

Swedish Society for Nature Conservation
Good Environmental Choice

Electricity

Criteria 2021:3

Updated 2025-08-14
Reviewed 2025-08-14



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NOTE: This text is a translation. The original Swedish version always prevails.

Good Environmental Choice

Ecolabel of the Swedish Society for Nature Conservation

The Swedish Society for Nature Conservation (SSNC) is a non-profit organisation that is independent of political and religious affiliations. We are driven by an ambition to preserve the environment and protect people's health. It is partially due to us that seals, sea-eagles and peregrine falcons are no longer endangered species in Sweden. We promote biodiversity, and strive to prevent climate change, acidification, eutrophication, the spread of dangerous chemicals and much more besides.

However, it is not enough to protect nature in reserves or stop individual polluters. We need to reduce our total environmental impact. Companies that adapt their production methods and products to reduce the burden on the environment play a vital role in this work.

Good Environmental Choice is SSNC's own ecolabel and one of the tools we use to drive development towards a sustainable society. Good Environmental Choice demands high environmental standards from the products and services that it approves for labelling.

Good Environmental Choice is what the industry calls a Type I ecolabel – a third-party certification scheme that operates independently from all the parties involved. Good Environmental Choice is a member of the Global Ecolabelling Network (GEN). To ensure that Good Environmental Choice meets the requirements for a quality assured system, the ecolabel has been audited under the Global Ecolabelling Network's Internationally Coordinated Ecolabelling System (GENICES).

Thanks to Good Environmental Choice, hundreds of products have been reformulated and environmentally adapted, with the ecolabel generating concrete results. For example, Good Environmental Choice has helped to ensure that phosphates have been phased out and banned in laundry detergents within the EU. The Good Environmental Choice label for grocery shops drove the development of the first ecolabelled, non-mercury-based button cell battery and got manufacturers of sound greetings cards to use these for the entire Swedish market.

Another example is that electricity labelled with Good Environmental Choice has placed demands on the water flow through hydroelectric power plants, and, through this, benefited plants and animals in the affected rivers. In addition, the label encourages energy efficiency measures and the building of fish ladders so that fish can bypass hydropower stations. Good Environmental Choice also helps consumers to choose the means of transport with the lowest environmental impact, while ecolabelled insurance companies are subject to environmental requirements concerning asset management.

Public procurement is a powerful tool for driving sustainable development. When municipalities, regions and government agencies choose eco-labelled products and services in their procurements, it can have a major impact. Good Environmental Choice serves as a support in this work – by setting high and independent environmental requirements, the label makes it easier for procuring entities to make sustainable decisions. The eco-label also facilitates the follow-up of whether set environmental requirements are actually met, which contributes to increased transparency and quality assurance in the procurement process.

Consumers place a great deal of trust in the Good Environmental Choice label, giving licence holders competitive advantages.



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Introduction

Electricity labelled with Good Environmental Choice is one of the tools used by the Swedish Society for Nature Conservation to advance the development of a more sustainable energy supply and efficient energy use.

In this 2021 update of the criteria for electricity, the SSNC stipulates how electrical energy should be generated in order for it to be approved for Good Environmental Choice labelling.

Setting environmental requirements for renewable electricity generation and increasing energy efficiency are important in achieving a completely renewable energy system. Since the previous version of the criteria for electricity in 2009, the development of renewable electricity generation via solar and wind has increased. This is positive, but it is important to the SSNC that renewable electricity generation does not result in the loss of areas of high conservation value.

The SSNC works to ensure that hydropower is adapted to take account of the environment and biodiversity. Fish migration routes and more natural water flows are some of the new environmental requirements.

The power issue and flexibility in the energy supply are important areas going forward, and here combined heat and power plants have a role to play. For the SSNC, however, returning ash to the forest is the environmental requirement that makes a real difference.

As many of our licence holders in the energy business and their customers work with a focus on the global Sustainable Development Goals, the Good Environmental Choice ecolabel can be an important tool in their systematic environmental and climate work. The Good Environmental Choice criteria for electricity contribute primarily to the SDGs focusing on biodiversity, combatting climate change, sustainable forestry and reducing the environmental impact of cities.

The criteria for Good Environmental Choice Electricity were drawn up by the scheme's experts and have been ratified by the SSNC's Secretary-General. Licence holders, other experts and relevant companies have been kind enough to share their knowledge and valuable comments during the development of these criteria. We extend our thanks to everyone who made a contribution.

Sofie E Munteanu

Head of Good Environmental Choice

Purpose

Under the Swedish Society for Nature Conservation's Future Strategy, both the energy sector and energy use need to be more sustainable. The aim of setting environmental requirements for renewable electricity generation and requirements for additional environmental benefits is

- to promote renewable energy sources and the transition to a sustainable energy system
- to reduce the negative environmental impact of renewable electricity
- to increase energy efficiency so that energy consumption is reduced

Scope of the criteria

The criteria apply from 2021-10-01 until the next revised criteria come into force. After the review of the criteria, 2025-08-14, it has been decided that the criteria continue to be relevant. Revised criteria enter into force, no earlier than 2027-08-14.

All types of renewable electricity can be labelled with Good Environmental Choice if the means of production meets the established criteria.

Labelling electricity with Good Environmental Choice is a two-stage process. The basic criteria include specific demands for each production type, establishing which production can be marked with Good Environmental Choice. The additionality demands are requirements that lead to a direct environmental benefit for each unit of labelled electricity sold.

Reading instructions

When applying, it is helpful to have this criteria document alongside the application document to more easily understand how each requirement should be verified during the application process and the annual review.

Definitions

Additionality	Additional environmental benefits are required in order to achieve the purpose of the electricity criteria. To achieve this environmental benefit, money must be placed into a project fund as part of the criteria's environmental requirements. These funds can only finance projects that promote biodiversity or energy efficiency, over and above the base levels set by legislation, support systems or the market.
Renewable energy	Renewable energy is energy generated from sources that can be continuously renewed within a human lifespan.
Ecolabelled energy	Renewable energy from current production units that meet the environmental criteria and the additionality requirements.
Production unit	The unit in which production of electricity takes place. The

production unit can consist of an entire plant or part of a plant, for example a furnace in a combined heat and power plant with several combustion chambers or individual wind turbines in a wind farm.

