Nordic Ecolabelling of Computers

Version 7.0 • Draft for comment

Nordic Ecolabelling

In November 1989, the Nordic Council of Ministers adopted a measure to implement an official voluntary ecolabelling scheme, the Nordic Ecolabel, also known as the Swan. The organizations/companies listed below administer the Nordic Ecolabelling scheme on assignment from their national governments.

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Quotations may be made provided that Nordic Ecolabelling is stated as the source.

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What is a Nordic Ecolabelled computer?

Nordic Ecolabelled computers meet strict environmental requirements making their environmental impact among the lowest in their category.

The environmental issues associated with computers are mainly due to power consumption but also the amount of waste produced. Since the service life of a computer is often very short, discarded computers represent a considerable waste problem. They also contain hazardous substances such as flame retardants and phthalates.

The requirements in this document, which a computer must fulfil to be awarded the Nordic Ecolabel, focus on the following aspects:

- power consumption
- design (upgradeability and disassembling)
- plastics and their additives, e.g. flame retardants & phthalates
- packaging
- recycling of discarded products
- performance such as noise level, ergonomics and electrical and magnetic fields

Why choose the Nordic Ecolabel?

- Companies selling Nordic Ecolabelled computers may use the Nordic Ecolabel trademark in their marketing. The Nordic Ecolabel, the Swan, is a very well-known and well-reputed trademark in the Nordic region.
- The Nordic Ecolabel is a cost-effective and simple way of communicating environmental work and commitment to customers and suppliers.
- Environmentally suitable operations prepare the manufacturer for future environmental legislation.
- Environmental issues are complex. It can take a long time and extensive resources to gain an understanding of a specific area. The Nordic Ecolabel can be seen as an aid in this work.
- Nordic Ecolabel requirements cover not only environmental aspects but also ethical production.

What can carry the Nordic Ecolabel?

This criteria document address computers available on the market for consumers and businesses. An ordinary computer consists of a CPU (central processing unit), a display (monitor) and a keyboard. These parts can be licensed all together or separately. There are different computer types available on the market such as desktop computers (also called stationary), notebook computers (also called portable) and tablet computers (either a notebook with a touch screen or a slate computer which is a notebook without keyboard and with a touch screen). It is possible to license all of these. Small servers that basically are desktop computers can also be licensed. For more details see the section F about Small-Scale Servers below.

It is not possible to license peripherals, such as a mouse, an external storage (USB for example) or cables of different types etc. A standalone keyboard is exempted and can be licensed.

The following computers can be licensed.

A. Desktop Computer (display or keyboard can also be licensed individually)

B. Integrated Desktop Computer

C. Notebook computer (including slate)

D. Workstation

E. Thin Client

F. Small-scale Server

For definitions of the terms and computer types in this document se Annex I of this criteria.

Products not covered by the product type definitions in this document:

- Computer Servers, as defined in Energy Star Computer Server-specification;
- Small-scale Servers that are marketed and sold for use in data centre
- Handheld Computers including eReaders
- Mobile Thin Clients not meeting the definition of Notebook Computer
- Game Consoles
- Mobile phones and Smartphones
- Computer accessories such as mouse, modem, docking stations, external hard drive, USB memory stick
- Cathode-ray tube (CRT) displays
- Printers (see criteria document for imaging equipment.)

How to apply

The application must comply with "Regulations for Nordic Ecolabelling" and the requirements of this document. The applicant must submit the documentation specified (with the symbol ✉) under each individual requirement in Sections 1, 2 and 3.

Each requirement is marked with the letter R (requirement) and a number. All requirements must be fulfilled for the award of a licence.

Appendices 1-2 and 6-11 may be used to facilitate documentation when applying for a licence, but this is not mandatory.

Icons in the text

The text describes how the applicant shall demonstrate fulfilment of each requirement. There are also icons in the text to make this clearer. These icons are:

✉ Enclose

☺ Requirement checked on site

Application

Applications are made to the national ecolabelling organisation and the application is valid for 12 months. Applications may be processed by another ecolabelling organisation according to agreement between the organisations. The applicant is notified of this. Companies located outside the Nordic countries make applications to the national ecolabelling organisation of the primary market.

The application must consist of a completed application form together with all of the documentation required to demonstrate compliance with the requirements specified in the criteria document (this is specified for each requirement). The application form must specify in which Nordic countries the products in question are to be sold and the estimated turnover from the products in each country.

Further information and assistance may be available. Visit the relevant national website for information.

Sales in the Nordic region

Once granted, a licence is valid throughout the Nordic region. The licence document specifies in which Nordic countries the products are sold according to the information provided on the application. The products are published on Nordic Ecolabelling's website(s). The licensee undertakes to inform Nordic Ecolabelling of any changes as to where the product is sold. If the product is to be sold in other Nordic countries than those initially specified in the application, the licensee must provide written notification of this and submit any extra documentation required to Nordic Ecolabelling in the country that issued the license.

On-site inspection

In connection with handling of the application, Nordic Ecolabelling performs an on-site inspection to ensure adherence to the requirements. For such an inspection, data used for calculations, original copies of submitted certificates, test records, purchase statistics, and similar documents that support the application must be available for examination.

Costs

An application fee is charged to companies applying for a licence. There is an additional annual fee based on the turnover of the Nordic Ecolabelled computer.

