paper or other media. Printing equipment may provide additional functions, such as scanning and copying and can be marketed as a multifunctional device or a multifunctional product;

16. ‘Large format printing equipment’ means printing equipment designed for printing on A2 media and larger, including equipment designed to accommodate continuous-form media of at least 406 mm width;

17. ‘Household coffee machine’ means a non-commercial equipment for brewing coffee;

18. ‘Drip filter household coffee machine’ means a household coffee machine which uses percolation to extract the coffee;

19. ‘Games console’ means equipment which is designed to provide video game playing as its principal function. A games console is typically designed to provide output to an external electronic display as the main game-play display and typically utilises handheld controllers or other interactive controllers as the primary input device. Games consoles typically include central processing unit(s), graphics processing unit(s), system memory, and internal data storage options. Handheld gaming devices, with an integrated display as the main game-play display, and which primarily operate on an integrated battery or other portable power source rather than via a direct connection to the mains, are considered to be a type of games console;

20. ‘Motor-operated adjustable furniture’ means furniture that includes motors or actuators and a control unit to adjust height, position or form. Those adjustments are operated by the end-user through cabled and/or wireless controls, via a network or controlled automatically with the use of sensors;

21. ‘Motor-operated building element’ means opening or comfort equipment in buildings, excluding ventilation equipment, that can move or rotate, or both, by using input from the mains power source. The motor-operated building element incorporates an electric motor or an actuator and a control unit, and is operated by the end-user through cabled and/or wireless control(s), via a network, or controlled automatically with the use of sensors;

22. ‘Media streaming device’ means a hardware device that delivers any media content, live or recorded, to end-user devices over a network and played back in real time.

ANNEX II

LIST OF ENERGY-RELATED PRODUCTS COVERED BY THIS REGULATION

1. Appliances designed, tested and marketed for household use:
   - tumble dryers and other clothes dryers;
   - electric ovens including when incorporated in cookers;
   - electric hobs and hot plates;
   - microwave ovens;
   - toasters;
   - fryers;
   - coffee machines;
   - grinders;
   - equipment for opening or sealing containers or packages;
   - electric knives;
   - other appliances for cooking and other processing of food, preparing beverages, cleaning, and maintenance of clothes, but excluding household dishwashers covered by Commission Regulation (EU) 2019/2022 ([1]), and household washing machines and household washer-dryers covered by Commission Regulation (EU) 2019/2023 ([2]);
   - appliances for hair cutting, hair drying, hair treatments, tooth brushing, shaving, massage and other body care appliances;
   - scales.

2. Information technology equipment intended primarily for use in the domestic environment, including printing equipment, but excluding desktop computers, integrated desktop computers and notebook computers covered by Commission Regulation (EU) No 617/2013 ([3]), servers and data storage products covered by Commission Regulation (EU) 2019/424 ([4]), as well as electronic displays covered by Commission Regulation (EU) 2019/2021 ([5]).

3. Consumer equipment:
   - radio sets;
   - video cameras;
   - video players;
   - hi-fi players;
   - audio amplifiers;
   - audio speakers;

([1]) Commission Regulation (EU) 2019/2022 of 1 October 2019 laying down ecodesign requirements for household dishwashers pursuant to Directive 2009/125/EC of the European Parliament and of the Council amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1016/2010 (OJ L 315, 5.12.2019, p. 267).

([2]) Commission Regulation (EU) 2019/2023 of 1 October 2019 laying down ecodesign requirements for household washing machines and household washer-dryers pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EU) No 1015/2010 (OJ L 315, 5.12.2019, p. 285).

([3]) Commission Regulation (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers (OJ L 175, 27.6.2013, p. 13).

([4]) Commission Regulation (EU) 2019/424 of 15 March 2019 laying down ecodesign requirements for servers and data storage products pursuant to Directive 2009/125/EC of the European Parliament and of the Council and amending Commission Regulation (EU) No 617/2013 (OJ L 74, 18.3.2019, p. 46).

([5]) Commission Regulation (EU) 2019/2021 of 1 October 2019 laying down ecodesign requirements for electronic displays pursuant to Directive 2009/125/EC of the European Parliament and of the Council, amending Commission Regulation (EC) No 1275/2008 and repealing Commission Regulation (EC) No 642/2009 (OJ L 315, 5.12.2019, p. 241).

