
Changes to legislation: There are outstanding changes not yet made to Commission Regulation (EU) No 617/2013. Any changes that have already been made to the legislation appear in the content and are referenced with annotations. (See end of Document for details) [View outstanding changes](#)

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 (Text with EEA relevance)

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ANNEX II

ECODESIGN REQUIREMENTS AND TIMETABLE

1. E_{TEC}

Desktop computer and integrated desktop computer

1.1. **From 1 July 2014**

1.1.1. The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed:

- (a) Category A computer: 133,00;
- (b) Category B computer: 158,00;
- (c) Category C computer: 188,00;
- (d) Category D computer: 211,00.

E_{TEC} shall be determined using the following formula:

$$E_{TEC} = (8760 / 1000) \times (0,55 \times P_{off} + 0,05 \times P_{sleep} + 0,40 \times P_{idle})$$

For computers that lack a discrete sleep mode, but have idle state power demand less than or equal to 10,00 W, power in idle state (P_{idle}) may be used in place of sleep (P_{sleep}) in the above equation, such that the formula is replaced by

$$E_{TEC} = (8760 / 1000) \times (0,55 \times P_{off} + 0,45 \times P_{idle})$$

All P_x are power values in the indicated mode/state as defined in the definition section, measured in Watts (W) according to the procedures indicated in Annex III.

1.1.2. The following capability adjustments apply:

- (a) memory: 1 kWh/year per GB over base, where base memory is 2 GB (for category A, B and C computers) and 4 GB (for category D computers);
- (b) additional internal storage: 25 kWh/year;
- (c) discrete television tuner: 15 kWh/year;
- (d) discrete audio card: 15 kWh/year;
- (e) discrete graphics card (dGfx) for the first and each additional discrete graphics card (dGfx):

	dGfx category	TEC allowance(kWh/year)
First discrete graphics	G1	34
	G2	54

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card (dGfx)	G3	69
	G4	100
	G5	133
	G6	166
	G7	225
Each additional discrete graphics card (dGfx)	G1	20
	G2	32
	G3	41
	G4	59
	G5	78
	G6	98
	G7	133

1.1.3. The capability adjustments for discrete graphics cards (dGfx), discrete television tuner and discrete audio card mentioned in point 1.1.2 and point 1.2.2 only apply to cards and tuner that are enabled during testing of desktop computers or integrated computers.

1.1.4. Category D desktop computers and integrated desktop computers meeting all of the following technical parameters are exempt from the provisions specified in points 1.1.1 and 1.1.2 and their revisions specified in point 1.2:

- (a) a minimum of six physical cores in the central processing unit (CPU); and
- (b) discrete graphics card(s) (dGfx) providing total frame buffer bandwidths above 320 GB/s; and
- (c) a minimum 16 GB of system memory; and
- (d) a PSU with a rated output power of at least 1 000 W.

1.2. **From 1 January 2016**

1.2.1. The following revisions to the annual total energy consumption specified in point 1.1.1 apply:

The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed:

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- (a) Category A computer: 94,00;
- (b) Category B computer: 112,00;
- (c) Category C computer: 134,00;
- (d) Category D computer: 150,00.

1.2.2. The following revisions to the capability adjustments for discrete graphics cards (dGfx) specified in point 1.1.2(e) apply:

	dGfx category	TEC allowance(kWh/year)
First discrete graphics card (dGfx)	G1	18
	G2	30
	G3	38
	G4	54
	G5	72
	G6	90
	G7	122
Each additional discrete graphics card (dGfx)	G1	11
	G2	17
	G3	22
	G4	32
	G5	42
	G6	53
	G7	72

Notebook computer

1.3. **From 1 July 2014**

1.3.1. The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed:

- (a) Category A computer: 36,00;
- (b) Category B computer: 48,00;
- (c) Category C computer: 80,50;

E_{TEC} shall be determined using the following formula:

$$E_{TEC} = (8760 / 1000) \times (0,60 \times P_{off} + 0,10 \times P_{sleep} + 0,30 \times P_{idle})$$

where all P_x are power values in the indicated mode/state as defined in the definition section, measured in Watts (W) according to the procedures indicated in Annex III.

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- 1.3.2. The following capability adjustments apply:
- (a) memory: 0,4 kWh/year per GB over base, where base memory is 4 GB;
 - (b) additional internal storage: 3 kWh/year;
 - (c) discrete television tuner: 2,1 kWh/year;
 - (d) discrete graphics card (dGfx) (for the first and each additional discrete graphics card (dGfx))

	dGfx category	TEC allowance(kWh/year)
First discrete graphics card (dGfx)	G1	12
	G2	20
	G3	26
	G4	37
	G5	49
	G6	61
	G7	113
Each additional discrete graphics card (dGfx)	G1	7
	G2	12
	G3	15
	G4	22
	G5	29
	G6	36
	G7	66

- 1.3.3. The capability adjustments for discrete graphics cards (dGfx) and discrete television tuner mentioned in point 1.3.2 and point 1.4.2 only apply to cards and tuner that are enabled during testing of notebook computers.