Enquiries

Please contact Nordic Ecolabelling if you have any queries or require further information. See page 2 for addresses.

1 Environmental requirements

1.1 General description

R1 Description of the computer

Describe the computer and how it fulfils the definition of what can carry the Nordic Ecolabel.

☒ Description as specified above.

1.2 Power consumption

Power consumption for category A-F computers

This requirement is based on the energy efficiency requirements of Energy Star established by the U.S. Environmental Protection Agency and the U.S. Department of Energy. The Energy Star specifications are updated regularly. Requirements R3 and R4 below always refers to the most current version of the corresponding Energy Star specification. When a new version of an Energy Star specification is released products that have been licensed according to the previous version of the specification have to be relicensed within 6 months.

R2 On/Off switch

Products in categories A-E must have a visible On/Off switch.

☒ Description of the On/Off switch (Appendix 2, power consumption, can be used).

R3 Energy / power consumption of computer

The computer (A-F) must fulfil the requirements of the most current version of the Energy Star specification for computers. When a new version of an Energy Star specification is released products that have been licensed according to the previous version of the specification have to be relicensed within 6 month in order to continue being licensed. A link to current version of the Energy Star specification can be found on the following link www.svanen.se/en/computers.

Following requirements apply for Slate computers:

The AC-adapter must fulfil at least the requirements of ”International Efficiency Marking Protocol for External Power supplies” level V.

It must be possible to swap the battery. A replacement battery must be available as an option or spare part. The battery replacement can be done at a repair shop.

☒ The computer must be tested by a laboratory fulfilling requirement R32.

☒ Test report showing the fulfilment of the requirement. (Appendix 2, power consumption, can be used).

The following applies to Slate computers:

☒ A test report showing the fulfilment of the requirement for the external power supply.

☒ Declaration from the computer manufacturer that the battery requirement is fulfilled.

R4 Energy / power consumption of display

The display must fulfil the requirements of the most current version of the Energy Star specification for monitors/displays. When a new version of an Energy Star specification is released products that have been licensed according to the previous vision of the specification have to be relicensed within 6 month in order to still be licensed. A link to the current version can be found on the following link http://www.svanen.se/en/computers

☒ The display must be tested by a laboratory fulfilling requirement R32.

☒ Test report showing the fulfilment of the requirement. (Appendix 2, power consumption, can be used).

R5 Energy efficiency of external power supply

External power supply that is sold/delivered with Nordic Ecolabelled products shall meet the performance requirements under the International Efficiency Marking Protocol for External Power Supplies and include the level V marking.

Additional information on the Marking Protocol is available at www.energystar.gov/powersupplies

Single-output External Power Supplies shall meet level V requirements when tested using the *Test Method for Calculating the Energy Efficiency of Single-Voltage External Ac-Dc and Ac-Ac Power Supplies, Aug. 11, 2004*.

Multi-output External Power Supplies shall meet the level V requirements when tested using the *EPRI* 306 *Generalized Internal Power Supply Efficiency Test Protocol, Rev. 6.4.2*.

☒ The external power supply must be tested by a laboratory fulfilling requirement R32.

☒ Test report showing the fulfilment of the requirement. (Appendix 2, power consumption, can be used).

1.3 Design and materials

Design

R6 Disassembly

Computers and displays must be designed in such a way that disassembly is possible. The requirement consists of the following individual requirements:

- A qualified person, working alone, must be able to disassemble the product.
- The manufacturer must ensure that disassembly of the unit is possible and compile disassembly instructions demonstrating that:
  - connections are easy to locate and access and easily separable with generally available tools.
  - connections are, where possible, standardized.
- It must be possible to separate the substances, preparations and components listed in ANNEX VII of the WEEE Directive (2012/19/EU).
- If labels are required they shall be easily removable or integrated. This does not apply to safety labels according to CENELEC safety standard EN 60850 §1.7.2.
- Plastic parts heavier than 25 g must be composed of one polymer or compatible polymers, except for the enclosure, which shall consist of no more than two types of polymers that are separable.
- Plastic parts (>25 g) may contain metallic inlays provided that these can easily be separated without the use of special tools.
- 90% by weight of plastics and metals in the enclosure and chassis must be technically suitable for material recovery.

✉ Disassembly instructions and a declaration from the manufacturer of the computer showing that the requirements are met (Appendix 3, Design, may be used).

The ecolabelling organization may request a demonstration of disassembly, if this is considered necessary. The demonstration may take the form of a video film or an inspection visit by the ecolabelling organization. The licence applicant may also choose to arrange for a third party to verify that the product fulfils the requirements. The products that are checked must be selected randomly. The licence applicant will bear the cost of verification.

Upgradeability

R7 Upgradeability

Categories A, B, D and F computers

A category A, B, D or F computer must be modular. The user shall be able to replace the modules without the use of special tools and it shall be possible to upgrade the computer by:

- primary memory expansion
- installation, exchange and expansion of mass storage
- installation and/or exchange of CD ROM, DVD and hard disk drive
- at least one additional interface for external storage media and other peripheral devices.

Category C computers

The design of category C (excluding slate) computers must permit performance expansions (upgrades). At a minimum, the following expansions must be possible:

- primary memory expansion
- port for external monitor
- port for external keyboard and mouse
- at least one additional interface for external storage media and other peripheral devices.