Guarantees of origin	An electronic document that guarantees the origin of electricity, the energy source, and the geographical location of electricity production. The basis is that all electricity users have the right to receive information about the origin of the electricity according to EU Directive 2003/54/EC. The Swedish Energy Agency issues guarantees of origin to producers for each megawatt-hour (MWh) produced. Producers, in turn, sell guarantees of origin to electricity trading companies, which are obligated under Chapter 9, Section 28 of the Electricity Act (1997:857) to report the electricity production.
EECS	An international guarantee of origin (European Energy Certificate System) that can be exported and imported between actors in countries that are members of the Association of Issuing Bodies (AIB).
Wind share	A right, purchased from a share company, to buy a predefined volume of electricity at a price set by the organisation.

1 General criteria

A sustainable energy supply is important for a sustainable future. The criteria for electricity entail a focus on renewable electricity generation that complies with stringent environmental requirements. The cancellation of guarantees of origin means that the Swedish Society for Nature Conservation is able to guarantee that ecolabelled electricity is used. Electricity labelled with Good Environmental Choice means that funding is allocated to promote energy efficiency. The criteria are a tool for achieving the UN's Sustainable Development Goals concerning sustainable energy and combating climate change.

1.1 Renewable electricity

The electrical energy included in the ecolabelled product must originate from renewable energy sources, such as hydropower, wind power, solar power, biomass or biogas combustion.

1.2 Additional environmental benefits

Labelling electrical energy with Good Environmental Choice involves a sales volume-based allocation of money to the SSNC's funds for tangible environmental and climate benefits. For instructions and fees for additional environmental benefits via fund-related projects, see Appendices 1–2. All fund-related projects must be approved by the SSNC.

1.3 Additionality via the Energy Fund

Electrical energy labelled with Good Environmental Choice must be accompanied by a fund allocation of at least SEK 500/GWh to the Good Environmental Choice Energy Fund, which is regulated in accordance with Appendix 1 Calculation of additional environmental benefits.

1.4 Location of production units

The production units that generate the electrical energy included in the Licence Agreement must be located in Europe. For plants located outside Sweden, an environmental organisation approved by the SSNC in the country in question must be consulted for further environmental assessment.

1.5 Product name with geographical origin

For production units outside Sweden, the geographical origin of the electricity must be made clear to the end customer via the product name.

1.6 Membership of AIB, Association of Issuing Bodies

The production units must be located in a European country that is a member of AIB (www.AIB-net.org) and is affiliated with the European origin labelling system EECS (European Energy Certificate Standard), so that cancellation of guarantees of origin can take place in Sweden. Cancellation of guarantees of origin must always be carried out in the country where the final consumption of electricity labelled Good Environmental Choice takes place. There must be a physical power cable network between the production and consumption of electricity labelled Good Environmental Choice.

1.7 Approved production units

All production units must be approved by the SSNC and included in a licence for Good Environmental Choice Electricity. A description of the requirements for the production units can be found in sections 2–7.

1.8 Agreement with power plant owners of approved production units

Where licence holders are not themselves owners of production units, their application concerning Good Environmental Choice Electricity must be accompanied by an agreement with the power plant owner, showing the period during which the licence holder will use the production unit for purchasing and supplying ecolabelled electricity to their customers.

The section of the agreement attached to the application only needs to show the contractual parties, the power plants in question and the contract period per facility.

The agreement with the power plant owner must state that the licence holder is responsible for meeting all the criteria requirements, e.g. for the mean low water flow (MLQ) for hydropower.

1.9 **Publishing of approved production units**

In connection with the application regarding Good Environmental Choice Electricity being submitted and approved by the Swedish Society for Nature Conservation, the licence holder in turn consents that the following information about the production units can be shown to other licence holders in the Good Environmental Choice register: Licence holder, plant name, relevant identification number, location, output and average annual production for each production unit, as well as classification and time period of additionality fee.

1.10 **Ecolabelling of electricity supply**

The ecolabelling of electricity labelled with Good Environmental Choice arises when electricity is supplied to electricity users. Thus, it is the last party in the electricity trading process who is responsible for ensuring that licence fee payment and additionality in the form of fund allocation take place. This applies regardless of whether the supply of ecolabelled electricity takes place via bilateral contracts or as guarantees of origin, and can only be changed if the parties agree differently.

1.11 **Cancellation of guarantees of origin**

Cancellation of guarantees of origin for electricity labelled with Good Environmental Choice must be marked in the cancellation system, for example with the words Good Environmental Choice in the field “cancellation purpose”.

Cancellation must take place in accordance with the Swedish Energy Agency’s guidelines.

Clarification of cancellation

Guarantees of Origin (GoO) for year X can only be used for reporting year X if these are cancelled before 31 March of year X+1.

GoO’s that are valid beyond 31 March the following year and are cancelled within 12 months of the start of production are attributable to year X+1. This way, the prescribed lifetime of the original guarantee is not reduced below 12 months. Hence, GoO produced in year X may be accounted for in the following year.

This means that for Good Environmental Choice labelled GoO, it is important that there is a Licence holder for an approved facility during the production year for the GoO. However, according to the Swedish Energy Agency’s guidelines, cancellation of the GoO can take place after the power plant is no longer included in a licence in the Good Environmental Choice system.

2 Criteria for hydropower

The Swedish Society for Nature Conservation works to ensure that hydropower is environmentally responsible. This means, among other things, opportunities for fish migration, improved spawning and nursery grounds for fish and more natural water flows. Hydropower labelled with Good Environmental Choice must take into account the environment and biodiversity. The criteria contribute to the UN's Sustainable Development Goals on ecosystems and biodiversity.