- 1.3.4. Category C notebook computers meeting all of the following technical parameters are exempt from the provisions specified in points 1.3.1 and 1.3.2 and their revisions specified in point 1.4:

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- (a) a minimum of four physical cores in the central processing unit (CPU); and
- (b) discrete graphics card(s) (dGfx) providing total frame buffer bandwidths above 225 GB/s; and
- (c) a minimum 16 GB of system memory.

1.4. From 1 January 2016

- 1.4.1. The following revisions to the annual total energy consumption specified in point 1.3.1 apply:

The annual total energy consumption (E_{TEC} in kWh/year) shall not exceed:

- (a) Category A computer: 27.00;
- (b) Category B computer: 36.00;
- (c) Category C computer: 60.50;

- 1.4.2. The following revisions to the capability adjustments for discrete graphics cards (dGfx) specified in point 1.3.2(d) apply:

	dGfx category	TEC allowance(kWh/year)
First discrete graphics card (dGfx)	G1	7
	G2	11
	G3	13
	G4	20
	G5	27
	G6	33
	G7	61
Each additional discrete graphics card (dGfx)	G1	4
	G2	6
	G3	8
	G4	12
	G5	16
	G6	20
	G7	36

2. SLEEP MODE

Desktop computer, integrated desktop computer and notebook computer

2. **From 1 July 2014**

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	<p>2.1. A product shall provide sleep mode and/or another condition that provides the functionality of sleep mode and which does not exceed the applicable power demand requirements for a sleep mode.</p> <p>2.2. Power demand in sleep mode shall not exceed 5,00 W in desktop computers and integrated desktop computers and 3,00 W in notebook computers.</p> <p>2.3. Desktop computers and integrated desktop computers where idle state power demand is less than or equal to 10,00 W are not required to have a discrete system sleep mode.</p> <p>2.4. Where a product is placed on the market with a WOL functionality enabled in sleep mode:</p> <p>(a) an additional allowance of 0,70 W can be applied;</p> <p>(b) it must be tested with a WOL functionality both enabled and disabled and must comply with both requirements.</p> <p>2.5. Where a product is placed on the market without Ethernet capability, it shall be tested without WOL enabled.</p>
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3. LOWEST POWER STATE

Desktop computer, integrated desktop computer and notebook computer	<p>3. As of the entry into force of the Regulation</p> <p>3.1. Power demand in the lowest power state shall not exceed 0,50 W.</p> <p>3.2. A product shall provide a power state or mode which does not exceed the applicable power demand requirements for the lowest power state when it is connected to the mains power source.</p> <p>3.3. Where a product is placed on the market with an information or status display, an additional allowance of 0,50 W can be applied.</p>
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4. OFF MODE

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<p>Desktop computer, integrated desktop computer and notebook computer</p>	<p>4. From 1 July 2014</p> <p>4.1. Power demand in off mode shall not exceed 1,00 W.</p> <p>4.2. A product shall provide off mode and/or another condition which does not exceed the applicable power demand requirements for off mode when it is connected to the mains power source.</p> <p>4.3. Where a product is placed on the market with a WOL functionality enabled in off mode: (a) an additional allowance of 0,70 W can be applied; (b) it must be tested with a WOL functionality both enabled and disabled and must comply with both requirements.</p> <p>4.4. Where a product is placed on the market without Ethernet capability, it shall be tested without WOL enabled.</p>
<p>5. INTERNAL POWER SUPPLY EFFICIENCY</p>	
<p>Desktop computer, integrated desktop computer, desktop thin client, workstation, and small-scale server</p>	<p>5.1. From 1 July 2014 All computer internal power supplies shall not perform at less than: (a) 85 % efficiency at 50 % of rated output power; (b) 82 % efficiency at 20 % and 100 % of rated output power; (c) power factor = 0,9 at 100 % of rated output power. Internal power supplies with a maximum rated output power of less than 75 W are exempt from the power factor requirement.</p>
<p>Computer servers</p>	<p>^{F1}5.2. From 1 July 2014</p> <p>5.2.1. All multi-output (AC-DC) power supplies shall not perform at less than: </p> <p>5.2.2. All multi-output (AC-DC) power supplies shall not perform at less than: </p>