For category C, slate computers, the following are required:

- primary memory (RAM) capacity shall minimum 1 GB
- storage capacity shall be minimum 18 GB
- storage expansion slot (example a SDHC slot)
- minimum 1 expansion port (contact) following industry standard for accessories
- support for external monitor, keyboard and mouse

✉ Declaration from the computer manufacture that the requirement is fulfilled (Appendix 4, Upgradeability, can be used).

The ecolabelling organization may request a demonstration of disassembly, if this is considered necessary. The demonstration may take the form of a video film or an inspection visit by the ecolabelling organization. The licence applicant may also choose to arrange for a third party to verify that the product fulfils the requirements. The products that are checked must be selected randomly. The licence applicant will bear the cost of verification.

Plastics

R8 Chlorine-based plastics

The enclosure and chassis must not contain chlorine-based plastics.

✉ Declaration from the computer manufacturer, showing that the requirement is met (Appendix 5, Plastics, can be used).

R9 Paint and metal

Plastic parts >25 g must not be painted or metallized.

Exempted from this requirement are:

- Notebook computers.
- Fog paint with max. 1w-% paint per plastic part.
- Coatings made from the base polymer.

✉ Declaration from the computer manufacturer, showing that the requirement has been met (Appendix 5, Plastics, can be used).

R10 Marking of plastics

Plastic parts > 25 g must carry permanent labelling specifying the material in accordance with the latest versions of ISO 11469 and ISO 1043, sections 1 to 4.

This requirement does not apply to extruded plastics or light conductors in flat displays. Plastic parts covering a flat surface of less than 200 mm^2 are also exempted from this requirement.

✉ Declaration from the computer manufacturer, showing that the requirement has been met (Appendix 5, Plastics, can be used).

R11 Flame retardants in plastics

Flame retardants are assessed on flame retardant product level, i.e. not on their individual ingredient level.

The use of flame retardants that can be assigned one or more of the following risk phrases at the time of application, in accordance with EU chemical legislation, is prohibited:

H350 (R45) (may cause cancer)

H340 (R46) (may cause heritable genetic damage)

H360F (R60) (may impair fertility)

H360D (R61) (may cause harm to the unborn child).

H400 and H410 (R50/53) (Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment)

H411 (R51/53) (Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment)

Plastic parts must not contain halogenated organic flame retardants.

The maximum permitted concentration for impurities is 0.1% by weight in homogeneous material.

The manufacturer of the flame retardant must certify that there are reasonable grounds for concluding that the flame retardant used cannot be considered to have the health and environmental effects according to the risk phrases listed above.

Exempted from the requirement are:

- Printed circuit boards and cable insulations. These parts must not, however, contain any PBB (polybrominated biphenyls), PBDE (polybrominated diphenyl ethers), decaBDE or chlorinated paraffin's (maximum permitted concentration for impurities is 0.1% by weight in homogeneous material).
- Plastic parts < 25 g. These parts must not, however, contain any PBB (polybrominated biphenyls), PBDE (polybrominated diphenyl ethers), decaBDE or chlorinated paraffin's (maximum permitted concentration for impurities is 0.1% by weight in homogenous material).
- Plastic parts that are demonstrably reused and marked in accordance with requirement R10. These parts must not, however, contain any PBB (polybrominated biphenyls), PBDE (polybrominated diphenyl ethers), decaBDE or chlorinated paraffin's.
- Flouroorganic additives which are used to improve the physical properties of plastic provided they are not present in concentrations greater than 0.5% by weight.

☒ The computer manufacturer must provide a list with all plastic parts > 25g in the product and information about which plastic they are made of, and declare that the requirement regarding halogenated organic flame retardants is fulfilled. Appendix 6, Plastics in computer, Computer manufacturer's Declaration must be used.

☒ Declaration from the manufacturer of the plastic (resin) in plastic parts >25g of which flame retardants that are used in the plastic by completing Appendix 7, Flame retardants in plastics, Plastic manufacturers' Declaration.

☒ The manufacturer of flame retardants, used in plastics in plastic parts > 25g, must certify that the requirements for flame retardants are fulfilled by filling out Appendix 8, Flame retardant manufacturer's declaration, and submit an MSDS for each flame retardant.

Confidential information can be sent directly to Nordic Ecolabelling.

R12 Softenerts/Phthalates

The External power cable delivered with the computer, or the display, must be free from phthalates listed on the REACH Candidate List[1]. Reference shall be made on the date of application.

[1] article 59(1) of Regulation (EC) No 1907/2006

The maximum permitted concentration for impurities is 0.1% by weight in homogeneous material.

✉ The manufacturer of the computer must certify that the requirement is fulfilled and include a specification of the material that is used in the cable.

R13 Nickel in metal parts

Metal parts that may come in contact with the skin during normal use of the computer must not contain nickel.

✉ Declaration from the manufacturer that the requirement is fulfilled.

R14 Mercury in LCD displays

Mercury is prohibited in background lighting in all displays.

✉ Declaration from the computer manufacturer that the requirement is fulfilled.

R15 Nano metals

Nano metals, for example nano silver, nano gold and nano copper, shall not actively have been added to, or be part of, the surface of the product.

Nano particles here are defined as industrially produced particles with at least one of its dimensions under 100 nm. Traces of nano particles that not have been added in order to give the product a certain property are exempted from this requirement.