2.1 Hydropower plant year of establishment

Only electricity from hydropower plants built before 1 January 1996 can be licensed for the Good Environmental Choice ecolabel.

2.2 Efficiency improvements in approved hydropower plants

Efficiency improvements can be made in hydropower plants within the current water rights court ruling if the changes do not cause further net damage to the environment. If changes are made that affect the water rights court ruling, the power plant must be reassessed by the SSNC.

2.3 Description of the environmental impact of hydropower plants

The licence holder must describe the environmental impact of the plant, i.e. describe how endangered species, habitats and the natural flow regime are affected. The report must include an environmental mitigation plan for the plant, with a description of how the plant applies requirements 2.6–2.8.

2.4 Mean low flow, MLQ

The total discharge through the turbine and outside the turbine must always be at least as great as the mean low flow in the watercourse. The mean low flow is calculated as an average of the lowest low water flow in each year over a period of 30 years. For Norwegian hydropower plants, “alminnelig lavvannføring/general low water flow” can be used instead of MLQ. See Appendix 3 Water flow.

If the lowest low water flow figures are not available for 30 years, we can accept a minimum of 10 years. MLQ should be reported as hourly values.

2.5 Minimum discharge

The minimum discharge must be released in the first instance into the original main channel and secondly into the channel with the greatest positive net effect on the environment. If, for technical reasons, it is not possible to discharge along a spillway, the minimum discharge can be released through the turbine.

2.6 Fish migration routes

Hydropower included in electricity labelled with Good Environmental Choice must have natural or technical fish routes for **upstream** and downstream migration. If there are no fish migration routes at the plant, an annual allocation equating to SEK 2500/GWh hydropower shall be made to the Good Environmental Choice Environmental Fund.

Following special consideration by the SSNC, power plants can be approved in exceptional circumstances, for example where natural geographical conditions prevent fish migration.

2.7 Natural water flow

Hydropower included in electricity labelled with Good Environmental Choice must distribute the flow during the year so that it provides as much environmental benefit as possible. If the water flow is not distributed in a way that makes it more natural, an annual allocation equating to SEK 1500/GWh hydropower shall be made to the Good Environmental Choice Environmental Fund.

Following special consideration by the SSNC, power plants can be approved in exceptional circumstances, for example where natural geographical conditions prevent such flows.

2.8 Limitation of rapid changes in the water level

Hydropower included in electricity labelled with Good Environmental Choice must avoid rapid changes in the water level, and the maximum speed of any level reduction should correspond to a general level of ± 13 cm/hour. If faster changes occur, an annual allocation equating to SEK 1500/GWh hydropower shall be made to the Good Environmental Choice Environmental Fund.

Following special consideration by the SSNC, power plants can be approved in exceptional circumstances, for example where natural geographical conditions prevent such changes in flow.

Reasons for requirements

[2.2] SSNC considers that improving efficiency according to paragraph 6 of the Swedish Regulation on Electricity Certificates (2003:120), whose applied measures mean raising the average water flow through the plant as well as minimising friction losses in waterways, in most cases causes net damage to the environment and therefore cannot be approved.

3 Criteria for electricity from combustion plants

A combined heat and power plant that simultaneously produces electricity and heat can have a high degree of efficiency and utilise almost all the energy in the fuel. In addition, most electricity is generated when it is needed most, which is important for a sustainable energy system. The criteria contribute to achieving the UN Sustainable Development Goals concerning sustainable forestry, ecosystems and reducing the environmental impact of cities.

3.1 Basic fuel requirements

The fuel for the production of electricity labelled with Good Environmental Choice must meet the basic criteria that apply to fuels, see section 4.

3.2 Allocation of non-renewable energy

No more than 5% non-renewable energy may be used during the entire lifecycle of the ecolabelled electricity. This includes energy used for the extraction, transport and processing of fuel, process energy at the plant, peak production during high loads as well as energy used during transport of waste products. If electrical and thermal energy are parallel products, the energy shares shall be allocated according to the principles of physical allocation.

3.3 Genetically modified fuel

The biofuel must not originate from genetically modified organisms, GMO.

3.4 Ash recycling

The ash from the combustion plant must be returned to the forest in accordance with the Swedish Forest Agency's rules and recommendations for forest fuel extraction and compensation measures. See guidelines in Appendix 4 Ash recycling.

3.5 Co-firing

Co-firing of different fuel types (such as forest chips and recycled wood chips) may take place, provided that the resulting ash can be returned to forest land. If there is a risk that co-firing will result in the ash not being recyclable, co-firing must be avoided.

3.6 Additionality via fund allocation

For biopower, where the fuel does not come from close-to-nature forestry, the allocation must be made to the Good Environmental Choice Forest Fund, which is regulated in Appendix 1 Calculation of additional environmental benefits.

Biofuels are fuels where biomass is the base material. The fuel may have undergone chemical processing, biological processing, conversion or have passed through other use.

Reasons for requirements

[3.6] The additional provision is due to the fact that the climate impact is generally higher for biopower than for solar power and wind power.

4 Criteria for fuels for combustion plants

The Swedish Society for Nature Conservation works to promote sustainable forestry. Biofuels must be traceable and sustainably produced with regard to the environment and biodiversity. Ash must be returned to the forest cycle to offset the extraction of nutrients. The criteria contribute to the UN's Sustainable Development Goals on ecosystems and biodiversity.

Fuels from forestry

4.1 Certified forestry

Biofuels based on wood fuels, including logging residue, must originate from close-to-nature forestry, for example with the support of a Plockhugget certificate or equivalent. Otherwise, the Licence Holder must allocate to the Good Environmental Choice Forest Fund in accordance with Appendix 1.

4.2 Stemwood, root, softwood and hardwood pulp

Root pulp and stemwood must not be included as fuel. Softwood and hardwood pulp may not be systematically included as fuel, but should instead be left in the forest.