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	<p>5.2.3. All single output (AC-DC) power supplies with rated output of not more than 500 W shall not perform at less than:</p> <p>5.2.4. All single output (AC-DC) power supplies with rated output of not more than 500 W shall not perform at less than:</p> <p>5.2.5. All single output (AC-DC) power supplies with rated output greater than 500 W but not more than 1 000 W shall not perform at less than:</p> <p>5.2.6. All single output (AC-DC) power supplies with rated output greater than 500 W but not more than 1 000 W shall not perform at less than:</p> <p>5.2.7. All single output (AC-DC) power supplies with rated output of more than 1 000 W shall not perform at less than:</p> <p>5.2.8. All single output (AC-DC) power supplies with rated output of more than 1 000 W shall not perform at less than:</p>
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6. POWER MANAGEMENT ENABLING

<p>Desktop computer, integrated desktop computer and notebook computer</p>	<p>6.1. As of the entry into force of the Regulation The computer shall offer a power management function, or a similar function which, when the computer is not providing the main function or when other energy-using products are not dependent on its functions, automatically switches the computer into a power mode that has a lower power demand than the applicable power demand requirement for sleep mode.</p> <p>6.2. From 1 July 2014</p> <p>[^{F2}6.2.1. The computer shall reduce the speed of any active 1 Gigabit per second (Gb/s) or higher ethernet</p>
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	network link when transitioning to sleep or off-with-WOL mode.]
6.2.2.	When in sleep mode, the response to ‘wake events’, such as those via network connections or user interface devices, should happen with a latency of ≤ 5 seconds from the initiation of a wake event to the system becoming fully usable including rendering of display.
6.2.3.	The computer shall be placed on the market with the display sleep mode set to activate within 10 minutes of user inactivity.
6.2.4.	A computer with Ethernet capability shall have the ability to enable and disable a WOL function, if available, for sleep mode. A computer with Ethernet capability shall have the ability to enable and disable WOL for off mode if WOL from off mode is supported.
6.2.5.	Where a distinct sleep mode or another condition that provides sleep mode functionality exists, the mode shall be set to activate within 30 minutes of user inactivity. This power management function shall be activated before placing the product on the market.
6.2.6.	Users shall be able to easily activate and deactivate any wireless network connection(s) and users shall be given a clear indication with a symbol, light or equivalent, when wireless network connection(s) have been activated or deactivated.

7. INFORMATION TO BE PROVIDED BY MANUFACTURERS

Desktop computer, integrated desktop computer, and notebook computer	7.1.	From 1 July 2014
	7.1.1.	Manufacturers shall provide in the technical documentation and make publicly available on free-access websites the following information:
	(a)	product type and category as defined in Article 2 (one and only one category);

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- (b) manufacturer's name, registered trade name or registered trade mark, and the address at which they can be contacted;
- (c) product model number;
- (d) year of manufacture;
- (e) E_{TEC} value (kWh) and capability adjustments applied when all discrete graphics cards (dGfx) are disabled and if the system is tested with switchable graphics mode with UMA driving the display;
- (f) E_{TEC} value (kWh) and capability adjustments applied when all discrete graphics cards (dGfx) are enabled;
- (g) idle state power demand (Watts);
- (h) sleep mode power demand (Watts);
- (i) sleep mode with WOL enabled power demand (Watts) (where enabled);
- (j) off mode power demand (Watts);
- (k) off mode with WOL enabled power demand (Watts) (where enabled);
- (l) internal power supply efficiency at 10 %, 20 %, 50 % and 100 % of rated output power;
- (m) external power supply efficiency;
- (n) noise levels (the declared A-weighted sound power level) of the computer;
- (o) the minimum number of loading cycles that the batteries can withstand (applies only to notebook computers);
- (p) the measurement methodology used to determine information mentioned in points (e) to (o);
- (q) sequence of steps for achieving a stable condition with respect to power demand;
- (r) description of how sleep and/or off mode was selected or programmed;
- (s) sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode;
- (t) the duration of idle state condition before the computer automatically reaches sleep mode, or another condition which does not exceed the applicable power demand requirements for sleep mode;

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	<ul style="list-style-type: none"> (u) the length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power demand requirement than sleep mode; (v) the length of time before the display sleep mode is set to activate after user inactivity; (w) user information on the energy-saving potential of power management functionality; (x) user information on how to enable the power management functionality; (y) for products with an integrated display containing mercury, the total content of mercury as X,X mg; (z) test parameters for measurements: <ul style="list-style-type: none"> — test voltage in V and frequency in Hz, — total harmonic distortion of the electricity supply system, — information and documentation on the instrumentation, set-up and circuits used for electrical testing. <p>7.1.2. If a product model is placed on the market in multiple configurations the product information required under point 7.1.1 may be reported once per product category (as defined in Article 2), for the highest power-demanding configuration available within that product category. A list of all model configurations that are represented by the model for which the information is reported shall be included in the information provided.</p>
Notebook computer	<p>7.2. From 1 July 2014 If a notebook computer is operated by battery/ies that cannot be accessed and replaced by a non-professional user, in addition to the information specified in point 7.1, manufacturers shall provide in the technical documentation, and make available on free-access websites and on the external</p>