✉ Declaration from the computer manufacturer that nano metals have not actively been added to the surface of the product or are part of the product´s surface.

R16 Recycled material in packaging

When cardboard boxes are used, they shall be made of at least 80% post-consumer recycled material.

✉ Declaration of compliance from computer manufacturer. Only primary packaging, as defined in Directive Packaging, is subject to the requirement (Appendix 9, Packaging may be used).

R17 Plastic materials in packaging

Plastic material used as packaging material must not consist of, or contain, halogenated organic substances.

✉ Declaration from the computer manufacturer. Description of the packaging materials used (Appendix 9, Packaging may be used).

User information

R18 Instructions for use

The following information must be provided to consumers, for example in the instruction manual or information sheets for the individual product:

- Recommendations on the use of the energy-saving functions. This must include information about the effect that power consumption, and accordingly operating costs, may increase if these functions are deactivated.
- Information on the power consumption of the computer during operation, in energy-saving mode and in off-mode. Information about the effect that the consumption of mains current can be reduced to zero if the plug of the computer or the power source of the portable computer is removed or if the mains socket is turned off.
- Maximum declared sound power (A-weighted sound power level according to ISO 7779 and ISO 9296) during operation and in idle mode.
- Information on the guarantee and the availability of spare parts.
- Information on the design of the equipment and expansion or upgrading of for example the processor, memory and clock frequency.
- Information on the type of batteries and accumulators used and on the user's obligation to leave used batteries and accumulators at a return station and not dispose of them with household waste.
- Information that the product has been designed to permit the reuse and recycling of parts.
- Advice on how used products and their packaging are recycled or disposed of in an environmentally acceptable way (deposit system, handling and recycling as well as scrapping) by the manufacturer or a third party. Information shall also be provided on where users can dispose of used products.
- Information on how the customer can use the service and support function.
- Statement that the product has been granted a Nordic Ecolabel and a short account of what this means with references to further information about Nordic Ecolabelling on the Internet (http://www.svanen.se).
- The instructions must state that the regulations in force in the country/municipality in question must be observed when disposing of batteries and accumulators.
- The instructions for use must be in the official language(s) of the Nordic country in which the Nordic Ecolabelled product is sold.
- The instruction manual must be available in printed or electronic form. If the manual is made available in an electronic form, information on how the computer is connected and started and information on how to print out the manual must be provided in printed form.

✉ A copy of the manual or copies of the relevant pages

Performance

R19 Noise emission

Computers must fulfil the requirements as to maximum (A-weighted) sound power level LwAd (bel(A)) during operation and idle mode in accordance with the following:

	Operating, LwAd	**Idle mode, LwAd**
Category A, B and D	4.2 bel (A)	3.8 bel (A)
Category C and E	4.0 bel (A)	3.5 bel (A)
Category F	Sound report (for information purpose)	

Operating (HDD load): The hard- disk drive is activated (RAL-UZ-78 3.2.2.1 (1) or ISO7779/A1:2001, No C.9.3.2).

E.g.: Test programme "Diskload" of all HDD with parameter: "Diskload c: -t7200 dac960_loc c:12" (c=Drive name).

Idle mode: The computer operates in Idle mode (RAL-UZ-78 3.2.2.1 (3) or ISO7779:2001, No C. 15.3.1). The OS is running, but no additional programme is started. HDD is running without I/O (only spindle motor in operation). All other devices are connected but not activated.

The sound power level of computers must be measured in accordance with ISO 7779 or RAL-UZ 78 and declared in accordance with ISO 9296. If the sound power level measurement is carried out on one appliance only the factor K = 3.0 dB(A) shall be added to the measured value. Factor K allows for measurement errors when the same device is tested using the same method at different times under different conditions and for deviations in production.

✉ Test report showing that the requirement is fulfilled.

R20 Ergonomics

Displays and notebook computers must, with regard to ergonomics, be tested and meet all relevant mandatory requirements in the latest valid version of the standards of ISO 9241-300 series.

Alternatively, displays must be certified according to TCO Displays 5.0 or later version, and notebook computers must be certified according to TCO Notebooks 3.0 or later version.

External keyboards sold with computers in category A and D shall comply with and be tested according to ISO 9241-4.

The following additional requirements apply for a Slate computer:

- The display size shall be minimum 7 inches.
- The slate computer shall have a virtual keyboard that is full size in the meaning that standard positioning of fingers is possible.

✉ Certificate from the computer manufacturer that the additional requirements on the Slate computer are fulfilled (when applicable).

At least one of the following documentation requirements must be fulfilled.

☒ A certificate from the computer manufacturer confirming that all relevant mandatory requirements of the latest version of the standards of ISO 9241-300 respectively ISO 9241-4 are met. The certificate shall be signed by the person at the computer manufacturer´s who has the ultimate responsibility for the products´ specification. An organization chart in which the above person's position is indicated shall be submitted.

☒ The TCO certificate for the product. For displays, TCO Displays V5.0 or later, for notebook computers, TCO Notebooks 3.0 or later.

R21 Electric and magnetic fields

Displays and notebook computers must fulfil the requirements applicable to electrical and magnetic fields in accordance with SS 436 14 90, category A.