Biofuels from agriculture

4.3 Organic origin

Agriculture must comply with organic farming principles, i.e. KRAV certification or equivalent.

Fuels from plantations and horticulture

4.4 Organic origin

Solid biofuels from plantations and horticulture, such as fruit, nuts, products and byproducts, as well as liquid vegetable oils, must comply with organic farming principles, i.e. KRAV certification or equivalent.

4.5 Bio-oil without PFAD

Liquid biofuels, including bio-oils, must not contain primary palm oil or soya oil. The bio-oil shall not contain byproducts such as PFAD (palm fatty acid distillate), which originate from distillation processes in palm oil production. Byproducts from the manufacture of primary products shall be regarded as bio-oil from plantations or horticulture.

4.6 Sustainability criteria for liquid biofuels

Liquid biofuels collected from plantations and farms must comply with the Swedish Act on sustainability criteria for biofuels and bioliquids.

FSC Mix or FSC 100 %

Certified is not accepted as a certificate for close-to-nature forestry.

Wood fuels are biofuels from wood raw materials that have not undergone chemical processing. Wood fuel comprises all biofuels where trees or parts of trees are the starting material, for example bark, needles, leaves and fuel raw materials from the forest and wood products industry such as sawdust, chips and sieved-out waste.

The fuel raw material may have been used for other purposes, such as demolition and packaging timber.

Fuels from waste paper and waste liquor are not counted as wood fuel.

The definition follows the Swedish standard for solid biofuels and peat (SS 187106:2017). Biomass refers to materials of biological origin that have not, or have only to a small extent, been chemically or biologically converted.

Primary palm oil refers to oil extracted from oil palm fruits that has not been used in another product.

Fuels from industry

- 4.7 **Fuel from certified forestry**
Non-processed byproducts from industry may be included as biofuel, provided that they originate from certified forestry. It must be possible to trace the fuel back to the relevant industry.
- 4.8 **Byproducts from industry**
Pure byproducts from industry can be included as biofuel. It must be possible to trace the fuel back to the relevant industry.
- 4.9 **Byproducts from paper and pulp production**
Byproducts from paper and pulp production such as black liquor and fibre sludge can be included as biofuel.
- 4.10 **Sustainability criteria for liquid biofuels**
Bioliquids collected from industry must comply with the Swedish Act on sustainability criteria for biofuels and liquid biofuels.

Examples of non-processed byproducts from industry are shavings, chips & bark from e.g. sawmills.
Examples of pure byproducts from industry include waste from furniture manufacturing. Examples of bioproducts from pulp and paper production are black liquor, tall oil and fibre sludge.
The bio-oil must not contain byproducts, such as PFAD (palm fatty acid distillate), which originate from distillation processes in palm oil production.

Biofuels from waste

- 4.11 **Sorted waste**
Sorted waste can be included as fuel provided that criteria 3.4–3.5 are met.
- 4.12 **Recycled timber**
Biofuels consisting of recycled timber, e.g. recycled wood chips, may be included as fuel provided that criteria 3.4–3.5 are met.
- 4.13 **Ash quality**
In order to ensure the quality of the ash, the fuel must be well sorted, i.e. free from metals, etc., and must not be painted or chemically treated.

Gaseous fuels

- 4.14 **Fertiliser**
Biogas collected from a fertilizer plant, from the digestion of waste and from sewage sludge can be included as fuel.
- 4.15 **Energy crops**
Biogas from energy crops may be included as fuel, provided that the organic matter fulfils the criteria for the area in question.
- 4.16 **Gasification**
Gas from gasification processes may be included as fuel, provided that the organic matter fulfils the criteria for the area in question.

Gas is considered to be biogas when organic materials such as manure, sludge from municipal or industrial treatment plants, household waste and waste from food production, restaurants and retailers are broken down by methane-producing bacteria under anaerobic conditions.

Reasons for requirements

[4.2] Extracting roots, softwood and hardwood for pulp removes important nutrients from the forest land. They should therefore be left in the forest.

[4.3] SSNC considers that biofuel from agriculture is a good complement to biofuel from the forest. However, production must take place in an ecologically sustainable way, with as little use of artificial fertilisers and pesticides as possible.

5 Criteria for wind power

The expansion of new wind farms is continuing, and increasing the proportion of renewable electricity generation is a positive development, but wind power is also a potential threat to areas of high conservation value or where reindeer herding is conducted. It is therefore important that renewable electricity generation is not placed where animal and plant life is adversely affected. The criteria contribute to the UN's Sustainable Development Goals on sustainable energy and biodiversity.

5.1 Wind power exclusion zones

Wind turbines that produce electricity labelled with Good Environmental Choice must not be installed in protected areas. Here, protected areas are areas protected by legislation in each country or international conventions, as well as areas listed in Appendix 5 Exclusion zones.

5.2 Software with stop protocols

A plant must have and be able to demonstrate that its wind turbines have software with stop protocols installed to protect bats (so-called "bat mode"). If there is no such software, the licence holder must explain why. Following special consideration by the SSNC, power plants can be approved in exceptional circumstances, for example where the geographical location makes stop protocols irrelevant.

Stop regulation must be in operation during the period from July 15 to September 15, from sunset to sunrise, provided that the wind speed (at rotor height) is < 6 m/s (average wind speed over a ten-minute period) and the temperature is simultaneously > 14°C.

5.3 Residual product plan

In order for electrical energy from wind turbines to be approved as electricity labelled with Good Environmental Choice, the licence holder is responsible for ensuring that a residual product plan is in place.

5.4 Wind power outside Sweden

For wind turbines located outside Sweden's borders, assessment can take place in collaboration with an independent local environmental organisation. If the plant is considered particularly unsuitable for environmental reasons, it cannot be approved for Good Environmental Choice Electricity.

6 Criteria for wind shares

6.1 Wind power exclusion zones

Wind turbines producing electricity labelled with Good Environmental Choice should not be located in protected areas in Sweden. Here, protected areas are areas protected by legislation in each country or international conventions, as well as areas listed in Appendix 5 Exclusion zones.