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	<p>packaging of the notebook computer, the following information ‘The battery[ies] in this product cannot be easily replaced by users themselves’.</p> <p>The information provided on the external packaging of the notebook computer shall be clearly visible and legible and it shall be provided in all the official languages of the country where the product is marketed.</p>
<p>[^{F3}Workstation, mobile workstation, desktop thin client and small-scale server]</p>	<p>7.3. From 1 July 2014</p> <p>7.3.1. Manufacturers shall provide in the technical documentation and make publicly available on free-access websites the following information:</p> <p>(a) product type as defined in Article 2 (one and only one category);</p> <p>(b) manufacturer’s name, registered trade name or registered trade mark, and the address at which they can be contacted;</p> <p>(c) product model number;</p> <p>(d) year of manufacture;</p> <p>(e) internal/external power supply efficiency;</p> <p>(f) test parameters for measurements:</p> <ul style="list-style-type: none"> — test voltage in V and frequency in Hz, — total harmonic distortion of the electricity supply system, — information and documentation on the instrumentation, set-up and circuits used for electrical testing. <p>(g) maximum power (Watts);</p> <p>(h) idle state power (Watts);</p> <p>(i) sleep mode power (Watts);</p> <p>(j) off mode power (Watts);</p> <p>(k) noise levels (the declared A-weighted sound power level of the computer;</p> <p>(l) the measurement methodology used to determine information mentioned in points (e) to (k).</p> <p>7.3.2. If a product model is placed on the market in multiple configurations the product information required under point 7.3.1 may be reported once per product category (as</p>

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defined in Article 2), for the highest power-demanding configuration available within that product category. A list of all model configurations that are represented by the model for which the information is reported shall be included in the information provided.

Textual Amendments

- F1** Deleted by 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 (Text with EEA relevance).
- F2** Substituted by Commission Regulation (EU) 2016/2282 of 30 November 2016 amending Regulations (EC) No 1275/2008, (EC) No 107/2009, (EC) No 278/2009, (EC) No 640/2009, (EC) No 641/2009, (EC) No 642/2009, (EC) No 643/2009, (EU) No 1015/2010, (EU) No 1016/2010, (EU) No 327/2011, (EU) No 206/2012, (EU) No 547/2012, (EU) No 932/2012, (EU) No 617/2013, (EU) No 666/2013, (EU) No 813/2013, (EU) No 814/2013, (EU) No 66/2014, (EU) No 548/2014, (EU) No 1253/2014, (EU) 2015/1095, (EU) 2015/1185, (EU) 2015/1188, (EU) 2015/1189 and (EU) 2016/2281 with regard to the use of tolerances in verification procedures (Text with EEA relevance).
- F3** Substituted by 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 (Text with EEA relevance).

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Changes and effects yet to be applied to the whole legislation item and associated provisions

- Signature words omitted by [S.I. 2019/539 Sch. 2 para. 17\(6\)](#)
- Annex 3 s. 2(7) omitted by [S.I. 2019/539 Sch. 2 para. 17\(7\)\(c\)\(iii\)](#)
- Annex 3 s. 2 word substituted by [S.I. 2019/539 Sch. 2 para. 17\(7\)\(c\)\(iv\)](#)
- Annex 3 s. 1 words substituted by [S.I. 2019/539 Sch. 2 para. 17\(7\)\(b\)](#)
- Annex 3 s. 2 words substituted by [S.I. 2019/539 Sch. 2 para. 17\(7\)\(c\)\(i\)](#)
- Annex 3 s. 2(2)(a) words substituted by [S.I. 2019/539 Sch. 2 para. 17\(7\)\(c\)\(ii\)\(aa\)](#)
- Annex 3 s. 2(2)(a) words substituted by [S.I. 2019/539 Sch. 2 para. 17\(7\)\(c\)\(ii\)\(bb\)](#)
- Annex 3 s. 2 words substituted in earlier amending provision [S.I. 2019/539, Sch. 2 para. 17\(7\)\(c\)\(i\)](#) by [S.I. 2020/1528 reg. 6\(3\)reg. 6\(4\)\(b\)\(xvi\)](#)