During measurement the portable computer must be connected to a Class 1 AC adapter with a grounded plug. The requirement also applies when the notebook computer is connected to a docking unit.

At least one of the following documentation requirements must be fulfilled.

☒ Certificate from manufacturer of the computer:
A certificate confirming that the requirements concerning electric and magnetic fields according to SS 436 14 90, category A, are met. The certificate must be signed by the person who has the ultimate responsibility for the design of the product. An organization chart showing the position of this person must be included. Measurement results with a description of the method of measurement used and details of who performed the measurement.

☒ TCO certificate:
The TCO certificate for the product. For displays TCO Display V5.0 or later, for portable computers TCO Notebooks 3.0 or later.

2 Quality and regulatory requirements

R22 Working conditions

The licensee must have a code of conduct that requires adherence to the ten principles of the UN Global Compact.

The licence holder must ensure that the code of conduct is communicated to all suppliers/subcontractors together with a request that these also should comply with a code of conduct that follows the ten principles provided for the United Nations Global Compact.

NB: The principles embodied in the United Nations Global Compact include the following: human rights, employee rights, environmental protection and anti-corruption safeguards. Further information can be found at http://www.unglobalcompact.org .

If the licensee violates this code of conduct, Nordic Ecolabelling may revoke their licence.

✉ Copy of the license holder's "Code of Conduct".

✉ Description of the way in which subcontractors and producers are notified of the license holder's code of conduct and of the license holder's request that they have a code of conduct in place that follows the ten principles in the United Nations Global Compact.

R23 Nordic Ecolabel administrator

The company shall appoint an individual responsible for ensuring the fulfilment of Nordic Ecolabel requirements, and a contact person for communications with Nordic Ecolabelling. Preferably, this should be one and the same person.

✉ A chart of the company's organizational structure detailing who is responsible for the above.

R24 Documentation

The licensee must be able to present a copy of the application, and factual and calculation data supporting the documents submitted on application (including test reports, documents from suppliers and suchlike).

☺ Checked on site.

R25 Quality of the product

The licensee must guarantee that the quality in the production of the Nordic Ecolabelled computer is maintained throughout the validity period of the licence.

✉ Procedures for collating and, where necessary, dealing with claims and complaints regarding the quality of the Nordic Ecolabelled computer.

R26 Service and support

The licensee shall offer the possibility of service and support in the official Nordic language where the Nordic Ecolabelled product is sold.

✉ Description of the service and support organisation.

R27 Planned changes

Written notice must be given to Nordic Ecolabelling of planned changes in products and markets that have a bearing on fulfilment of Nordic Ecolabel requirements.

✉ Procedures detailing how planned changes in products and markets are handled.

R28 Unplanned nonconformities

Unplanned nonconformities that have a bearing on fulfilment of the ecolabelling requirements must be reported to Nordic Ecolabelling in writing and journalled.

✉ Procedures detailing how unplanned nonconformities are handled.

R29 Traceability

The licensee must have a traceability system for the production of the Nordic Ecolabelled computer and describe the development and production units used to manufacture the computer. This applies also to suppliers that produce significant parts of the computer.

✉ Description of/procedures for the fulfilment of the requirement. A chart of the company's organizational structure detailing who is responsible for the above development and production units.

R30 Take-back system

Pertinent national producer responsibility regulations, legislation and/or agreements within the sector regarding the recycling systems for products and packaging shall be met in the Nordic countries in which the Nordic Ecolabelled computer is marketed.

✉ Declaration from the applicant regarding adherence to existing recycling/take-back agreements.

R31 Laws and regulations

The licensee must guarantee adherence to safety regulations, working environment legislation, environmental legislation and conditions/concessions specific to the operations at all sites where the Nordic Ecolabelled product is manufactured.

No documentation is required, but Nordic Ecolabelling may revoke the licence if the requirement is not fulfilled.

R32 Marketing

Marketing of the Nordic Ecolabelled computer must comply with "Regulations for the Nordic Ecolabelling of products".

☒ Appendix 1 duly completed.

3 Requirements on the analysis laboratory

R33 Analysis laboratory

The analysis laboratory used shall fulfil the general requirements of standard EN ISO 17025 or have official GLP status.

The applicant shall be liable for the documentation and analysis costs.

The applicant's analysis laboratory/test procedure may be approved for analysis and testing if:

- the analyses and tests are monitored by the authorities, or if
- the manufacturer has a quality management system encompassing sampling and analysis and has been certified to ISO 9001 or ISO 9002, or
- the manufacturer can demonstrate agreement between a first-time test conducted at the manufacturer's own laboratory and testing carried out in parallel at an independent test institute.

☒ Certification from the analysis laboratory that the requirements are fulfilled.

☒ Appendix 10 duly completed.

Marketing

The Nordic Ecolabel, the Swan, is a very well-known and well-reputed trademark in the Nordic region. A Nordic Ecolabelled computer may be marketed using the Nordic Ecolabel so long as the associated licence is valid.

The label must be positioned so that there is no doubt as to what the label refers and so that it is clear that the computer is ecolabelled.

More information on marketing can be found in "Regulations for the Nordic Ecolabelling of products" of 22 June 2011 or later version.

Design of the Nordic Ecolabel

Design of the Nordic Ecolabel:



Licence number

Each licence has a unique licence number that must be displayed along with the label.