6.2 Labelling of wind shares

Wind shares can be marked with Good Environmental Choice from the time the wind turbine/wind farm has been granted legal starting clearance, planning permission or a permit. If the wind shares relate to as-yet unbuilt wind turbines, the following is required as a supplement to the application:

- a) planning application, building application and/or permit application,
- b) environmental impact assessment (if applicable), and
- c) confirmation of starting clearance, planning permission and/or permit approval and any associated conditions.

6.3 Shareowners' entire electricity supply labelled Good Environmental Choice

The electricity company responsible for billing customers must be able to provide enough electricity labelled with Good Environmental Choice to cover the shareowners' entire electricity consumption. The part of the electricity consumption provided through wind shares must consist of electrical energy from wind power labelled with Good Environmental Choice.

7 Criteria for solar power

The expansion of solar power continues to increase and it is important that renewable electricity generation is not placed where animal and plant life are adversely affected. The criteria contribute to the UN's Sustainable Development Goals on sustainable energy.

7.1 **Solar power exclusion zones**

Solar power that produces electricity labelled with Good Environmental Choice must not be installed in protected areas. Here, protected areas are areas protected by legislation in each country or international conventions, as well as areas listed in Appendix 5 Exclusion zones.

7.2 **Solar power on buildings**

Electrical energy from roof and facade-mounted solar panels, for example on private homes, can be grouped together for approval as one unit. Each module in the unit must be listed, specifying its address and installed capacity. Point 7.1 can then be excluded from the assessment by the SSNC.

7.3 **Residual product plan**

In order for electricity from solar power to be approved as electricity labelled with Good Environmental Choice, the licence holder is responsible for ensuring that a residual product plan is in place.

When assessing roof and facade-mounted solar power in accordance with point 7.2, the SSNC may drop the requirement for a residual product plan.

7.4 **Solar power outside Sweden**

For solar power plants located outside Sweden's borders, assessment can take place in collaboration with an independent local environmental organisation. If the plant is considered to be particularly unsuitable for environmental reasons, the plant cannot be approved for Good Environmental Choice electricity.

Reasons for requirements

[7.2] The exemption from point 7.1 is due to the fact that solar panels on existing roofs and buildings do not have any additional environmental impact.

8 Criteria for other renewable power

8.1 **Other energy source**

Other renewable electricity generation that is not included in this criterion may be included in the ecolabelled electricity supply following a special review by the Swedish Society for Nature Conservation.

Appendix 1

Calculation of additional environmental benefits

Background

In order for specific electricity generation to be ecolabelled with Good Environmental Choice, it must meet the requirements for additionality. Additionality means that money is set aside for tangible environmental benefits by allocating it to the Good Environmental Choice Energy Fund, the Good Environmental Choice Environmental Fund or the Good Environmental Choice Forest Fund. A licence holder can allocate money to the SSNC's central funds or to the licence holder's own account. If funds are allocated to the company's own account, these funds must be kept separate from other investment funds within the company. All fund-related projects must be approved by the SSNC.

Additionality criteria – amount for fund allocation

All renewable energy sources included in the sale of electricity labelled with Good Environmental Choice must generate an annual allocation to the Good Environmental Choice Energy Fund equating to SEK 500/GWh.

For biofuel-based electricity labelled with Good Environmental Choice, where the fuel does not come from close-to-nature forestry, allocation to the Good Environmental Choice Forest Fund must be added as follows:

Combustion of biogenic waste	5000 SEK/GWh
Combustion biofuel	5500 SEK/GWh

Hydropower included in the sale of electricity labelled with Good Environmental Choice is subject to an annual allocation to the Good Environmental Choice Environmental Fund, depending on which environmental mitigation measures have been implemented. In this case the following provisions apply:

- a) Hydropower where there are no fish migration routes is subject to a fund allocation of SEK 2500/GWh and a fund allocation to the Energy Fund of SEK 500/GWh.
- b) For hydropower where the water flow is never distributed across the year, a fund allocation of SEK 1500/GWh and a fund allocation to the Energy Fund of SEK 500/GWh will be added.
- c) For hydropower where the water level varies by more than ± 13 cm/hour over the year, a fund allocation of SEK 1500/GWh and fund allocation to the Energy Fund of SEK 500/GWh will be added.
- d) Hydropower that meets all the environmental requirements in 2.6 – 2.8 is only subject to fund allocation to the Energy Fund at SEK 500/GWh.

Fund allocation is always made in arrears based on the actual sales volume of electricity labelled with Good Environmental Choice.

Example: Fund allocation for the sale of different energy sourcesWind or solar power

Energy Fund, all volumes	SEK 500/GWh
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Biopower

Energy Fund, all volumes	SEK 500/GWh
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Forest Fund, all volumes	5000 alt. 5500 SEK/GWh
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Hydropower that meets the environmental requirements in 2.6–2.8

Energy Fund, all volumes	SEK 500/GWh
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Hydropower without any environmental mitigation measures

Energy Fund, all volumes	SEK 500/GWh
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Environmental Fund, all volumes*	SEK 5500/GWh
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Hydropower with fish migration route but no other measures

Energy Fund, all volumes	SEK 500/GWh
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Environmental Fund, all volumes*	SEK 3000/GWh
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* Mandatory allocation to the Good Environmental Choice Environmental Fund for at least 50% of the hydropower volume. For other hydropower volumes, the licence holder can choose to distribute the amount to the Environmental Fund or the Energy Fund as preferred.

The standard procedure for the SSNC, when licence holders do not make their own choice about hydropower fund distribution, is to allocate 50% to the Environmental Fund and 50% to the Energy Fund.

Appendix 2 Additional environmental benefits of fund-related projects

Background additionality through funds

Allocation of funding is an environmental requirement in the electricity criteria and provides tangible environmental and climate benefits by implementing projects that promote biodiversity in flowing watercourses, in forests and on other land, and that reduce energy consumption.