— home theatre systems;

— media streaming devices;

— musical instruments;

— complex set top boxes and simple set-top boxes;

— other equipment for the purpose of recording or reproducing sound or images, including signals or other technologies for the distribution of sound and image other than by telecommunications, but excluding electronic displays covered by Regulation (EU) 2019/2021 and projectors with mechanisms for exchanging the lenses with others with different focal length.

4. Toys, leisure and sports equipment:

— electric trains or car racing sets;

— games consoles;

— sports equipment;

— other toys and leisure equipment.

5. Motor-operated adjustable furniture:

— height-adjustable desks;

— elevation beds and chairs, excluding medical devices and wheelchairs;

— other motor-operated adjustable furniture.

6. Motor-operated building elements:

— shutters;

— blinds;

— screens;

— awnings;

— pergolas;

— curtains;

— doors;

— gates;

— windows;

— skylights;

— other motor-operated building elements.

ANNEX III

ECODESIGN REQUIREMENTS

1. Energy efficiency requirements:

   (a) Power consumption in off mode:

   Power consumption of equipment in off mode shall not exceed 0,50 W. Two years after the application of this Regulation, the power consumption of equipment in off mode shall not exceed 0,30 W.

   (b) Power consumption in standby mode:

   The power consumption of equipment in any condition providing only a reactivation function, or providing only a reactivation function and an indication of enabled reactivation function, shall not exceed 0,50 W.

   The power consumption of equipment in any condition providing only information or status display, or providing only a combination of reactivation function and information or status display, or providing only a reactivation function and an indication of enabled reactivation function and information or status display shall not exceed 0,80 W, except for household tumble driers covered by Commission Regulation (EU) No 932/2012 ([1]) for which this value shall be 1,00 W.

   Networked equipment that has one or more standby modes shall comply with the requirements for those standby modes when all wired network ports are disconnected and all wireless network ports are deactivated.

   (c) Power consumption in networked standby:

   The power consumption of HiNA equipment or equipment with HiNA functionality, in networked standby shall not exceed 8,00 W. Two years after the application of this Regulation, the power consumption of HiNA equipment or equipment with HiNA functionality in networked standby shall not exceed 7,00 W.

   The power consumption of networked equipment, other than HiNA equipment or equipment with HiNA functionality, in networked standby shall not exceed 2,00 W.

   The power consumption limits shall not apply to:

   — large format printing equipment;

   — desktop thin clients, workstations, mobile workstations, and small-scale servers as defined in Regulation (EU) No 617/2013.

2. Functional requirements:

   (a) Availability of off mode and standby mode:

   Unless this is inappropriate for the intended use, equipment shall provide one or more of the following conditions:

   — off mode,

   — standby mode,

   — another condition which does not exceed the applicable power consumption requirements for off mode or standby mode when the equipment is connected to the mains power source.

   (b) Power management function for all equipment other than networked equipment:

   (1) Unless inappropriate for the intended use, equipment shall provide a power management function. When equipment is not providing a main function, and another energy-related product is not dependent on its functions, the power management function shall switch equipment, after the shortest possible period appropriate for the intended use of the equipment, automatically into either of the following conditions:

   — standby mode,

([1]) Commission Regulation (EU) No 932/2012 of 3 October 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household tumble driers (OJ L 278, 12.10.2012, p. 1).

— off mode,

— another condition which does not exceed the applicable power consumption requirements for off mode or standby mode when the equipment is connected to the mains power source.

(2) For household coffee machines, the period referred to in point (1) shall be as follows:

— for drip filter household coffee machines storing the coffee in an insulated jug, a maximum of five minutes;

— for drip filter household coffee machines storing the coffee in a non-insulated jug, a maximum of 40 minutes;

— for household coffee machines other than drip filter household coffee machines, a maximum of 30 minutes.

(3) For other equipment, the period referred to in point (1) shall not exceed 20 minutes.

(4) The power management function described in point (1) shall be activated when the equipment is placed on the market or put into service and activated with its initial setup after the equipment is reset to its factory default settings.