More information on the design of the label can be found in "Regulations for the Nordic Ecolabelling of products" of 22 June 2011 or later version.

Follow-up inspections

Nordic Ecolabelling may decide to check whether the computer fulfils Nordic Ecolabel requirements during the licence period. This may involve a site visit, random sampling or similar test.

The licence may be revoked if it is evident that the computer does not meet the requirements.

Random samples may also be taken in-store and analysed by an independent laboratory. If the requirements are not met, Nordic Ecolabelling may charge the analysis costs to the licensee.

How long is a licence valid?

Nordic Ecolabelling adopted version 7.0 of the criteria for computers on XX XX. The criterion is valid until XX XX.

An Ecolabel licence is valid providing the requirements are fulfilled and until the criterion expire. The validity period of the criteria may be extended or adjusted, in which case the licence is automatically extended and the licensee informed.

Revised criteria shall be published at least one year prior to the expiry of the present criteria. The licensee is then offered the opportunity to renew their licence.

New criteria

In a forthcoming revision it might be of interest to take a look on some of the following requirements. The knowledge about available flame retardants increases and halogen free alternatives are developed.

- The LCD module manufacturing, emission of greenhouse gases (sulphur hexafluoride, SF_6 and others)
- Flame retardants in plastic (alternatives, documentation / assessment of the properties)
- Additives in plastic (phthalates)
- Reused plastic and bio plastic
- Electric and magnetic fields (also from wireless communication)
- Ergonomic requirements
- Packaging

Annex I, Definition of computer and computer types.

Definitions of a computer

A computer is a device which performs logical operations and processes data. For the purposes of this specification, computers include both stationary and portable units, including desktop computers, integrated desktop computers, notebook computers, small-scale servers, thin clients, and workstations. Although computers are capable of using input devices and displays, such devices are not required to be included with the computer upon shipment. Computers are composed of, at a minimum:

a) A central processing unit (CPU) to perform operations. If no CPU is present, then the device must function as a client gateway to a server which acts as a computational CPU;

b) User input devices such as a keyboard, mouse, or touchpad; and

c) An integrated display screen and/or the ability to support an external display screen to output information.

Definition of a display:

A display screen and associated electronics encased in a single housing, or within the computer housing (e.g. notebook or integrated desktop computer), that is capable of displaying visual information from a computer via one or more inputs (e.g. VGA, DVI, HDMI, Display Port, IEEE 1394). Examples of computer display technologies are the cathode-ray tube (CRT) and liquid crystal display (LCD).

Different computer types

As mentioned above there are several different computer types and parts of the computer system. These are grouped into six categories, known as A-F, in this document. Computer types that comply with these definitions can be licensed.

A. Desktop Computer

A Desktop Computer is a computer whose main unit is designed to be located in a permanent location, often on a desk or on the floor. Desktop computers are not designed for portability and are designed for use with an external display, keyboard, and mouse. Desktop computers are intended for a broad range of home and office applications.

B. Integrated Desktop Computer

An Integrated Desktop Computer is a desktop computer in which the computing hardware and display are integrated into a single housing, and which is connected to AC mains power through a single cable. Integrated desktop computers come in one of two possible forms: (1) a system where the display and computer are physically combined into a single unit; or (2) a system packaged as a single system where the display is separate but is connected to the main chassis by a DC power cord and both the computer and display are powered from a single power supply.

C. Notebook computer

A computer designed specifically for portability and to be operated for extended periods of time either with or without a direct connection to an AC power source. Notebook computers include an integrated display and are capable of being powered by an integrated battery or other portable power source. In addition, most notebooks use an external power supply and have an integrated keyboard and pointing device. Notebook computers are typically designed to provide similar functionality to desktops, including operation of software similar in functionality to that used in desktops.

a) Tablet Computer: A Notebook Computer with a reversible touch-sensitive screen and a non-detachable physical keyboard. For the purposes of this specification, Tablet Computers are subject to all Notebook Computer requirements.

b) Slate Computing Device: A computer is a Slate Computing Device if it has all of the following characteristics:

(1) either lacking a physical keyboard or has a detachable physical keyboard,

(2) relying solely on touchscreen input,

(3) having solely a wireless network connection (e.g., Wi-Fi, 3G), and

(4) primarily powered by an internal battery (with connection to the mains for charging, not primary powering of the device).

c) Mobile Thin Client: A computer meeting the definition of a Thin Client, designed specifically for portability, and also meeting the definition of a Notebook Computer. These products are considered to be Notebook Computers for the purposes of this specification.

D. Workstation

A high-performance, single-user computer, typically used for graphics, CAD, software development, financial and scientific applications among other compute intensive tasks. Workstations covered by this specification (a) are marketed as a workstation; (b) provide mean time between failures (MTBF) of at least 15,000 hours (based on either Bellcore TR-NWT-000332, issue 6, 12/97 or field collected data); and (c) support error-correcting code (ECC) and/or buffered memory. In addition, a workstation meets three or more of the following criterion:

1) Provides supplemental power support for high-end graphics (e.g., PCI-E 6-pin 12V supplemental power feed);

2) Wired for greater than x4 PCI-E on the motherboard in addition to the graphics slot(s) and/or PCI-X support;

3) Does not provide support for Uniform Memory Access (UMA) graphics;

4) Provides 5 or more PCI, PCI-E, or PCI-X slots;

5) Provides multi-processor support for 2 or more processors (shall support physically separate processor packages/sockets, i.e., requirement cannot be met with support for a single multi-core processor); and/or

6) Qualification by 2 or more Independent Software Vendor (ISV) product certifications; these certifications can be in process, but shall be completed within 3 months of qualification.