Fund allocations may be used for projects carried out by the licence holder's own company, or may be set aside in the SSNC's central funds.

All fund-related projects must be approved by the SSNC.

Work on fund-related projects must commence no later than 6 months after the company has obtained its licence, and may continue for a longer period than the current financial year. The status of the project and the results must be reported during annual inspections, with a final report once the project has been completed.

Good Environmental Choice Environmental Fund

The Environmental Fund's money will primarily be used to reduce the damage to nature from hydropower. The list below describes proposals for approved measures. Other proposals may be approved after a special assessment by the SSNC.

The measures do not need to be related to the hydropower plants that produce electricity labelled with Good Environmental Choice.

General requirements for projects that may be financed by the Environmental Fund

- The measure must be intended to reduce the harmful effects of hydropower on the environment.
- In some cases, a general grant can be paid out after the demolition of a dam or power plant. In these cases, applications must first undergo a special review by the SSNC.
- The project owner must have a corporate identity number.
- The project owner must be able to demonstrate the environmental benefit of the measure.
- The measure must be documented and be able to serve as a good example.
- The project owner must be able to receive study visits and disclose relevant information to interested parties.

Examples of projects that may be financed by the Environmental Fund

- Measures that lead to the preservation or regeneration of biodiversity in the forest or wetlands on the flood plain around the watercourse.
- Biotope conservation measures in flowing water.
- Wetland projects aimed at preserving biodiversity and which have major, positive climate effects.
- Change in regulation to reduce the damage to biodiversity or the natural environment as a whole. Examples of such measures are the change in regulation to achieve more natural water level variations and water flows, and the creation of high spring water levels to preserve natural shoreline vegetation.
- Measures such as fish migration routes that help to re-establish continuity in the watercourse. The measures should benefit more than one species.
- Removal of obstacles to migration for fish and other aquatic organisms in the watercourse.
- Projects aimed at preserving or promoting red-listed species that are threatened or damaged by hydropower.
- Demolition of existing dams or other structures in watercourses that constitute obstacles to migration.

- Financing of applied research that leads to greater knowledge of how hydropower can reduce its impact on the environment. May be granted after special assessment by the SSNC.
- Nature inventories aimed at developing measures that reduce the harmful effects of hydropower.

Good Environmental Choice Forest Fund for biodiversity

The Forest Fund's money will primarily be used to improve biodiversity in forests and on land. The list below describes proposals for approved measures. Other proposals may be approved after a special assessment by the SSNC.

The measures need not be taken in areas that are specifically linked to the plants that produce electrical energy labelled with Good Environmental Choice.

General requirements for projects that may be financed by the Forest Fund

- The aim of the measure is to improve biodiversity in forests.
- The measure should not be required by law or a current permit.
- The project owner must have a corporate identity number.
- The project owner must be able to demonstrate the environmental benefit of the measure.
- The measure must be documented and be able to serve as a good example.
- The project owner must be able to receive study visits and disclose relevant information to interested parties.

Examples of projects that may be financed by the Forest Fund

- Measures that lead to the preservation or regeneration of biodiversity in the forest or wetlands.
- Measures that lead to the preservation or regeneration of specific forest areas with high conservation value.
- Projects aimed at preserving or promoting red-listed species that are threatened or damaged in connection with logging or biofuel extraction.
- Nature inventories aimed at developing measures that promote biodiversity in the forest.
- Financing of applied research that specifically promotes red-listed species judged to be threatened by logging.
- Financing of applied research that leads to greater knowledge of how logging and extraction of biofuel can reduce their impact on the environment.

Good Environmental Choice Energy Fund

The Energy Fund's money will be used for efficiency measures where the result can be measured in electrical energy, thermal energy, or power output savings. The list below describes proposals for approved measures. Other proposals may be approved after a special assessment by the SSNC. The Energy Fund's money may constitute part-financing of a larger project, and it must then be clearly stated in the application which parts of the project are financed by the Good Environmental Choice Energy Fund.

Requirements for projects financed by the Energy Fund

- The aim of the measure must be to reduce energy use in buildings, industrial sites or homes.
- The measure must not be required by law or current permits.
- The project owner must have a corporate identity number.
- The project owner must be able to show that energy efficiencies can be traced back to the measure.
- The measure must be documented and be able to serve as a good example.
- The project owner must be able to receive study visits and disclose relevant information to interested parties.

Examples of projects that cannot be financed by the Energy Fund

- Purchase and installation of solar panels
- Purchase and installation of boilers
- Information materials, apps
- Teaching materials, visual installations

Management by the Swedish Society for Nature Conservation

The aim of the Good Environmental Choice Energy Fund is to make as much difference as possible, for as many people as possible, with the money available in the fund. That is why the Energy Fund, under SSNC's management, targets non-profit associations. They play a key role in society regarding social sustainability and inclusion. Non-profit associations often have limited financial means to implement energy efficiency measures.

Non-profit associations are not required to meet the criteria of purchasing Good Environmental Choice labelled electricity to apply for funding, as they not always have control of their electricity contracts.

Examples of projects that can be financed through the Energy Fund under the SSNC's management

- Projects that reduce electricity consumption for lighting without impairing the amount of light.
- Projects that reduce electricity consumption in compressed air systems.
- Projects that reduce electricity consumption in pumps, motors, and fans while maintaining system performance.
- Projects that reduce electricity consumption in white goods and office equipment.
- Projects that reduce electricity consumption in ventilation systems without impairing the indoor environment.
- Projects that reduce electricity use by eliminating consumption during idling.
- Projects that reduce energy consumption in electric heating systems through insulation, heat exchange, or control systems.
- Projects that reduce transmission losses.

- Projects that reduce electricity consumption in cooling systems without impairing comfort and desired cooling output, e.g., sunshades.
- Purchase and installation of battery solutions, only when installing solar panels.
- Purchase and installation of heat pumps when switching from electric or fossil-based heating systems.
- Testing of energy-efficient products that can be used for consumer information and that contribute to reduced electricity consumption.
- Purchase and installation of solar heating system.