(5) The equipment may offer the user the option to deactivate the power management function. In such cases the users shall be warned about the increased energy consumption of that action. That warning shall be included in the instruction manuals and, where applicable, be made available on the displays integrated in or connected to the equipment, excluding information or status displays. That option shall not be part of the installation procedure of the equipment and shall require a separate user action on the equipment.

(c) Power management for networked equipment:

Unless inappropriate for the intended use, equipment shall provide a power management function. When equipment is not performing a main function, and another energy-related product is not dependent on its functions, the power management function shall switch equipment, after the shortest possible period appropriate for the intended use of the equipment, automatically into networked standby. That period shall not exceed 20 minutes.

In networked standby, the power management function may switch equipment automatically into standby mode or off mode or another condition, which does not exceed the applicable power consumption requirements for standby or off mode.

The power management function shall be available for all network ports of the networked equipment.

Unless all network ports are deactivated, the power management function shall be activated when the equipment is placed on the market or put into service. After the equipment is reset to its factory default settings, the power management function shall be activated if any of the network ports is activated.

The equipment may offer the user the option to deactivate the power management function. In such cases, the user shall be warned about the increased energy consumption of that action. That warning shall be included in the instruction manuals and, where applicable, be made available on the displays integrated in or connected to the equipment. That option shall not be part of the installation procedure of the equipment and shall require a separate user action on the equipment.

Networked equipment other than HiNA equipment shall comply with the requirements set out in point 2(b) when all wired network ports are disconnected and all wireless network ports are deactivated.

(d) Possibility of deactivating wireless network connections:

Any networked equipment that can be connected to a wireless network shall offer the user the possibility to deactivate the wireless network connections. That requirement does not apply to equipment that relies on a single wireless network connection for intended use and have no wired network connection.

(e) The indication 'standby' and its translations in all Union official languages shall not be used in describing, either alone or in combination with other information, any condition in which the equipment is not compliant with the requirements set out in points 1(b) or 1(c).

3. Information requirements

(a) The instruction manuals for end-users, and free access websites of manufacturers, importers or authorised representatives shall include the following information for all equipment, as applicable:

(1) for each off mode, standby mode (or another condition which does not exceed the applicable power consumption requirements for off mode or standby mode) and networked standby into which the equipment is switched by the power management function or similar function:

— the power consumption expressed in watts rounded to the first decimal place;

— the period after which the equipment reaches automatically standby mode, off mode or networked standby in minutes and rounded to the nearest minute;

(2) the power consumption of the equipment in networked standby if all wired network ports are connected and all wireless network ports are activated;

(3) For equipment that needs an external power supply, but it is placed on the market without one, the manufacturer, importer or authorised representative shall provide information on the technical characteristics of the product model of the external power supply to be used with that equipment.

(4) guidance on how to activate and deactivate wireless network ports.

As an alternative, information in points (1), (2) and (3) can be provided in the instruction manuals for end-users in the form of a link to this information in the free access websites of manufacturers, importers or authorised representatives.

(b) The technical documentation for the purposes of conformity assessment pursuant to Article 4 shall contain the following elements:

(1) category of equipment:

— specification whether it is networked or non-networked equipment;

— for networked equipment, specification whether it is HiNA equipment, equipment with HiNA functionality, or other networked equipment; where no information is provided, the equipment is not considered HiNA equipment or equipment with HiNA functionality;

(2) for each off mode, standby mode and networked standby:

— the declared value of the power consumption in watts rounded to the first decimal place;

— the measurement method used;

— a description of how the equipment mode was selected or programmed;

— the sequence of events leading to the condition where the equipment automatically changes modes;

— any notes regarding the operation of the equipment, e.g. information on how the user switches the equipment into networked standby;

— if applicable, the default time needed for the equipment to reach the applicable low power mode or condition in minutes and rounded to the nearest minute;

(3) for networked equipment:

— the number and type of network ports and, with the exception of wireless network ports, where those ports are located on the equipment; in particular it shall be declared if the same physical network port accommodates two or more types of network ports;

— whether all network ports are deactivated before the equipment is placed on the market or put into service;