E. Thin Client

An independently-powered computer that relies on a connection to remote computing resources (e.g., computer server, remote workstation) to obtain primary functionality. Main computing functions (e.g., program execution, data storage, interaction with other Internet resources) are provided by the remote computing resources. Thin Clients covered by this specification are (1) limited to devices with no rotational storage media integral to the computer and (2) designed for use in a permanent location (e.g. on a desk) and not for portability.

a) Integrated Thin Client: A Thin Client in which computing hardware and display are integrated into a single housing, and which is connected to ac mains power through a single cable. Integrated Thin Client computers come in one of two possible forms: (1) a system where the display and computer are physically combined into a single unit; or (2) a system packaged as a single system where the display is separate but is connected to the main chassis by a dc power cord and both the computer and display are powered from a single power supply. As a subset of Thin Clients, Integrated Thin Clients are typically designed to provide similar functionality as Thin Client systems.

b) Ultra-thin Client: A computer with lesser local resources than a standard Thin Client that sends raw mouse and keyboard input to a remote computing resource and receives back raw video from the remote computing resource. Ultra-thin clients cannot interface with multiple devices simultaneously nor run windowed remote applications due to the lack of a user-discernible client operating system on the device (i.e., beneath firmware, user inaccessible).

F. Small-scale Server

A computer that typically uses desktop components in a desktop form factor, but is designed primarily to be a storage host for other computers. Small-scale Servers are designed to perform functions such as providing network infrastructure services (e.g., archiving) and hosting data/media. These products are not designed to process information for other systems or run web servers as a primary function. A Small-scale Server has the following characteristics:

a) Designed in a pedestal, tower, or other form factor similar to those of desktop computers such that all data processing, storage, and network interfacing is contained within one box/product;

b) Designed to operate 24 hours/day, 7 days/week, with minimal unscheduled downtime (on the order of hours/year);

c) Capable of operating in a simultaneous multi-user environment serving several users through networked client units; and

d) Designed for an industry accepted operating system for home or low-end server applications (e.g., Windows Home Server, Mac OS X Server, Linux, UNIX, Solaris).

Appendix 1 Marketing of Nordic Ecolabelled computers (R31)

We hereby certify that we are well acquainted with the regulations governing the use of the Nordic Ecolabel, as detailed in "Regulations for the Nordic Ecolabelling of products" 22 June 2011 or later version. We agree to follow these regulations when marketing Nordic Ecolabelled computers.

Further, we confirm that we are familiar with the criteria document regarding the Nordic Ecolabelling of computers.

We undertake to advise those individuals within the company involved in marketing the Nordic Ecolabelled computers of the criteria for the Nordic Ecolabelling of computers and "Regulations for the Nordic Ecolabelling of products".

Location and date	Company
Contact person	Phone
Marketing director	Phone

In case of a change in personnel, a new declaration must be submitted to Nordic Ecolabelling.

Appendix 2 Power consumption (R2-R6)

If this appendix is used, the test results and the following information must also be submitted: descriptions of the test methods and details of who performed the power consumption measurements.

Type of product for which the Nordic Ecolabel is sought:

☐ Category A-F. Type:_____

☐ Display ☐ External power supply

Name of product:_____

Is the product equipped with a visible and easily accessible On/Off switch? ☐ Yes ☐ No

Submit description of On/Off switch.

Category A-F

Does the product fulfil the current Energy Star specification for computers? ☐ Yes ☐ No

Is a report demonstrating fulfilment of the requirements enclosed with the application? ☐ Yes ☐ No

Displays

Does the product fulfil the current Energy Star specification for monitors/displays? ☐ Yes ☐ No

Is a report demonstrating fulfilment of the requirements enclosed with the application? ☐ Yes ☐ No

External power supplies

Does the product meet the performance requirements under the International Efficiency Marking Protocol for External Power Supplies and include the level V marking? ☐ Yes ☐ No

Is a report demonstrating fulfilment of the requirements enclosed with the application? ☐ Yes ☐ No

Computer manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 3 Design (R6)

If this appendix is used, disassembly instructions must also be submitted.

Type of product for which the Nordic Ecolabel is sought:

☐ Category A-F. Type:_____

☐ Display

Name of product:_____

The following requirements must be fulfilled:	Requirement fulfilled?	
A qualified person, working alone, must be able to disassemble the product.	☐ Yes	☐ No
The computer manufacturer must ensure that disassembly of the unit is possible and compile disassembly instructions demonstrating that: ▪ connections are easy to locate and access and easily separable with generally available tools. ▪ connections are, where possible, standardized.	☐ Yes	☐ No
It must be possible to separate the substances, preparations and components listed in ANNEX VII of the WEEE Directive (2012/19/EU).	☐ Yes	☐ No
If labels are required they shall be easily removable or integrated. This does not apply to safety labels according to CENELEC safety standard EN 60850 §1.7.2.	☐ Yes	☐ No
Plastic parts heavier than 25 g must be composed of one polymer or compatible polymers, except for the enclosure, which shall consist of no more than two types of polymers that are separable.	☐ Yes	☐ No
Plastic parts (>25 g) may contain metallic inlays provided that these can easily be separated without the use of special tools.	☐ Yes	☐ No
90% by weight of plastics and metals in the enclosure and chassis must be technically suitable for material recovery.	☐ Yes	☐ No