Management by Licence Holders

Companies, municipalities, government organisations, and church associations that want to carry out energy efficiency projects with funding from the Energy Fund must also purchase electricity labelled Good Environmental Choice.

Non-profit associations, economic associations, tenant-owner associations and collectives may be exempt from this requirement, as they may not have the same financial resources or the ability to influence their electricity contracts.

Examples of projects that can be financed by the Energy Fund under Licence Holders' management

- Projects that reduce electricity consumption for lighting without impairing the amount of light.
- Projects that reduce electricity consumption in compressed air systems.
- Projects that reduce electricity consumption in pumps, motors, and fans while maintaining system performance.
- Projects that reduce electricity consumption in white goods and office equipment.
- Projects that reduce electricity consumption in ventilation systems without impairing the indoor environment.
- Projects that reduce electricity use by eliminating consumption during idling.
- Projects that reduce energy consumption in electric heating systems through insulation, heat exchange, or control systems.
- Projects that reduce transmission losses.
- Projects that reduce electricity consumption in cooling systems without impairing comfort and desired cooling output, e.g., sunshades.
- Purchase and installation of battery solutions, only when installing solar panels for non-profit associations that are customers of the Licence Holder.
- Purchase and installation of heat pumps when switching from electric or fossil-based heating systems, only for non-profit associations that are customers of the Licence Holder.
- Testing of energy-efficient products that can be used for consumer information and that contribute to reduced electricity consumption.
- Purchase and installation of solar heating system.

Appendix 3 Water flow

According to criterion 2.4 for Good Environmental Choice Electricity 2021:1, the mean low water flow (MLQ) must always be maintained. Since this flow rate will by definition be lower at times, it must be possible to assess which conditions are acceptable according to the criteria. Falling below the MLQ is quite natural, but in some cases the regulated water flows below the MLQ add to the negative environmental impact.

Criterion 2.4 states:

“2.4 The total discharge through the turbine and outside the turbine must always be at least as great as the mean low flow in the watercourse. The mean low flow is calculated as an average of the lowest low water flow in each year over a period of 30 years. For Norwegian hydropower plants, “alminnelig lavvannføring/general low water flow” can be used instead of MLQ.”

The assessment of plants is based on three cases

- (i) when the water flow is regulated upstream;
- (ii) when the water flow is unregulated; and
- (iii) when a reduced water flow occurs for technical reasons.

Case 1: Hydropower regulated upstream of the plant

As a starting point, the minimum discharge should not be less than the MLQ. If, for technical reasons, the inflow from upstream power plants falls below the MLQ for periods of time, the minimum discharge may be below the MLQ for short periods and shall then constitute inflow minus evaporation. However, the lowest low water flow (LLQ) must never fall below this. Zero discharge is not acceptable.

Water flows that fall below the MLQ must not be common and must not be systematic in nature. Based on a general analysis of the environmental impact of reduced water flows and how this changes natural water regimes, the SSNC has judged that a water flow below the MLQ must occur for no more than 336 hours per year in total. Therefore, the hours that the water flow falls below the MLQ must be reported in the annual inspection as described below.

In the annual inspection, the licence holder must report the occasions and periods during which the water flow falls below the MLQ. This, plus information about the cause of the low water flow, must be included in the report that the auditor reviews.

If the MLQ cannot be released for enough of the year, the power plant will not be approved, unless there are special reasons for approval. One such reason might be that it is impossible to release the MLQ for much of the year, but there are still documented natural assets that would clearly benefit from an approval. If a plant is to be approved in accordance with this exemption, a report on the natural assets and a description of the environmental benefits must be compiled by the applicant organisation and included in the application.

Examples of cases where water flows of less than the MLQ could be allowed to be released for short periods:

Power plants without the option to release the MLQ for much of the year, but where the power plant owner voluntarily releases a minimum discharge that is above the highest minimum discharge level that could be obtained in a reassessment of water rights (usually over 5% of the mean flow, MQ) and where there is a dry river channel with salmon trout and freshwater pearl mussels (species included in the Habitats Directive). In this case, the application should give an account of the status of the salmon trout and freshwater pearl mussels, and of how the increased minimum discharge may benefit these species. Naturally, the reason why the MLQ cannot be released all year round must also be reported.

Case 2: Unregulated inflow

In the case of unregulated inflow, the minimum discharge must correspond to at least the MLQ or inflow minus evaporation if the natural inflow is below the MLQ. The latter may occur during dry years. If it does occur, the entire inflow minus evaporation will constitute the minimum discharge as long as the inflow is below the MLQ.

Here too, the total time that the water flow is less than the MLQ must not exceed 336 hours

per year. Therefore, the hours that the water flow falls below the MLQ must be reported in the annual inspection.

Case 3: Reduced minimum discharge for technical reasons

During maintenance or repair of flood gates, spillways, turbines, etc., periods with a reduced minimum discharge may be necessary. Any such deviations from the criteria must be reported to the SSNC well in advance, ideally in connection with notification to the permit and supervisory authority. In these cases, the SSNC will assess whether the action is a significant departure from the purpose of the minimum discharge criterion.

Here too, the total time that the water flow is less than the MLQ must not exceed 336 hours per year. Therefore, the hours that the water flow falls below the MLQ must be reported in the annual inspection.

Definitions

Mean flow (MQ): The mean value of the daily flow in the examined dataset.

Mean low flow (MLQ): The mean value of the lowest daily flow each year in the examined dataset. This is normally measured over a 30-year period, but at least a 10-year period, under the Good Environmental Choice criteria. The mean low flow is typically about 7–10% of the mean flow and can be seen as a value for water flow that in regulated regimes does not fall below what should typically be the lower flow rate.