— whether there are ports relying on active wired connections for the intended use, and the procedure used for deactivating those ports;

— the power consumption of the equipment in networked standby if all wired network ports are connected and all wireless network ports are activated;

— guidance on how to activate and deactivate wireless network ports;

(4) for each type of network port:

— the period after which the power management function switches the equipment into networked standby;

— the remotely initiated trigger that is used to reactivate the equipment;

— the (maximum) performance specifications;

— the (maximum) power consumption of the equipment in networked standby into which the power management function will switch the equipment, if only that port is used for remote activation;

— the communication protocol used by the equipment;

(5) test conditions for measurements:

— ambient temperature;

— test voltage in V and frequency in Hz;

— total harmonic distortion of the electricity supply system;

— description of the instrumentation, set-up and circuits used for electrical testing;

(6) the equipment characteristics relevant for assessing conformity with the requirements set out in points 2(a), 2(b) and 2(c), as applicable, including the declared value of the time taken to automatically reach networked standby, standby mode or off mode, or another condition which does not exceed the applicable power consumption requirements for off mode or standby mode in minutes, rounded to the nearest minute.

(7) If applicable, a technical justification shall be provided that the requirements set out in point 2(a), 2(b), 2(c) and 2(d) are inappropriate for the intended use of equipment. The need to maintain one or more network connections or to wait for a remotely initiated trigger is not considered a technical justification for exemption from the requirements set out in point 2(b) in the case of equipment that is not defined as networked equipment by the manufacturer. For the requirements set out in point 2(c), the technical justification shall, in particular, provide evidence on why a main function needs to remain always active. In addition, where applicable, the packaging shall mention explicitly that:

(a) the equipment does not have a standby mode or other equivalent state in terms of energy efficiency requirements, power management function or the ability to deactivate wireless network connections mode;

(b) the power consumption of the equipment is likely to be higher than other equipment models meeting these functional requirements.

(8) the description of the equipment's main functions.

ANNEX IV

MEASUREMENT METHODS AND CALCULATIONS

Measurements and calculations shall be made using harmonised standards, the reference numbers of which have been published for this purpose in the *Official Journal of the European Union*, or other reliable, accurate and reproducible methods, which take into account the generally recognised state of the art.

The following general conditions shall apply when testing networked equipment:

(a) To measure the energy consumption in standby mode of networked equipment that has such mode, all network ports of the unit shall be deactivated or disconnected, as applicable.

(b) If the equipment relies on active wired connection to one or more network ports for the intended use, manual deactivation of those network ports is allowed instead of wire disconnection.

(c) The following procedure shall be used for measuring energy consumption in networked standby and for testing the power management function:

(1) If the equipment has one type of network port and if two or more ports of that type are available, one of those ports is randomly chosen and that port is connected to the appropriate network complying with the port's maximum specification. If the equipment has multiple wireless network ports of the same type, the other wireless ports shall be deactivated if possible. If the equipment has multiple wired network ports of the same type, the other network ports shall be disconnected. If only one network port is available, that port is connected to the appropriate network complying with the port's maximum specification.

The tested unit is switched on. The device that provides the remotely initiated trigger that will reactivate the tested unit is connected to the appropriate network, switched on, and ready to provide the trigger when required to. Once the tested unit is switched on and working properly, it is allowed to go into networked standby and the power consumption is measured. Then the appropriate trigger is given to the unit through the network port and a check is made on whether the equipment is reactivated.

(2) If the equipment has more than one type of network port, for each type of network port the following procedure is repeated. If two or more network ports of a type are available, one port is chosen randomly for each type of network port and that port is connected to the appropriate network complying with the port's maximum specification.

If for a certain type of network port only one port is available, that port is connected to the appropriate network complying with the port's maximum specification. Wired network ports not used shall be disconnected and wireless ports not used shall be deactivated.

The tested unit is switched on. The device that provides the remotely initiated trigger that will reactivate the tested unit is connected to the appropriate network, switched on, and ready to provide the trigger when required to. Once the tested unit is switched on and working properly, it is allowed to go into networked standby and the power consumption is measured. Then the appropriate trigger is given to the unit through the network port and a check is made on whether the equipment is reactivated. If one physical network port is shared by two or more types of (logical) network ports, that procedure is repeated for each type of logical network port, with the other logical network ports being logical-disconnected.