Computer manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 4 Upgradeability (R7)

Type of product for which the Nordic Ecolabel is sought:

☐ Category A-F. Type:_____

☐ Display

Name of product:_____

Stationary computers (Category A, B, D and F)

Does the system unit of a stationary computer have a modular design?	☐ Yes	☐ No
Can the user replace the modules without the use of special tools?	☐ Yes	☐ No
Can the working memory be expanded?	☐ Yes	☐ No
Can a mass storage device be installed, exchanged and expanded?	☐ Yes	☐ No
Can a CD ROM, DVD or hard disk drive be installed and/or exchanged?	☐ Yes	☐ No
Does the computer have a minimum of one additional interface for external storage media and other peripheral devices?	☐ Yes	☐ No

Notebook computers (Category C)

Can the working memory be expanded?	☐ Yes	☐ No
Does the notebook computer have ports for an external monitor and for an external keyboard and mouse?	☐ Yes	☐ No
Does the computer have a minimum of one additional interface for external storage media and other peripheral devices? (Slate computer exempted)	☐ Yes	☐ No

Computer manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 5 Plastics (R9, R9 and R10)

Type of product for which the Nordic Ecolabel is sought:

☐ Category A-F. Type:_____

☐ Display

Name of product:_____

Does the enclosure or chassis contain chlorine-based plastics?	☐ Yes	☐ No
Have large plastic parts (>25 g) been coated or metallized?	☐ Yes	☐ No
Are all plastic parts heavier than 25 g and with a surface in excess of 200 mm2 labelled in accordance with ISO 11 469 or ISO 1043, sections 1 to 4?	☐ Yes	☐ No

Computer manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 6, Plastic parts >25 g in computer, Computer Manufacturer's Declaration

Type of product for which the Nordic Ecolabel is sought:

☐ Category A-F. Type:_____

☐ Display

Name of product: _____

List of all plastic parts > 25 g in the product

Plastic Manufacturer	Trade name of plastic	Used in component:	Supplied by:

Halogenated organic flame retardants

Are the requirements regarding halogenated organic flame retardants fulfilled? ☐ Yes ☐ No

Computer Manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 7 Flame retardants in plastics, Plastic Manufacturers´ declaration

We, the manufacturer of the plastics, declare that the plastics listed below in the table do not contain other flame retardants than those declared in the same table.

Nordic Ecolabelling must be informed beforehand if any changes to the plastics are made regarding the flame retardants.

Plastic products from plastic manufacturer

Plastic's trade name	Trade name of flame retardant in plastic,	Flame retardant's CAS no.	Manufacturer of flame retardant

Plastic manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 8 Flame retardants, Flame Retardant Manufacturer's Declaration

To be completed by the manufacturer of the flame retardant and sent to Nordic Ecolabelling.

We hereby declare that (name and CAS # of the flame retardant)

_____

is not a halogenated flame retardant and may not be assigned, at the time of application, any of the risk phrases: H350 (R45); H340 (R46); H360F (R60); H360D (R61), H400 and H410 (R50/53) or H411 (R51/53) as defined according to Regulation (EC) No 1272/2008 or as defined according to the Directives 67/548/EEC and 1999/45/EEC

Background information on not classifying the flame retardant according to risk phrases H350 (R45); H340 (R46); H360F (R60); H360D (R61), H400 and H410 (R50/53) or H411 (R51/53):

Specify below appropriate information on the classification of the flame retardant. (The statement "No data available" is not accepted!)

_____

_____

_____

_____

_____

_____

_____

_____

Flame retardant´s manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 9 Packaging (R15 and R16)

Type of product for which Nordic Ecolabel is sought:

☐ Category A-F. Type:_____

☐ Display

Name of product:_____

The following requirements must be fulfilled:	Is the requirement fulfilled:	
When cardboard boxes are used, they shall be made of at least 80% post-consumer recycled material.	☐ Yes	☐ No
Plastic material used as packaging material must not consist of, nor contain, halogenated organic substances.	☐ Yes	☐ No

Computer manufacturer:

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	

Appendix 10 Requirements for the analysis laboratory (R32)

The analysis laboratory used shall be accredited standard EN ISO 17025 or have official GLP status.

The applicant's own analysis laboratory/test procedure may be approved for analysis and testing if one of the following is fulfilled:	☐ Yes	☐ No
Does the analysis laboratory hold official GLP status?	☐ Yes	☐ No
Are sampling and testing monitored by the authorities?	☐ Yes	☐ No
Has the analysis laboratory a quality management system encompassing sampling and analysis that is certified to ISO 9001 or ISO 9002?	☐ Yes	☐ No
Can the analysis laboratory demonstrate agreement between a first-time test conducted at the manufacturer's own laboratory and testing carried out in parallel at an independent test institute?	☐ Yes	☐ No

Submit documentation that provides proof of the above.

Location and date	Phone
Company	
Contact person, signature	
Name in block capitals	