Lowest low flow (LLQ): The lowest daily flow in the examined dataset. This is normally measured over a 30-year period. The lowest low flow is typically less than 5% of the mean flow and is an extreme value for a watercourse. Water flows below this value should not normally be found in the watercourse. The value indicates an extreme value that is only exceptionally found naturally in the watercourse and that is normally compensated for by significantly higher values in other years (see MLQ).

General low water flow (AL): In Norway, the term “alminnelig lavvannføring” (general low water flow) is often used in connection with permit assessments. This is defined in the report *Lavvannføring – estimering och konsesjonsgrunnlag* by the Norwegian Water Resources and Energy Directorate. AL is calculated by sorting the daily values for the water flow and picking out number 350 for each year. These number 350 values from 20–30 years of data are then sorted in ascending order. The bottom third of these values is excluded and the lowest remaining value is the AL. This value cannot be calculated from other statistical measures of water flow. For the purposes of the Good Environmental Choice, AL can be considered equivalent to MLQ for Norwegian hydropower plants.

Appendix 4 Ash recycling

The starting point in the criteria for Good Environmental Choice Electricity is that ash resulting from the generation of electricity labelled with Good Environmental Choice should be returned to the forest. This is part of the process of linking the cycles and compensating for the extraction of nutrients as a result of forestry, which also includes extraction of branches and treetops during harvesting.

The application for a licence for the inclusion of a combustion plant specifies the basic conditions for the plant and how the ash is to be handled. Decisions on which ashes (bottom and/or fly ash) are to be returned are taken by the SSNC, based on this data.

In general, the following ashes must be returned:

- Grate boiler: return bottom ash and fly ash to the forest.
- Fluid bed boiler: return fly ash.
- Powder boilers: return fly ash.
- Recovery boilers: return fly ash.

Ash volumes for return should correspond to the amount of sold electricity labelled with Good Environmental Choice. This means that for a plant where the volume sold corresponds to the total production all ashes must be returned. In cases where only part of the produced heat volume is sold as Good Environmental Choice, at least the equivalent amount of ash should be returned. Ash must be allocated in accordance with the principles specified in this criteria document.

The ash recycling requirement is followed up in the annual inspection. Ash samples should be taken regularly (at least once a year).

Experience indicates that even when the combustion plant has only used fuels with high standards of purity, a chemical analysis of the ash can show measurement values that exceed the recommendations set by the Swedish Forest Agency for ash recycling. In countries where the Swedish Forest Agency's recommendations are not applicable, corresponding rules apply in each country. Ash recycling is examined in each application for a combustion plant that is to be included in a Good Environmental Choice licence.

In cases where certain ash volumes cannot be returned to forest land, there are two options:

Option 1: return of other ash that meets the recommendations

Under Option 1, the licence holder ensures that other ash is returned to forest land in a quantity equivalent to the amount that cannot be returned. This can be done by purchasing from/paying another ash producer, so that ash is returned to forest land. Another option is to order this other ash from an ash recycling company. The ash used for offsetting should not previously have been set aside for ash recycling. This return does not need to take place within the same geographical area as the licence holder's business.

The structure, schedule and implementation of the offsetting measure must be reported separately to the SSNC's case officer within three months of the decision by the SSNC on the amount of ash to be offset.

The licence holder must also submit an analysis of the reason why the ash could not be returned to forest land and, where appropriate, draw up an action plan. This should be submitted to the SSNC within six months of the licence holder receiving a decision from the SSNC on the amount of ash to be offset.

Option 2: a fine per tonne of ash that cannot be recycled is paid to Good Environmental Choice

Option 2 is that a fine equivalent to SEK 300/tonne ash (wet weight) is paid to the SSNC. The money will primarily be used for measures that increase biodiversity in the forest. The fine must be paid within three months of the decision by the SSNC on the amount of ash to be offset.

The licence holder must also submit an analysis of the reason why the ash could not be returned to forest land and, where appropriate, draw up an action plan. This should be submitted to the SSNC within six months of the licence holder receiving a decision from the SSNC on the amount of ash to be offset.

Appendix 5 Exclusion zones for solar and wind power production

In order to be approved within the criteria for Good Environmental Choice Electricity, plants generating solar power or wind power must not be located within the areas in this appendix.

Group A outside Sweden must observe the natural areas protected by the European Environment Agency (EEA) and, in some cases, assessments by the relevant country's environmental organisation.

Group A

Areas protected by legislation in each country or international conventions.

- 1) Ramsar sites
- 2) Natura 2000 areas
- 3) National parks
- 4) Nature reserves
- 5) Animal and plant protection areas
- 6) Nature conservation areas
- 7) Biotope protection areas
- 8) Objects in the National Park Plan
- 9) Areas of national interest, undisturbed mountain regions

Group B

Areas included in national investigations of particularly valuable nature that are not included in Group A above.

- 10) Valuable pasture land identified in the Swedish Board of Agriculture's TUVA database
- 11) Objects in the national wetland protection plan
- 12) State-owned natural forests and old-growth forests (SNUS objects)
- 13) Sveaskog's ecoparks

Group C

Important bird and bat areas as well as protected areas of water or forest not included in Groups A or B above.

- 14) Areas identified as an Important Bird and Biodiversity Area (IBA) by Birdlife International.
- 15) Important migratory bird areas, bird resting grounds and bat areas that are not currently IBA areas. These areas are designated by the SSNC.
- 16) Forest areas of high conservation value, designated by the SSNC.
- 17) Areas that, according to the SSNC, are particularly important for Sami cultural and business activities.

Good Environmental Choice (Bra Miljöval) is an independent ecolabelling scheme run by the Swedish Society for Nature Conservation, Sweden's largest environmental organisation with over 200,000 members. Launched in 1990, Good Environmental Choice is based on two founding ideas: that natural resources must be saved and that biodiversity and human health must not be threatened. Our criteria for licensees are strict and under continuous development. Products and services that carry the Good Environmental Choice label therefore have to constantly evolve in order to be kinder to health and the environment.

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