(d) For all types of household coffee machines, the measurements shall be performed after completion of the last brewing cycle, or, where applicable, after completion of a descaling process, self-cleaning process or any operation performed by the user, unless an alarm has been triggered requiring user intervention to prevent possible damage or accident.

ANNEX V

VERIFICATION PROCEDURE FOR MARKET SURVEILLANCE PURPOSES

The verification tolerances defined in this Annex apply only to the verification by Member State authorities of the declared values. They shall not be used by the manufacturer, importer or authorised representative as an allowed tolerance for establishing the values in the technical documentation or in interpreting those values with a view to achieving compliance or for communicating better performance by any means.

Where a model is not in conformity with the requirements laid down in the first paragraph of Article 6 of this Regulation, the model and all equivalent models shall be considered not compliant.

As part of verifying the compliance of an equipment model with the requirements laid down in this Regulation pursuant to Article 3(2) of Directive 2009/125/EC, for the requirements referred to in this Annex, the authorities of the Member States shall apply the following procedure:

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 all the following conditions are met:

   (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 those values, are not more favourable for the manufacturer, importer or authorised representative than the results of the corresponding measurements carried out pursuant to point 2(g) of that Annex;

   (b) the declared values meet any requirements laid down in this Regulation, and any required product information published by the manufacturer, importer or authorised representative does not contain values that are more favourable for the manufacturer, importer or authorised representative than the declared values;

   (c) when Member State authorities check the unit of the model the manufacturer, importer or authorised representative has put in place a system that complies with the requirements in the second paragraph of Article 6;

   (d) when Member State authorities check the unit of the model, it complies with the functional requirements in point 2 of Annex III and with the information requirements in point 3 of Annex III;

   (e) when 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 those measurements) comply with the respective verification tolerances as set out in Table 1.

3. If the conditions set out in point 2(a), (b), (c) or (d) are not met, the model and all equivalent models shall be considered not to comply with this Regulation.

4. If the condition set out in point 2(e) is not met, 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 equivalent models.

5. The model shall be considered to comply with the applicable requirements if, for those three units, the arithmetical mean of the determined values complies with the respective verification tolerances given in Table 1.

6. If the result referred to in point 5 is not achieved, the model and all equivalent models 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 is taken on non-compliance of the model pursuant to points 3 or 6, or the second paragraph of this Annex.

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

For the requirements referred to in this Annex, Member State authorities shall apply only the verification tolerances set out in Table 1 below and shall use only the procedure described in points 1 to 7 above. For the parameters in Table 1, no other tolerances, such as those set out in harmonised standards or in any other measurement method, shall be applied.

Table 1

Verification tolerances

Parameters	Verification tolerances
Power consumption in off mode	The determined value (*) shall not exceed the declared value by more than 0,10 W.
Power consumption in standby mode	The determined value (*) shall not exceed the declared value by more than 0,10 W.
Power consumption in networked standby	The determined value (*) shall not exceed the declared value by more than 0,10 W if the declared value is smaller than 1 W and by more than 10 % otherwise.
Time needed for the equipment to reach the applicable low power mode or condition	The determined value (*) shall not exceed the declared value by more than 10 %

(*) If three additional units are tested as provided for in point 4, the determined value means the arithmetical mean of the values determined for those three additional units.

ANNEX VI

BENCHMARKS

At the time of entry into force of this Regulation, the best available technology on the market in terms of power consumption in off mode, standby mode and networked standby was identified as follows:

(a) Off mode: 0 W – 0,2 W with hard-off switch on the primary side, depending, inter alia, on the characteristics related to electromagnetic compatibility under Directive 2014/30/EU of the European Parliament and of the Council [1].

(b) Standby mode: 0,1 W with reactivation function; 0,1 W with simple or low power LEDs information or status display (larger displays – e.g. for clocks – require more power).

(c) Networked standby: 3 W for HiNA equipment; 1 W or less for non-HiNA equipment.

[1] Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility (OJ L 96, 29.3.2014, p. 79).